SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Computer Science

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Engineering & Technology)

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B.A./B.Sc. (12+3 System of Education) (Semester–I) (CBGS) (Batch 2023-26)
(Faculty of Engineering & Technology)

SEMESTER–I

COMPUTER SCIENCE

COMPUTER FUNDAMENTAL & PC SOFTWARE

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks: 75

Instructions for the Paper Setter:- Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. **Computer Fundamentals**: Definition of Computer , Components of a Computer System , Generations of Computers.
2. **Input Devices**: Keyboard , Mouse , Source Data Automation (MICR, OCR, OMR) , Vision Input Systems , Scanners, Screen Assisted Data Entry.
3. **Output Devices**: Monitors , Printers , Plotters , Voice Response Units.
4. **Data Storage Devices**: Primary Memory, Secondary Memory , Removable Data Storage Devices.

SECTION–B

MS–Word : Introduction to Word, Introduction to Parts of Word Window (Title Bar, Menu Bar, Tool Bar, The Ruler, Status Area), Page Setup, Creating New Documents, Saving Documents, Opening an Existing documents, Insert a second document into an open document, Editing and Formatting in document, Headers and Footers, Spell Checking, Printing document, Creating a Table, Using the Table Menu and Table formatting, Borders and Shading, Templates and Wizards, Mail Merge.

SECTION-C

MS-Power Point: Introduction to MS Power point, Power point elements, Templates, Wizards, Views, Exploring Power Point Menu, Working with Dialog Boxes, Adding Text, Adding Title, Moving Text Area, Resizing Text Boxes, Adding Art, Starting a New Slide, Starting Slide Show, Saving presentation; Printing Slides, Views (View slide sorter view, notes view, outlines view) Formatting and Enhancing text formatting, Creating Graphs (Displaying slide show and adding multi–media)

SECTION-D

MS-Excel: Introduction to Worksheet/Spreads, Features of Excel , Describe the Excel Window, Different Functions on different data in Excel, Creation of Graphs, Editing it and Formatting, Changing chart type to 2d chart or 3d chart, Creation of Worksheet, Adding, Deleting, Moving the text in Worksheet. Linking different sheets, Sorting the data, Querying the data, Filtering the data (auto and advance filters), What-if analysis, Printing a Worksheet.

References:

1. R.K. Taxali: Introduction to Software Packages, Galgotia Publications.
2. MS–Office Compiled by SYBIX
3. MS–Office BPB Publications.
4. Introduction to Computer by P.K. Sinha
5. Windows Based Computer Courses by Gurvinder Singh & Rachpal Singh, Kalyani Publishers.

SEMESTER–I

COMPUTER SCIENCE

COMPUTER FUNDAMENTAL & PC SOFTWARE

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks: 25

4 Hours/week

Practical based on Computer Fundamental & PC Software
Windows, MS Word, Power Point,

References:

1. R.K. Taxali: Introduction to Software Packages, Galgotia Publicaions.
2. MS–Office Compiled by SYBIX
3. MS–Office BPB Publications.
4. Introduction to Computer by P.K. Sinha
5. Windows Based Computer Courses by Gurvinder Singh & Rachpal Singh, Kalyani Publishers.

B.A./B.Sc. (12+3 System of Education) (Semester–II) (CBGS) (Batch 2023-26)
(Faculty of Engineering & Technology)

SEMESTER–II
COMPUTER SCIENCE
PROGRAMMING USING C
(THEORY)

Time: 3 Hours

	L	T	P
Credits	**3**	**0**	**0**

Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Note for the Candidates:
The students can use only Non–programmable & Non–storage type calculator.
Practical marks will include the appropriate weightage for proper maintenance of Lab record

SECTION–A

Data Representation, Introduction to Number Systems and Character Codes, Flow Charts, Problem Analysis, decision tables, pseudo codes and algorithms.

SECTION–B

Programming Languages C:
Basics of C: Introduction to C, Applications and Advantages of C, Tokens, Types of Errors
Data Types: Basic & Derived Data Types, User Defined Data Types, Declaring and initializing variables.
Operators and Expressions: Types of operators (Unary, Binary, Ternary), Precedence and Associativity
Data I/O Functions: Types of I/O function, Formatted & Unformatted console I/O Functions

SECTION–C

Control Statements: Jumping, Branching and Looping–Entry controlled and exit controlled, Advantages/Disadvantages of loops, difference between for, while and do–while.
Arrays: Types of Arrays, One Dimensional and Two Dimensional Arrays.
Strings: Introduction to Strings and String functions, array of strings.

SECTION–D

Functions: User Defined & Library Function, Function (Prototype, Declaration, Definition), Methods of passing arguments, local and global functions, Recursion.
Storage Classes: Introduction to various storage classes, scope and lifetime of a variable, Storage class specifiers (auto, register, static, extern), advantages and disadvantages.
Structure and Union: Introduction to structure and union, pointers with structure.

Books Recommended:-

(i) Programming with C Languages C. Schaum Series.
(ii) Yashwant Kanitkar – Let Us C
(iii) C Programming by Stephen G Kochan

B.A./B.Sc. (12+3 System of Education) (Semester–II) (CBGS) (Batch 2023-26)
(Faculty of Engineering & Technology)

SEMESTER–II

COMPUTER SCIENCE

PROGRAMMING USING IN C

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks: 25

4 Hours/week

Practical based on Programming in C

B.A./B.Sc. (12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Engineering & Technology)

SEMESTER–III

COMPUTER SCIENCE

COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS

(THEORY)

Time: 3 Hours

	L	T	P
Credits	**3**	**0**	**0**

Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Introduction:
Numerical methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
Non-linear Equations, Iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bisection, False position Method, Newton Raphson-method.

SECTION–B

Simultaneous Solution of Equations, Gauss Elimination Method Gauss Jordan method. Gauss Siedel Method, Matrix Inversion Method.

SECTION–C

Interpolation and Curve Fitting, Lagrangian Polynomials, Newtons Methods: Forward Difference Method, Backward Difference Method Divided Difference Method.
Numerical Integration and Different Tryaperzoidal Rule, Simpson's 1/3 Rule Simpson's 3/8 Rule.

SECTION–D

Numerical differentiation by Polynomial Fit Statistical Techniques

Measure of Central Tendency, Preparing frequency distribution table, Mean Arithmetic, Mean geometric, Mean harmonic, Mean median Mode.
Measure of dispersion, Skewness and Kurtosis Range, Mean deviation, Standard deviation, co-efficient of variation, Moments Skewness Kurtosis.
Correlation Bivariate Distribution Multivariate distribution.
Regression B.C., Linear Regression, Multiple Regression.
Trend Analysis least square fit linear trend, Non-linear trend
Y=axb
Y=abx
Y=acx
Polynomial fit: Y=a+alX+ea^2x2+a^nxn+n

Books Recommended:
1 B.S. Grewal: *Numerical Methods for Engineering,* Sultan Chand Publications.
2 V. Rajaraman: *Computer Oriented Numerical Methods*, Prentice Hall of India Private Ltd., New Delhi.

SEMESTER–III

COMPUTER SCIENCE

COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS LAB.

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks: 25

4 Hours/week

Practical based on Computer Oriented Numerical and Statistical Methods

SEMESTER–IV

COMPUTER SCIENCE

DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++

(THEORY)

Time: 3 Hours

	L	T	P
Credits	**3**	**0**	**0**

Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION– A

Data Structure: Introduction to elementary Data Organization, Common Operation on Data Structures, Algorithm Complexity, Big O Notation, Time-Space Trade off between Algorithm.
Arrays: Array Defined, Representing Arrays in memory, Various operations on Linear arrays, Multi Dimensional arrays.
Linked Lists: Types of Linked Lists, representing linked list in memory, advantages of using linked lists over arrays, Various operations of linked lists.

SECTION–B

Stacks: Description of STACK structure, Implementation of stack, using arrays and linked lists, application of stack-converting Arithmetic expression from infix notational to polish and their subsequent evaluation, quicksort technique to sort an array.

Queues: Description of queue structure, Implementation of queue using arrays and linked lists, description or priorities of queues, deques.

SECTION–C

Sorting and Searching : Sorting Algorithms, bubble sort, selection sort, insertion sort, quick sort, merge sort, heap sort, searching Algorithms, linear search and binary search.

SECTION–D

Object Oriented Programming: Objects & Classes, Constructor & Destructor, Operator Overloading, Overloading uniary operators, Overloading binary operators, Data conversion, Pitfalls of operator overloading and conversion, Inheritance, Derived class and pase, Derived class constructor. Overloading member functions, Inheritance in the English distance class, class hierarchies, Public & Private inheritance, Level of inheritance, Polymorphism, problems with single inheritance, multiple inheritance

References:
1. Seymour Lischutz, *Theory and Problems of Data Structures.*
2. *Schaum's Outline Serie*s, McGraw Hill Company.
3. Tanenbaum, *Data Structure Using C++*

SEMESTER–IV

COMPUTER SCIENCE

DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++ LAB

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks: 25

4 Hours/week

Practical based on Data Structures & Programming Language Using C++

SEMESTER–V
COMPUTER SCIENCE
DATA BASE MANAGEMENT SYSTEM & ORACLE
(THEORY)

Time: 3 Hours

	L	T	P
Credits	**3**	**0**	**0**

Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Introduction to Data, Field, Record, File, Database, Database management system., DBMS Environment, DBA, responsibilities of DBA, Structure of database system, Advantage and disadvantage, levels of database system, Data Independence, Structure and Components of DBMS, E–R diagram, different keys used in a relational system

SECTION–B

Relational model, hierarchical model, network model, comparison of these models, Relational form like INF, 2NF, 3NF, BCNF, 4th NF, 5th NF, DBTG

SECTION–C

SQL: Introduction to SQL–DDL, DML, DCL, Join methods & sub query, Union Intersection, Minus, Built in Functions

SECTION–D

Concurrency control and its management, protection, security, recovery of database.
Big Data: Introduction to Big Data and Analytics, Introduction to NoSQL

References:
1 Desai B.C.: An Introduction to Database Systems, Galgotia Publishers.
2 Date C.J. An Introduction to Database Systems, Vol. I, Narosa Publishers.

SEMESTER–V

COMPUTER SCIENCE

DATA BASE MANAGEMENT SYSTEM & ORACLE

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks: 25

4 hours/week

Practical: Based on Database Management System and Oracle

Note: Practical marks will include the appropriate weightage for proper maintainance of Lab.

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Engineering & Technology)

SEMESTER–VI
COMPUTER SCIENCE
BASIC OF INTERNET TECHNOLOGIES
(THEORY)

Time: 3 Hours

	L	T	P
Credits	**3**	**0**	**0**

Marks: 75

Instructions for the Paper Setter: Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Internet: Introduction to Internet and its application, services offered by internet, Evolution of internet Intranet and Extranets, Internet Architectures, Internet Applications, , internet service provider (ISP), windows environment for dial up networking (connecting to internet), internet addressing (DNS) and IP addresses).
WWW: Introduction, working of WWW, Web browsing (opening, viewing, saving and printing a web page and bookmark), web designing using HTML, DHTML with programming techniques.

SECTION-B

Introduction to HTML: Introduction to websites, Static vs dynamic websites, server side and client side scripting HTML 5 : Introduction , Structure of a web page , HTML Elements, HTML attributes, Basic Text Formatting tags, Comments, Links, Lists, Image, Style, Forms

SECTION-C

Media, Classes, iframes, working with Tables : Page Design & Layout with Links
CSS : Introduction to CSS and understanding CSS syntax, Adding Rules to a Style Sheet, managing style sheets (creating, Importing and embedding)

SECTION-D

Controlling page layout, Understanding grouping and nesting Styling text, Modifying background and foreground elements , Understanding tables, columns and lists ,Using global styles Understanding CSS box model, Working with images, Creating navigation bars using CSS Html Website using CSS.

References:

1. Chris Bates, “Web Programming- Building Internet Applications”, Wiley India, 2006.
2. David William Baron, The World of Scripting Languages.
3. “Understanding The Internet”, Kieth Sutherland, Butterworth-Heinemann; 1st Edition (October 31, 2000).
4. “Beginning Web Programming with HTML, XHTML, and CSS”, Jon Duckett, John Wiley & Sons, 06 Aug. 2004.

SEMESTER–VI

COMPUTER SCIENCE

INFORMATION TECHNOLOGY

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks: 25

4 hours/week

Note: Practical Marks will include the appropriate weightage for proper maintainance of lab record.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Economics

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Economics & Business)

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B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Economics & Business)

SEMESTER–I

ECONOMICS

MICRO ECONOMICS

Time: 3 Hours **Credits : L - T - P**
4 - 0 - 0
Total Marks: 100

Note : 1 Credit = 1 hour of Teaching
4 Credit = 6 lectures of 40 minutes per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Introductory: Definition of Economics, Adam Smith, Marshall, Robbins, Nature and Scope of Microeconomics. Basic Economic Problems.
Demand Function; Supply Function, Price Determination, Slope and Elasticity (Concepts), Elasticity of Demand – Price, Income and Cross. Measurement of price elasticity of demand. Utility Analysis, Indifference Curve Analysis and Revealed Preference Analysis (Meaning and Equilibrium).

SECTION–B

Theory of Production and Costs: Concept of Production Function. Laws of Returns to Scale and Law of Variable Proportions.
Cost : Traditional Theory, Concepts and Costs curves in the short and in the long run. Revenue Curves and their relationship with elasticity of demand.

SECTION–C

Market forms: Perfect Competition; Assumptions, Price and output determination of firm and Industry in Short run and Long run; Monopoly: Assumptions, Equilibrium. Monopolistic Competition: Assumptions.

SECTION–D

Factor Pricing : Marginal Productivity Theory and Modern Theory of Distribution.
Rent : Concept; Ricardian Theory and Modern Theory of Rent.
Interest : Concept of interest; classical theory, loanable funds theory.
Profit : Concept of profit; Risk and uncertainity theories.

Recommended Texts:
1. R.G. Lipsey: Introduction to positive economics, EL BS, London, 1969.
2. Stonier & Hague: A Text book of Economics Theory, 9th ed., ELBS, London, 1973.
3. Paul Samuelson: Economics, Mcgraw Hill, Kogakushad, Tokyo, 1973.
4. N.C. Ray: Microeconomic Theory, Macmillan, Delhi, 1975.
5. D. Salvatore: Microeconomics.
6. Koutsoyiannis: Modern microeconomics.

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Economics & Business)

SEMESTER–II

ECONOMICS

MACROECONOMICS

Time: 3 Hours **Credits : L - T - P**
4 - 0 - 0
Total Marks : 100

Note : 1 Credit = 1 hour of Teaching
4 Credit = 6 lectures of 40 minutes per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Distinction between Micro and Macro Economics; Determination of Income and Employment : Classical and Keynesian models; Say's Law of Market and aggregate demand and aggregate supply.
Consumption functions; average (short-run and long run) and marginal propensity to consume; static and dynamic multipliers.

SECTION-B

Investment: Meaning, Demand schedules and factors affecting investment decision. Marginal Efficiency of Capital. Accelerator, multiplier-accelerator interaction.
Trade cycles-meaning, characteristics and phases. Samuelson and Hicks Models of trade cycles.

SECTION-C

Money : Its functions and role. Money and Capital Markets (Introductory). Quantity Theory of Money. Fisher's and Cambridge's equations. Liquidity preference theory.
Banking : Definitions of banks. Credit creation and credit control.

SECTION-D

Inflation: Concept, Causes and cures. Inflation-unemployment Trade-off (only Phillips' contribution).
Macroeconomic Policies: Fiscal policy – meaning, objectives and instruments. Monetary policy – meaning, objectives and instruments.

Recommended Texts:

1. Shapiro, E. Macroeconomic Analysis, Harcourt, Brach and World, New York, 1978.
2. Dernaburg, T.F. and MC Dougall D.M., Macroeconomics : the Measurement, Analysis and Control of Aggregate Economic Activity, McGraw-Hill, Kogakusha, Tokyo, 1972.
3. Gupta, S.B. Monetary Economics : Institutions, Theory and Policy, S. Chand, New Delhi, 2000.

B.A./B.Sc. (12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Economics & Business)

SEMESTER–III

ECONOMICS

INDIAN ECONOMY

Time: 3 Hours **Credits : L - T - P**
4 - 0 - 0
Total Marks: 100

Note : 1 Credit = 1 hour of Teaching
4 Credit = 6 lectures of 40 minutes per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION – A

Nature of Indian Economy, Agriculture in India: Nature and Importance of Agriculture, Causes of Decline in Productivity, Sustainable Agricultural Growth. Green Revolution and New Agricultural Strategy, WTO and Indian Agriculture (Introductory).

SECTION – B

Industry: Performance and Problems of Industrial Development, Public Sector versus Private Sector, Role of Privatization, Role of Small and Cottage Industries. Latest Industrial Policy.

SECTION – C

Foreign Trade: Direction and Composition of Exports and Imports Since 1991, Recent Foreign Trade Policy, Balance of Payment Problem. Foreign Capital and Multinational Corporations in India.

SECTION – D

Features of Population Growth in India, Major Problems of the Economy – Inflation, Unemployment, Poverty and Inequality, Current Indian Tax Structure. Planning- Objectives, Strategy, Evaluation of Planning in India. A Brief Idea of Objectives, Targets, Resources of the Latest Five Year Plan (Twelfth Five Year Plan). Role and Functions of Niti Ayog.

Recommended Texts:

1. Mishra and Puri: Indian Economy, Himalaya Publication House, Mumbai, (Latest Edition).
2. Rudder Dutt and: Indian Economy (Latest), S. Sundharam Chand & Co. Ltd., New Delhi, (Latest Edition).
3. A.N. Aggarwal: Indian Economy, Vikas Publications, Delhi, (Latest Edition).
4. C.D. Wadhwa: Indian Economic Policy (1980), Tata McGraw Hill, Bombay, 1973.
5. GOI: Economic Survey (Latest Edition).

SEMESTER–IV
ECONOMICS
INTERNATIONAL ECONOMICS AND PUBLIC FINANCE

Time: 3 Hours **Credits : L - T - P**
4 - 0 - 0
Total Marks: 100

Note : 1 Credit = 1 hour of Teaching
4 Credit = 6 lectures of 40 minutes per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

International Trade: Internal and External Trade. Classical and Heckscher. Ohlin Theories, Gains from Trade, Terms of Trade, (gross, net and income terms of trade). Trade and economic development.
Commercial Policy: Free trade vs. protection, rationale of a protectionist policy in less developed area. GATT & WTO (Introductory).

SECTION-B

Balance of Payments: Meaning and components of balance of payments, Methods for correcting adverse balance of payments, devaluation and direct control.
Rate of Exchange: Meaning and determination, Fixed and flexible exchange rates.

SECTION-C

Public Finance: Nature, scope importance.
Public Expenditure: Meaning, principles, importance, effect of public expenditure on production and distribution.

SECTION-D

Taxes: Meaning, classification, features of a good taxation system, canons of taxation, incidence and impact of taxation.
Public Debt: Meaning, objectives, importance, its burden.

Recommended Texts

1. Sodersten, B.O.: International Economics, Macmillan, London, 1980.
2. Salvatore, B.: International Economics (1990), Macmillan Publishing Company, New York, 1975.
3. Maclean and: International Institutions in Trade Snowdown and Finance (1981).
4. Aggarwal, M.R.: International Institutions and Development in Developing Countries, Deep & Deep Publications, New Delhi, 2001.
5. Musgrave, R.A.: Theory of Public Finance.
6. Taylorm Philip: The Economics of Public Finance.
7. Buchanan, J.M.: The Public Finance.
8. Baltin, H.: Public Finance.
9. Herber, B.P.: Modern Public Finance.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Economics & Business)

SEMESTER–V

ECONOMICS

ECONOMICS OF DEVELOPMENT

Time: 3 Hours **Credits : L - T - P**
4 - 0 - 0
Total Marks: 100

Note : 1 Credit = 1 hour of Teaching
4 Credit = 6 lectures of 40 minutes per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Economic Development: Meaning and Measurement, Economic and Non-Economic Factors, Nature of Underdevelopment, Characteristics of Undeveloped Countries. Human Development Index, Concept of Sustainable Development.
Dualism: Social and Technological Dualism, Lewis Model of Unlimited Supply of Labour, Problems of Unemployment and Disguised Unemployment.

SECTION–B

Models of Growth: Classical, Marxian, Schumpeter's, Harrod-Domar and Solow's Growth Models.

SECTION–C

Rostow's Stage Theory, Strategies of Economic Development-Balanced vs. Unbalanced Growth; Theory of Big Push; Libenstrein's Critical Minimum Efforts Thesis, Export Promotion and Import Substitution.

SECTION–D

Capital Formation – Meaning and Sources. Choice of Technique, Role of Planning in Under Developed Countries, Need, Objective, Strategy, Types and Problems of Planning.

Suggested Readings:

1. Rostow W.W.: Stages of Growth
2. G.M. Meier: Leading Issues in Economic Development.
3. Micheal Todaro: Economic Development in the Third World.
4. Higgins: Economic Development: Theory and Politics.
5. Meier, G.M.: Leading Issues in Economic Development, Oxford University Press, New Delhi, 1995.
6. Thirlwall, A.P.: Growth and Development, Macmillan, London, 1999.
7. Todaro, M.P.: Economic Development in Third World, Oxford University, London.
8. Yotopoulous, P.A. and Nugent, J.: Economics of Development, Harper and Row, New York.

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Economics & Business)

SEMESTER–VI

ECONOMICS

QUANTITATIVE METHODS FOR ECONOMISTS

Time: 3 Hours **Credits : L - T - P**
4 - 0 - 0
Total Marks: 100

Note : 1 Credit = 1 hour of Teaching
4 Credit = 6 lectures of 40 minutes per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Sets, Relations and functions, Limits and continuity (Basic concepts), Derivative of simple functions only (excluding log & exponential functions). Maxima/Minima for single variable functions. Introduction to matrices - definition, properties & inverse.

SECTION–B

Measures of central tendency — Mean, Mode, Median and Geometric Mean; Measures of dispersion.

SECTION–C

Concepts and Measure of skewness and kurtosis: Boyle's & Karl Pearson's measures. Simple correlation & regression (ungrouped & grouped data).

SECTION–D

Interpolation: Concepts and Methods — Binomial expansion, Newton and Lagrange's Method (with emphasis on missing values only). Price Index Numbers–Weighted and Unweighted Index Numbers, various formulae and consistency tests.

Suggested Readings :

1. Archibald, G. & R.G. Lipsey (1973); Introduction to a Mathematical Treatment of Economics, 2nd Ed. Weisdenfeld and Nicholson, London.
2. Yamane, Taro (1968); Mathematics for Economists, 2nd ed. Prentice Hall, Englewood Cliffs, New Jersey.
3. Croxton, F.E. Cowden D.J. and Klein, S. (1973); Applied General Statistics, 3rd. Ed., Prentice Hall of India, New Delhi.
4. Fox, I.A. (1972); Intermediate Economic Statistics, Wiley Eastern Pvt. Ltd., New Delhi.
5. Nagar, A.L. and Das, R.K. (1976); Basic Statistics, Oxford University Press, Bombay.
6. Baumol (1973); Economic Theory and Operations Analysis, Prentice Hall of India Pvt. Ltd., New Delhi.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Chemistry

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Sciences)

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B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–I

CHEMISTRY

(INORGANIC CHEMISTRY–I)

(THEORY)

Time: 3 Hrs. **Marks: 50**
Credits: 2-0-0 **30 Hrs.**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. Atomic Structure **7 Hrs.**

Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals, Schrodinger wave equation, significance of ψ and ψ^2, quantum numbers, radial and angular wave functions and probability distribution curves, shapes of s,p,d orbitals. Aufbau and Pauli exclusion principles, Hund's multiplicity rule. Electronic configurations of the elements and ions.

SECTION–B

II. Periodic Properties **8 Hrs.**

Position of elements in the periodic table; effective nuclear charge and its calculations. Atomic and ionic radii, ionization energy, electron affinity and electronegativity –definition, methods of determination or evaluation, trends in periodic table and applications in predicting and explaining the chemical behaviour.

SECTION–C

III. Chemical Bonding **8 Hrs**

Covalent Bond –Valence bond theory and its limitations, directional characteristics of covalent bond, various types of hybridizationand shapes of simple inorganic molecules and ions. BeF_2, BF_3,CH_4, PF_5, SF_6, IF_7, $SnCI_2$, XeF_4, BF_4, $SnCl_6$, CO_3^{2-}, NO_3^-, NO_2^-, ClO_4^-, ClO_3^-, SO_4^{2-}. Valence shellelectron pair repulsion (VSEPR) theory to NH_3, H_3O^+, SF_4,CIF_3, ICl_2 and H_2O. MO theory, homonuclear (elements and ions of 1st and 2nd row), and heteronuclear (BO, CN^-, CO, NO^+, CO^+, CN) diatomic molecules, multicenter bonding in electron deficient molecule (Boranes). Percentage ionic character from dipole moment and electronegativity difference.

SECTION–D

IV. **Ionic Solids** **7 Hrs**

Concept of close packing, Ionic structures, (NaCI type, Zinc blende and Wurtzite, CaF_2 and antifluorite), radius ratio rule and coordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy and Born–Haber cycle, solvation energy and solubility of ionic solids, polarizing power and polarisability of ions, Fajan's rule. Metallic bond– free electron, valence bond and band theories.

Weak Interactions –Hydrogen bonding, vander Waals forces.

Books Suggested:-

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDamiel, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
6. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
7. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
8. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
9. University General Chemistry, C.N.R. Rao, Macmillan.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–I

CHEMISTRY

(ORGANIC CHEMISTRY–I)

(THEORY)

Time: 3 Hrs. **Marks: 75**
Credits: 3-0-0 **45 Hrs.**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. Structure and Bonding (5 Hrs.)
Hybridization, bond lengths and bond angles, bond energy, localized and delocalized chemical bond, Vander Waals interactions, hydrogen bonding,
Electron displacement: resonance effect, hyperconjugation, Inductive and electrometric effects and their applications.

II. Mechanism of Organic Reactions (6 Hrs.)
Curved arrow notation, drawing electron movements with arrows, half–headed and double–headed arrows, homolytic and heterolytic bond breaking. Types of reagents – electrophiles and nucleophiles.
Reactive intermediates –Carbocations, carbanions, free radicals, carbenes, arenes and nitrenes (examples, formation and stability). Assigning formal charges on intermediates and other ionic species.

SECTION–B

III. Alkanes (4 Hrs.)
Isomerism in alkanes, sources, methods of formation (with special reference to Wurtz reaction, Kolbe reaction, Corey–House reaction and decarboxylation of carboxylic acids), physical properties and chemical reactions of alkanes. Mechanism of free radical halogenation of alkanes: orientation, reactivity and selectivity.

IV. Alkenes and Alkynes (8 Hrs.)

Nomenclature of alkenes, methods of formation, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides. The Saytzeff rule, Hofmann elimination, physical properties and relative stabilities of alkenes. Chemical reactions of alkenes:-mechanisms involved in hydrogenation, electrophilic and free radical additions, Markownikoff's rule, hydroboration-oxidation, oxymercuration-demercuration, reduction. Epoxidation, ozonolysis, hydration, hydroxylation and oxidation with $KMnO_4$.

Substitution at the allylic and vinylic positions of alkenes.

Alkyne: Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes, acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroboration-oxidation, metal-ammonia reductions, oxidation and polymerization.

SECTION–C

V. Alkyl Halides (7 Hrs.)

Nomenclature and classes of alkyl halides, chemical reactions. Mechanisms of nucleophilic substitution reaction of alkyl halides, SN_2 and SN_1 reactions with energy profile diagrams. Nucleophilic elimination reaction.

VI. Cycloalkanes: (5 Hrs.)

Baeyer's strain theory and its limitations. Ring strain in small rings (cyclopropane and cyclobutane), theory of strainless rings. The case of cyclopropane ring : banana bonds.

SECTION–D

VII. Arenes and Aromaticity (10 Hrs.)

Aromaticity : the Huckel's rule, aromatic ions.

Nomenclature of benzene derivatives. The aryl group. Aromatic nucleus and side chain. Structure of benzene: Molecular formula and Kekule structure. Stability and carbon carbon bond lengths of benzene, resonance structure.

Aromatic electrophilic substitution–general pattern of the mechanism, role of σ and π complexes. Mechanism of nitration, halogenation, sulphonation, mercuration and Friedel Crafts reaction. Energy profile diagrams. Activating and deactivating substituents, reactivity and orientation of disubstitution. Side chain reactions of benzene derivatives.

Methods of formation and chemical reactions of alkylbenzenes.

Books suggested:-

1. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
2. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson education, 2008.
3. Fundamentals of Organic Chemistry, Solomons, John Wiley.
4. Introduction to Organic Chemistry, Sireitwieser, Heathcock and Kosover, Macmilan.

B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–I

CHEMISTRY

(PRACTICAL)

Duration: 3½ Hrs. **Marks: 50**
Credits: 0-0-2 **6 Period/Week**

Inorganic Chemistry: Semi Micro analysis. Cation analysis, Separation and identification of ions from groups I, II, III, IV, V, and VI. Anionic analysis. Four ions with no interference.

Organic Chemistry Laboratory Techniques
Determination of Melting Point

Naphthalene 80–82^{o}C	Cinnamic acid 132.5–133^{o}C
Benzoic acid 121.5–122^{0}C	Salicylic acid 157.5–158^{o}C
Urea 132.5–133^{o}C	Acetanilide 113.5–114^{o}C
Succinic Acid 184.5–185^{o}C	m–dinitro benzene 90^{o}C
P–dichlorobenzene 52^{o}C	Aspirin 135^{o}C

Determination of Boiling Point

Ethanol 78^{o}C	Cyclohexane 81.4^{o}C,
Benzene–80^{o}C	Toluene 110°C

Practical Examination

1) Inorganic Mixture	25
2) Melting Point/Boiling point of organic substance	10
3) Viva–Voce	10
4) Note Book	05

Books Suggested:-

1. Vogel's Qualitative Inorganic Analysis, revised, Svehla, Orient Longman.
2. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge. Standard Methods of Chemical. Analysis, W.W. Scott: The Technical Press.
3. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
4. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
5. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.

SEMESTER–II

CHEMISTRY

(INORGANIC CHEMISTRY–II)

(THEORY)

Time: 3 Hrs. **Marks: 75**
Credits: 3-0-0 **45 Hrs.**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. s–Block Elements–I **11 Hrs.**

General characteristics of group I elements: Atomic and ionic radii, Ionisation energies, Melting and boiling point, density, electropositive or metallic character, oxidation states, flame colouration, photoelectric effect, nature of compound, lattice energies.
Chemical properties: Action with air, action with hydrogen, action with water, solutions in liquid ammonia, reducing nature.
Anomalous Behaviour of lithium and its diagonal relationship with magnesium.

General characteristics of group II elements: Atomic and ionic radii, melting and boiling point, ionisation energy, electropositive character, flame coloration, tendency to form bivalent ions. Chemical properties: action with air, Combination with hydrogen, Action with water, Action with nitrogen, Formation of halides. Anomalous Behaviour of Beryllium and its diagonal relationship with Magnesium. Solvation and complexation tendencies of alkali metals and alkaline earth metals. Role of Alkali metals and alkaline earth metals.

II. Acids and Bases
Arrhenius, Bronsted-Lowry, the Lux-Flood, solvent system and Lewis concepts of acids and bases.

SECTION–B

III. p-Block Elements **11 hrs.**
Group 13:
General characteristics, Atomic and ionic radii, melting and boiling point, Ionisation energies, Oxidation states, Electropositive character, Tendency to form covalent compounds, **Compounds of group 13**: Hydrides, Oxides and hydroxidesm, Oxoacid; Boric acid: Preparation from Borax, Colemanite, Boron nitride.
Structure and Properties of Boric acid: Action of heat, Acidic nature. Reaction with ethyl alcohol, calcium fluoride and sulphuric acid.

Preparation, properties and structure of Diborane. Borazine: preparation, properties and structure. Boron halides: Relative strength of trihalides of Boron as lewis acids, Boron hydrides ($LiBH_4$,$NaBH_4$), Structural difference between trihalides of Boron and Aluminium, Anomalous behaviour of Boron and its diagonal relationship with Silicon.

Group 14

General characteristics; Atomic radii, Ionisation energies, Melting and boiling point, oxidation state, metallic character, catenation, Allotropy, Tendency to form multiple bonding.

Compounds of group 14: Hydrides of silicon its preparation and properties, toxic nature of CO, Dioxide of carbon and silicon (CO_2 & SiO_2). Comparison of carbon tetrachloride and silicon tetrachloride. Chemistry of Fullerenes

Group 15

General characteristics: Atomicradii, Ionisation energies, Electronegativity, Oxidation states, Metallic character, Catenation, Allotropy, Elemental state.

Compounds: Preparation, structure, comparative characteristics of hydrides of group 13 elements. Ammonia: Preparation by Haber's process, chemical properties

Hydrazine: Preparation by Raschig's process, chemical properties.

Hydrides of Phosphorus: its laboratory preparation, chemical properties and uses.

Oxides of nitrogen and phosphorus, Oxo acids of nitrogen and phosphorus (structure and basicity), Nitric acid: preparation By Ostwald's process and properties, halides of P

SECTION–C

IV.p–Block Elements-II **11 Hrs.**

Group 16

General characteristics: Atomic radii, Ionisation energies, Melting and boiling point, Electron affinity, Oxidation state, Catenation, Elemental state, Allotropy.

Compounds: Comparative characteristics of Hydrides of group 16, Chemical properties of SO_2, structure of SO_2 & SO_3, Oxoacid of sulphur: structure and basicity. Prpreparation of sulphuric acid by contacts process and its chemical properties

Group 17

General characteristics: Atomic radii, Ionisation energies, melting and boiling point, Electron affinity, Electronegativity, Nonmetallic character, colour, Oxidation state and reactivity

Compounds: Characteristics of hydrides of group 17, Relative acidic strength of hydro acids and Oxoacids of group 17, structure of interhalogen compounds and polyhalides.

Important compounds of p-block

Carbides, fluorocarbons, tetrasulphurtetranitride, Silicones and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.

SECTION–D

V. Chemistry of Transition Elements **12 Hrs.**

General characteristics of Transition Elements. Properties of the elements of the first transition series, Relative stability of their oxidation state. Coordination number and geometry.

General characteristics of elements of Second and Third Transition Series. Difference in the properties of first transition elements with second and third transition series elements in respect of ionic radii, oxidation states, magnetic behaviour.

Compounds of transition elements: TiO_2, $TiCl_4$, Peroxo compounds of chromium, chromyl chloride test, potassium permanganate, manganese dioxide, ring test for nitrate, Prussian blue and Turnbull's blue, difference between chromous acetate and copper acetate, sodium nitroprusside

Books Suggested:-

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 2nd edition, Pubs: John Wiley and Sons, 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman & Hall Ltd., 1991.
3. Shriver, D.E., Atkins, P.W., Inorganic Chemistry; 4th edition, Pubs: Oxford University Press, 2006.
4. Douglas, B., Medaniel, D., Atenander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994,
5. Porterfeild, W.W., Wesky, A., Inorganic Chemistry; Pubs: Addison-Wesky Publishing Company, 1984.
6. Miessler, G.L., Tarr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004,
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: Tata McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.K., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

SEMESTER–II

CHEMISTRY

(PHYSICAL CHEMISTRY–I)

(THEORY)

Time: 3 Hrs. **Marks: 50**
Credits: 2-0-0 **30 Hrs.**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Note: Log table and scientific calculators are allowed

SECTION–A

I. Gaseous States **7 Hrs.**

Postulates of kinetic theory of gases, deviation from ideal behaviour, Van der Waal's equation of state.
Critical Phenomena: PV isotherms of real gases, continuity of states, the isotherms of Van der Waal's equation, relationship between critical constants and Van der Waals constants, the law of corresponding states, reduced equation of state.
Molecular Velocities: Root mean square, average and most probable velocities. Qualitative discussion of the Maxwell's distribution of molecular velocities, collision number, mean free path and collision diameter. Liquefaction of gases.

SECTION–B

II. Liquid State **8 Hrs.**
Intermolecular forces, surface tension and viscosity of liquids and its determination. Structure of liquids (a qualitative description). Structural differences between solids, liquids and gases.
Liquid crystals: Difference between liquids crystal, solid and liquid. Classification, structure of nematic and cholestric phases. Thermography and seven segment cell.

SECTION–C

III. Colloidal State **7 Hrs.**
Definition of colloids, classification of colloids. Solids in liquids (Sol): kinetic, optical and electrical properties, stability of colloids, protective action, Hardy Schulze law, gold number. Liquids in liquids (emulsions): Types of emulsions, preparation. Emulsifiers. General applications of colloids.

SECTION–D

IV. Solutions, Dilute Solutions and Colligative Properties 8 Hrs.

Ideal and non–ideal solutions, methods of expressing concentrations of solutions, activity and activity coefficient. Dilute solution, colligative properties, Raoult's law, Non-ideal system, azeotropes-HCl-H_2O and ethanol-water system.
Relative lowering of vapour pressure, molecular weight determination. Osmosis, Law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point, Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods for determining various colligative properties. Abnormal molar mass, degree of dissociation and association of solutes.

Books Suggested:-

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Inc, 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems; Pubs: Wiley Eastern Limited, 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
10. University General Chemistry, C.N.R. Rao, Macmillan.

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–II

CHEMISTRY

(PRACTICAL)

Duration: 3½ Hrs. **Marks: 50**
Credits: 0-0-2 **6 Period/Week**

Crystalisation :

Concept of recrystalisation.

1. Phthalic acid from hot water (using fluted filter paper & stem less funnel)
2. Acetanilide from boiling water.
3. Naphthalene from Ethanol
4. Benzoic acid from water

Physical Chemistry

1. To determine the specific reaction rate of hydrolysis of ethyl acetate catalysed by Hydrogen ions at room temperature.
2. To study the effect of acid strength on hydrolysis of an ester.

Viscosity, Surface Tension (Pure Liquids) and thermochemistry

3. To study the viscosity and surface tension of Sucrose glycerine solution in water.
4. To determine the enthalpy of neutralisation of a weak acid/weak base versus strong base/strong acid and determine the enthalpy of ionisation of the weak acid/weak base.
5. To determine the enthalpy of dissolution of Potassium Chlorate/Calcium chloride and calculate the lattice energy of Potassium Chlorate from its enthalpy data using Born Haber cycle.

Practical Examination:

Marks

1)	Crystalisation	10
2)	Physical Experiment	25
3)	Viva–Voce	10
4)	Note Book	05

Books Suggested:-

1. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
2. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
3. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
5. Experiments in Physical Chemistry, R.C. Das and B. Behra, Tata McGraw Hill.
6. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.
7. Advanced Experimental Chemistry, Vol. I, Physical, J.N. Guru and R. Kapoor, S. Chand & Co.
8. Selected Experiments in Physical Chemistry, N.G. Mukherjee, J.N. Ghosh & Sons.
9. Experiments Physical Chemistry, J.C. Ghosh, Bharati Bhavan.

SEMESTER–III

CHEMISTRY

ORGANIC CHEMISTRY–II

(THEORY)

Time: 3 Hrs. **Marks: 50**
Credits: 2-0-0 **30 Hrs.**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. Stereochemistry Organic Compounds **(8 Hrs.)**

Concept of isomerism. Types of isomerism.
Optical isomerism- elements of symmetry, molecular chirality, enantiomers, stereogeniccentre, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogeniccentres, diastereomers, threo and erythrodiasteremers, meso compounds, resolution of enantiomers, inversion, retention and racemization. Relative and absolute configuration, sequence rules, D & L and R & S systems of nomenclature.
Geometric isomerism–determination of configuration of geometric isomers. E & Z system of nomenclature.

SECTION–B

II. Isomerism **(7 Hrs.)**

Conformational isomerism–conformational analysis of ethane and n–butane; conformation of cyclohexane, axial and equatorial bonds, conformation of mono substituted cyclohexane derivatives. Newman projection and Sawhorse formulae, Fischer and flying wedge formulae. Difference between configuration and conformation.

III. Alcohols

Classification and nomenclature. Monohydric alcohols—nomenclature. Acidic nature. Reactions of alcohols, cleavage of O-H bond, C-O bond and dehydration reactions, regioselectivity of dehydration. Dihydric alcohols—nomenclature, methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [$Pb(OAC)_4$] and [HIO_4] and pinacol-pinacolone rearrangement.

SECTION–C

IV. Phenols **(8 Hrs.)**

Nomenclature, structure and bonding, Preparation of phenols, physical properties and acidic character, Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion. Reactions of phenols—electrophilic aromatic substitution, acylation and carboxylation. Mechanisms of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Reimer Tiemann reaction.

V. Preparation of Aldehydes and Ketones

Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides, synthesis of aldehydes and ketones using 1,3-dithianes, synthesis of ketones from nitriles and from carboxylic acids.

SECTION–D

VI. Properties of Aldehydes and Ketones (7 Hrs.)

Physical properties. Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations. Condensation with ammonia and its derivatives. Witting reaction. Mannich reaction. Use of acetals as protecting group. Oxidation of aldehydes, Baeyer-Villiger oxidation of Ketones, Cannizzaro reaction. MPV, Clemmensen, Wolff-Kishner, $LIAIH_4$ and $NaBH_4$ reductions. Halogenation of enolizable ketones.

Coupling reaction using Transition metal/metal complexes (formation of C-C bonds): concept of Homo and Cross coupling reactions with emphasis on Glaser reaction, Ullman reaction, Sonogashira, Suzuki, Hiyama, Negishi and Kumada coupling reactions.

Books Suggested:-

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
2. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
3. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: Wiley Eastern Limited, 1985, Vol. I, II, III.
4. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.
7. University General Chemistry, C.N.R. Rao, Macmillan.

SEMESTER–III

CHEMISTRY

PHYSICAL CHEMISTRY–II

(THEORY)

Time: 3 Hrs. **Marks: 75**
Credits: 3-0-0 **45 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. Thermodynamics-I **11 Hrs.**
Definition of thermodynamic terms: System, surroundings etc. Types of systems, intensive and extensive properties. State and path functions and their differentials. Thermodynamic process. Concept of heat and work.
First Law of Thermodynamics: Statement, definition of internal energy and enthalpy. Heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law, Joule-Thomson coefficient and inversion temperature, Calculation of w,q,dU & dH for the expansion of ideal gases under isothermal and adiabatic conditions for reversible process.

SECTION–B

II. Thermochemistry: **12 Hrs.**
Standard state, types of enthalpy of reactions, standard enthalpy of formation, Hess's Law of heat summation and its applications. Heat of reaction at constant pressure and at constant volume. Enthalpy of neutralization. Bond dissociation energy and its calculation from thermo-chemical data, temperature dependence of enthalpy. Kirchhoff's equation.

III. Thermodynamics-II
Second Law of Thermodynamics: Need for the law, different statements of the 2^{nd}law, Carnot cycle and its efficiency, Carnot theorem. Thermodynamic scale of temperature.
Concept of Entropy : Entropy as a state function, entropy as a function of V & T, entropy as a function of P & T, entropy change in physical change, Clausius inequality, entropy as a criteria of spontaneity and equilibrium. Entropy change in ideal gases and mixing of gases.

SECTION–C

IV. Thermodynamics-III **11 Hrs.**
Third Law of Thermodynamics: Nernst heat theorem, statement and concept of residual entropy, evaluation of absolute entropy from heat capacity data. Gibbs and Helmholtz functions; Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities, A & G as criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change, Variation of G and A with P,V and T.

Equilibrium

V. Chemical Equilibrium

Equilibrium constant and free energy. Thermodynamic derivation of law of mass action. Determination of K_p, K_c, $K_a$and their relationship, Clausius-Clapeyron equation, applications.

SECTION–D

VI. Introduction to Phase Equilibrium 11 Hrs.

Statement and meaning of the terms-phase, component and degree of freedom, derivation of Gibbs phase rule, phase equilibria of one component system-water, CO_2 and S systems. Phase equilibria of two component systems-solid-liquid equilibria, simple eutectic-Bi-Cd, Pb-Ag systems, desilverisation of lead. Solid solutions-compound formation with congruent melting point (Mg-Zn) and incongruent melting point, NaCl-H_2O, $FaCl_3$-H_2O and $CuSO_4$-H_2O system. Freezing mixtures, acetone-dry ice.

Partially miscible liquids Phenol-water, triethylamine-water, Nicotine-water System. Lower and upper consulate temperature, Effect of impurity on consolute temperature, immiscible liquids, steam distillation.

Nernst distribution law-thermodynamic derivation and applications.

Books Suggested:-

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Inc, 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems; Pubs: Wiley Eastern Limited, 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
10. Metz, C.R., Theory and Problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book company, 1989.

SEMESTER–III

CHEMISTRY

(PRACTICAL)

Duration: 3½ Hrs. **Marks: 50**
Credits: 0-0-2 **6 Period/Week**

Quantitative Analysis
Volumetric Analysis

a. Determination of acetic acid in commercial vinegar using NaOH.
b. Determination of alkali content-antacid tablet using HCI.
c. Estimation of calcium content in chalk as calcium oxalate by permanganometry.
d. Estimation of hardness of water by EDTA.
e. Estimation of ferrous and ferric by dichromate method.
f. Estimation of copper using sodiumthiosulphate.

Gravimetric Analysis

Analysis of Cu as CuSCN and Ni as Ni (dimethylgloxime)

Organic Chemistry Laboratory Techniques
Thin Layer Chromatography

Determination of Rf values and identification of organic compounds.
a. Separation of green leaf pigments (spinach leaves may be used).
b. Separation of a mixture of dyes using cyclohexane and ethyl acetate (8.5:1.5).

Practical Examination

1) Volumetry / Gravimetry	25
2) Thin Layer chromatography	10
3) Viva-Voce	10
4) Note Book	05

Books Suggested:-

1. Vogel's Textbook of Quantitative Inorganic Analysis (revised), J. Bassett, R.C. Denney, G.H. Jeffery and J. Mandham, ELBS.
2. Standard Methods of Chemical. Analysis, W.W. Scott: The Technical Press.
3. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
4. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
5. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
6. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
7. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.

B.A./B.Sc. (12+3 System of Education) *(Semester–IV) (CBGS) (Batch 2023-26)*
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SEMESTER–IV

CHEMISTRY

INORGANIC CHEMISTRY–III

(THEORY)

Time: 3 Hrs. **Marks: 75**
Credits: 3-0-0 **45 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. Coordination Compounds **11 Hrs.**

Nomenclature of coordination compounds, Werner's coordination theory and its experimental verification, effective atomic number, polydentate, chelating ligands and chelation, factors affecting stability of chelates, structural and stereoisomerism in coordination compounds with co-ordination number 4 and 6, resolution of racemic mixture, Valence bond theory of transition metal complexes, hybridization and geometry of complexes of Cr ions, Fe and its ions, Co^{3+}, Ni and its ions, Cu^{2+}. Magnetic properties and colour of coordination compounds. Application of coordination compounds.

SECTION–B

II. Non-aqueous Solvents **12 Hrs.**

Physical properties of a solvent and their role in chemical reaction. Types of solvents and their general characteristics, types of reactions in non-aqueous solvents. Characteristics properties and reactions of liquid NH_3 and liquid SO_2 as non-aqueous solvents.

III. Oxidation and Reduction

Oxidation-reduction as electron transfer reaction, oxidation number, redox reactions, Use of redox potential data (electrochemical series), analysis of redox cycle, redox stability in water, brief description and uses of Frost, Latimer and Pourbaix diagrams.

SECTION–C

IV. Chemistry of Lanthanide Elements **11 Hrs.**

Electronic structure, general charaters of lanthanide, oxidation states, magnetic properties, atomic and ionic radii, lanthanide contraction, cause and consequences. Methods of separation of lanthanide from each other, Electronic absorption and uses of lanthanides.

V. Chemistry of Actinides

General features and chemistry of actinides, Electronic and magnetic properties of actinides and their general comparison with the lanthanide elements, similarities between the later actinides and the later lanthanides. Use as nuclear fuel, transuranic elements.

SECTION–D

VI. Bioinorganic Chemistry **11 Hrs.**

Essential and trace elements in biological processes, essential bulk elements and their role in biological processes. Metalloporphyrins with special reference to haemoglobin and myoglobin. Role and function of haemoglobin and myoglobin. Chemistry of transfer of O_2 and CO_2. Biological role of alkali (Na^+& K^+) and alkaline earth metal ions with special reference to Ca^{2+} and Mg^{2+}. Importance of trace elements in biology.

Books Suggested:

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Atkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDaniel, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Porterfield, W.W., Wesley, A., Inorganic Chemistry; Pubs: Addison-Wesley Publishing Company, 1984.
6. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.
12. University General Chemistry, C.N.R. Rao, Macmillan.

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(Faculty of Sciences)

SEMESTER–IV

CHEMISTRY

ORGANIC CHEMISTRY–III

(THEORY)

Time: 3 Hrs. **Marks: 50**
Credits: 2-0-0 **30 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

I. Carboxylic Acids **(8 Hrs.)**
Nomenclature, structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength. Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction. Synthesis of acid chlorides, esters and amides. Reduction of carboxylic acids. Mechanism of decarboxylation.

II. Carboxylic Acids Derivatives
Structure and nomenclature of acid chlorides, esters, amides and acid anhydrides, Relative stability & reactivity of acyl derivatives. Physical properties, interconversion of acid derivatives by nucleophilic acyl substitution. Preparation of carboxylic acid derivatives, chemical reactions. Mechanisms of esterification and hydrolysis (acidic and basic).

SECTION–B

III. Ethers and Epoxides **(8 Hrs.)**
Nomenclature of ethers and methods of their formation, physical properties. Chemical reaction-cleavage and autoxidation, Ziesel's method. Synthesis of epoxides. Acid and base-catalyzed ring opening of epoxides, orientation of epoxide ring opening, reactions of Grignard and organolithium reagents with epoxiedes.

IV. Heterocyclic Compounds
Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine. Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution. Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole.

SECTION–C

V. Organic Compounds of Nitrogen (7 Hrs.)

Preparation of nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes, Mechanisms of nucleophilc substitution in nitroarenes and their reduction in acidic, neutral and alkaline media. Reactivity, Structure and nomenclature of amines, Methods of preparation of amines by Reductive amination of aldehydic and ketonic compounds, Gabriel-phthalimide reaction and Hofmann bromamide reaction. Physical properties. Stereochemistry of amines. separation of a mixture of primary, secondary and tertiary amines. Structural features effecting basicity of amines. Amine salts as phase-transfer catalysts.

SECTION–D

VI. Organometallic Compounds (7 Hrs.)

Organomagnesium Compounds: The Grignard reagents formation, structure and chemical reactions.

Organolithium Compounds: Formation and chemical reactions.

Organozinc and Organo copper Compounds: Nomenclature, structural features, Methods of formation and chemical reactions.

Book Suggested:-

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
2. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
3. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: Wiley Eastern Limited, 1985, Vol. I, II, III.
4. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.
7. Introduction to Organic Chemistry, Sireitwieser, Heathcock and Kosover, Macmilan.

SEMESTER–IV

CHEMISTRY

(PRACTICAL)

Duration: 3½ hrs. **Marks: 50**
Credits: 0-0-2 **6 Period/Week**

Qualitative Analysis
Detection of elements (N, S and halogens)
Detection of functional groups (phenolic, carboxylic, carbonyl, esters, carbohydrates, amines, amides, nitro and anilide) in simple organic compounds. Conformation of compound by melting/boiling point and preparation its derivatives.

Practical Examination

1) Detection of Elements	10
2) Detection of functional group, melting point& derivative preparation	25
3) Viva-Voce	10
4) Note Book	05

Book Suggested:-

1. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
2. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
3. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–V

CHEMISTRY

(INORGANIC CHEMISTRY–IV)

(THEORY)

Time: 3 Hrs. **Marks: 50**
Credits: 2-0-0 **30 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Metal-ligand Bonding in Transition Metal Complexes (8 Hrs)
Limitations of valence bond theory, an elementary idea of crystalfield theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, crystal field stabilization energy for d-orbital electrons in tetrahedral and octahedral complexes, Spectrochemical series, factors affecting the crystalfield parameters, Structural and Thermodynamic effects of inner orbital splittings, Jahn-Teller effects.

SECTION–B

2. Magnetic Properties of Transition Metal Complexes (8 Hrs)
Types of magnetic behaviour, methods of determining magnetic susceptibility by Gouy's and Faraday method. Variation of magnetic susceptibility with temperature, ferromagnetic and antiferromagnetic substances, spin-only formula. L-S coupling, correlation of μ_s and μ_{eff} values, orbital contribution to magnetic moments, application of magnetic moment data for characterization of 3d-metal complexes. Temperature independent paramagnetism, anomalous magnetic moment, paramagnetic and diamagnetic equilibrium.

3. Thermodynamic and Kinetic Aspects of Metal Complexes
A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, Nucleophilic Substitution reactions in square planar complexes: rate law, Trans- effect, Mechanism of nucleophilic substitution in square planar complexes.

SECTION–C

4. Electronic Spectra of Transition Metal Complexes (7 Hrs)
Term symbols and coupling scheme, LS coupling, calculation of ground term state, microstates, Types of electronic transitions, selection rules and relaxations, splitting of Russel-Saunder states in octahedral and tetrahedral, spectrochemical series, Orgel diagram of one electron-one hole system (d^1, d^4, d^6 & d^9) and two electron-two hole system (d^2, d^3, d^7 & d^8) in octahedral and tetrahedral complexes.
Study of electronic transition in Cr^{3+} (octahedral), Co^{2+} (octahedral & tetrahedral), Mn^{2+} (octahedral), Ni^{2+} (octahedral) complexes. Limitation of Orgel diagram.

SECTION–D

5. Organometallic Compounds: (7 Hrs)

Definition, nomenclature and classification of organometallic compounds. σ and π complexes, types of organoligands, EAN rule, bonding in organometals,

Preparation, properties, bonding and applications of alkyllithium and organoaluminium compounds (AlR_3).Metal olefin complexes, bonding in metal-ethylenic complexes, Mechanism of homogeneous hydrogenation reactions of alkene. Metal carbonyls: examples and bonding.

Books Suggested:-

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDamiel, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Porterfield, W.W., Wesley, A., Inorganic Chemistry; Pubs: Addison-Wesley Publishing Company, 1984.
6. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–V

CHEMISTRY

(PHYSICAL CHEMISTRY–III)

(THEORY)

Time: 3 Hrs. **Marks: 75**
Credits: 3-0-0 **45 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Electrochemistry – I **(12 hrs.)**

Conduction in metals and in electrolyte solutions, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of equivalent and specific conductance with dilution, Kohlrausch law, Arrhenius theory of electrolyte dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law, its uses and limitations. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only).
Migration of ions, Transport number: definition and determination by Hittorf method and moving boundary method, factors affecting transport number.
Applications of conductivity measurements: determination of degree of dissociation, determination of Ka of acids, determination of solubility product of sparingly soluble salt, conductometric titrations.

Electrolytic and Galvanic cells-reversible and irreversible cells, conventional representation of electrochemical cells.Standard electrode potential, standard hydrogen electrode, reference electrodes, sign conventions, electrochemical series and its significance. Nernst equation, derivation of cell E.M.F. and single electrode potential. EMF of a cell and its measurements. Calculation of thermodynamic quantities of cell reactions (ΔG,ΔH and K).
Types of reversible electrodes: gas- metal ion, metal ion, metal insoluble salt-anion and redox electrodes. Electrode reactions. EMF of reversible electrodes.

SECTION–B

2. Electrochemistry – II **(11 Hrs.)**

Polarization, over potential, hydrogen overvoltage and its application. Concept of activities and activity coefficient.
Concentration cells with and without transference, liquid junction potential, application of concentration cells, valency of ions, solubility product and pH determination, potentiometric titrations.

3. Nuclear Chemistry

Introduction: Radioactivity, Nuclear Structure, Size of Nucleus, Mass Defects and Binding Energy, Nuclear Stability, Nuclear Forces, Nuclear Spin and Moments of Nuclei, Nuclear Models, Nuclear Decay Processes, The Laws of Radioactive Decay, Soddy-Fajans Group Displacement Law, Rate of Nuclear Decay and Half Life Time (Kinetics of Radioactive Decay), Induced Nuclear Reactions, Types of Nuclear Processes, High Energy Nuclear Reactions, Nuclear Reaction Cross-Section, Artificial radioactivity, Detection and Measurement of Radioactivity, Nuclear Fission, Nuclear Fusion, Applications of Radioactivity.

SECTION–C

4. Spectroscopy (11 Hrs.)

Introduction: Electromagnetic radiation, regions of the spectrum, basic features of different spectrometers, statement of the Born-Oppenheimer approximation, degrees of freedom.

5. Rotational Spectrum

Diatomic molecules. Energy levels of a rigid rotor (semi classical principles), selection rules, spectral intensity and position of lines, distribution using population distribution (Maxwell-Boltzmann distribution) determination of bond length, qualitative description of non-rigid rotor, isotope effect.

SECTION–D

6. Vibrational Spectrum (11 Hrs.)

Infrared spectrum: Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, intensity, determination of force constant and qualitative relation of force constant and bond energies, effect of an harmonic motion and isotope on the spectrum, vibration-rotation spectra, P, Q and R branches, structural information from IR spectra, idea of vibrational frequencies of different functional groups.

Raman Spectrum: Concept of polarizability, pure rotational and pure vibrational Raman spectra of diatomic molecules, selection rules, O, Q and S branches. Comparison with IR spectra.

7. Electronic Spectrum

Concept of potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules and Franck-Condon principle. Qualitative description of σ, π, and n M.O., their energy levels and the respective transitions.

Books Suggested:-

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
3. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
4. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd, 2002.
5. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
6. Metz, C.R., Theory and problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book Company, 1989.
7. W. Kemp, "Organic Spectroscopy".
8. C.N. Banwell "Fundamentals of Molecular Spectroscopy".
9. D.L. Pavia, G.M. Lampan and G. S. Kriz, Introduction to Spectroscopy" Hartcourt College Publishers, 2001

SEMESTER–V

CHEMISTRY

(PRACTICAL)

Duration: 3½ Hrs. **Marks: 50**
Credits: 0-0-2 **6 Period/week**

(I) Synthesis and Analysis

(a) Preparation of Sodium trioxalatoferrate (III)
(b) Preparation of Ni-DMG Complex
(c) Preparation of Copper tetrammine complex
(d) Preparation of cis-bisoxalatodiaquachromate (III) ion

(II) Physical Chemistry

(a) Conductometric Titrations

(i) Determine the end point of the following titrations by the conductometric methods.
Strong acid-Strong base
Weak acid-Strong base
(ii) Determine the composition of a mixture of acetic acid and the hydrochloric acid by conductometric titration.

(b) Molecular Weight Determination of acetanilide, napthalane, using camphor as solvent **(Rast's methods).**

(c) pH metric titration :

(i) strong acid with strong base,
(ii) weak acid with strong base and determination of dissociation constant of a weak acid.

(d) Phase Equilibria to determine the distribution coefficient of iodine between CCI_4 and water.

(e) **Refractometry**

(i) Determination of refractive index of a liquid by Abbe refractometer, and hence the specific and molar refraction.
(ii) To determine the composition of unknown mixture of two liquids by refractive index measurements.

Practical Examination

1) Inorganic Synthesis	15
2) Physical experiment	20
3) Viva- Voce	10
4) Note Book	05

Books Suggested:-

1. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
2. Handbook of preparative Inorganic Chemistry, Vol. I & II, Brauer, Academic Press.
3. Inorganic Synthesis, McGraw Hill.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
5. Experiments in Physical Chemistry, R.C. Das and B. Behra, Tata McGraw Hill.
6. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.
7. Advanced Experimental Chemistry, Vol. I, Physical, J.N. Guru and R. Kapoor, S. Chand & Co.
8. Selected Experiments in Physical Chemistry, N.G. Mukherjee, J.N. Ghosh & Sons.
9. Experiments Physical Chemistry, J.C. Ghosh, Bharati Bhavan.

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(Faculty of Sciences)

SEMESTER–VI

CHEMISTRY

ORGANIC CHEMISTRY– IV

(THEORY)

Time: 3 Hrs. **Marks: 75**
Credits: 3-0-0 **45 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Spectroscopy (12 hrs.)
Nuclear Magnetic Resonance (NMR) spectroscopy.
Magnetic properties of nuclei, Principle of NMR, Proton Magnetic Resonance (1HNMR) spectroscopy, equivalent and non-equivalent protons, nuclear shielding and deshielding, choosing solvent, chemical shift and factors affecting chemical shift, spin-spin splitting, areas and peak intensity of signals, Application of PMR, interpretation of PMR spectra of simple organic molecules such as ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromoethane, ethyl acetate, toluene and acetophenone.

2. Electromagnetic Spectrum: Absorption Spectroscopy-I
Infrared (IR) Absorption spectroscopy – Introduction and principle of IR spectroscopy, Hooke's law, Fundamental vibrations, Selection rules, intensity and IR bands, factors affecting vibration frequencies, characteristic absorption of various function groups, interpretation of IR spectra of simple organic compounds.

SECTION–B

3. Electromagnetic Spectrum: Absorption Spectroscopy-II (11 Hrs.)
Ultraviolet (U.V.) absorption spectroscopy introduction- Beer-Lambert law, molar absorptivity, types of electronic transitions, Concept of chromophores and auxochrome, Bathochrome, hypsochrome, hyperchrome, hypochromic shifts, solvent effect on electronic transition, UV spectra of conjugated compounds, Woodward-Fieser Rule, application of UV spectroscopy.

4. Problems based on spectroscopy
Problems pertaining to the structure elucidation of simple organic compounds using UV, IR and PMR spectroscopic techniques.

5. Organic Synthesis *via* Enolates
Acidity of α-hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.
Alkylation of 1,3-dithianes. Alkylation and acylation of enamines.

SECTION–C

6. Carbohydrates (11 Hrs.)

Classification and nomenclature. Monosaccharides, mechanism of osazone formation, interconversion of glucose and fructose, chain lengthening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threodiastereomers. Conversion of glucose into mannose. Formation of glycosides, ethers and esters. Determination of ring size of monosaccharides. Cyclic structure of D(+)-glucose. Mechanism of mutarotation.

Structures of ribose and deoxyribose

An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

SECTION-D

7. Amino Acids, Peptides, Proteins and Nucleic Acids (11 Hrs.)

Classification, structure and stereochemistry of amino acids. Acid-base behaviour, isoelectric point and electrophoresis. Preparation and reactions of α-amino acids.

Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid-phase peptide synthesis. Structures of peptides and proteins. Levels of protein structure. Protein denaturation/renaturation.

Nucleic acids: Introduction. Constituents of nucleic acids. Ribonucleosides and ribonucleotides. The double helical structure of DNA.

Books Suggested :

1. Spectrometric Identification of Organic Compoundsby Robert M. Silverstein, Francis X. Webster , David J. Kiemle, David L. Bryce ;**Publisher:** Wiley, 1981
2. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
3. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
4. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: New Age International, 1985, Vols. I, II, III.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Solomons, T.W., Fundamentals of Organic Chemistry; 5th edition, Pubs: John Wiley & Sons, 1997.
7. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.
8. D.L. Pavia, G.M. Lampan and G. S. Kriz, Introduction to Spectroscopy" Hartcourt College Publishers, 2001

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(Faculty of Sciences)

SEMESTER-VI

CHEMISTRY

PHYSICAL CHEMISTRY–IV

(THEORY)

Time: 3 Hrs. **Marks: 50**
Credits: 2-0-0 **30 Hrs**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Quantum Mechanics-I **(7 hrs.)**
Black-body radiation, Planck's radiation law, Photoelectric effect, heat capacity of solids, Bohr's model of hydrogen atom (no derivation) and its defects, Compton effect.
de Broglie hypothesis, Heisenberg's uncertainty principle, Sinusoidal wave equation, Hamiltonian operator, Schrodinger wave equation and its importance, physical interpretation of the wave function, postulates of quantum mechanics, particle in a one dimensional box, quantization of energy levels, extension to two and three dimensional boxes, degeneracy.

SECTION–B

2. Quantum Mechanics-II **(8 hrs.)**
Simple harmonic oscillator model of vibrational motion, setting up Schrodinger equation and discussion of solution and wave functions. Rigid rotator model of rotation of diatomic molecules transformation to spherical polar coordinates spherical harmonics and their discussion. Qualitative investigation H-atom, setting up Schrodinger equation, radial and angular part, radial distribution functions of 1s, 2s, 2p, 3s, 3p and 3d.

SECTION–C

3. Solid State **(7 Hrs.)**
Definition of space lattice and unit cell, Law of crystallography- (i) Law of constancy of interfacial angles, (ii) Law of rationality of indices, (iii) Symmetry elements in crystals.
X-ray diffraction by crystals. Derivation of Bragg’s Law in Reciprocal space. Determination of crystal structure of NaCl, KCl by use of Powder method; Laue’s method.

SECTION-D

4. Photochemistry (8 Hrs.)

Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry: Grothus–Drapper law, Stark–Einstein law, Jablonski diagram depicting various processes occurring in the excited state, qualitative description of flourescence, phosphorescence, non–radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions–energy transfer processes (simple examples).

Books Suggested :

1. Atkins, P., Paula, J.de, Atkins, Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Company Inc., 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan of India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; I edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems, Pubs: Wiley Eastern Ltd., 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs : Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W.J., Basic Physical Chemistry; Pubs : Prentice Hall of India Pvt. Ltd., 1983.
10. Metz, C.R., Theory and Problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book Company, 1989.
11. Banwell, C.N., McCash, E.M., Fundamentals of Molecular Spectroscopy; 4th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 1999.
12. Atkins, P. Friedman, R., Molecular Quantum Mechanics; 4th edition Pubs: Oxford University Press, 2007.
13. Levine, I.N., Quantum Chemistry; 5th edition, Pubs: Prentice Hall International Inc., 2000.
14. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
15. Inorganic Chemistry, A.G. Sharpe, ELBS.

SEMESTER-VI

CHEMISTRY

(PRACTICAL)

Duration 3½ Hrs. **M. Marks: 50**
Credits: 0-0-2 **6 Period/week**

(I) Organic Chemistry Laboratory Techniques

(a) Column Chromatography

a) Separation of o & p nitrophenol
b) Separation of Leaf pigments from Spinach leaves
c) Separation of o & p nitro aniline
d) Separation of dyes.

(b) Synthesis of Organic Compounds

a) Preparation of p-nitroacetanilide
b) Preparation of p-bromoacetanilide
c) Green Chemistry Experiment: Preparation of benzilic acid from Benzyl-using green approach.
d) Preparation of Methyl Orange, Methyl Red
e) Nitration of Salicyclic Acid by green approach (using ceric ammonium nitrate)

Practical Examination

1)	Column Chromatography	18
2)	Organic Synthesis	17
3)	Viva-Voce	10
4)	Note Book	05

Books suggested:

1. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
2. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
3. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

English (Compulsory)

(Credit Based Grading System)

Examinations: 2023-26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

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B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–I

ENC101: ENGLISH (COMPULSORY)

Time: 3 Hours

Credits: 4-0-0
(6 periods per week)
Total Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Texts Prescribed:-

- *Tales of Life* (Guru Nanak Dev University, Amritsar) Stories at Sr. No. 1, 2, 3, 5 and 6
- *Prose for Young Learners* (Guru Nanak Dev University, Amritsar) Essays at Sr. No. 1, 2, 3, 5 and 6
- *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

The syllabus is divided in four sections as mentioned below.

SECTION–A

English Grammar in Use, 4th Edition by Raymond Murphy, CUP (Units: 1-37)

SECTION–B

Paragraph Writing and *English Grammar in Use* (Units: 38-48)

SECTION–C

Tales of Life (Guru Nanak Dev University, Amritsar): Stories at Sr. No. 1, 2, 3, 5 and 6

SECTION–D

Prose for Young Learners: Essays at Sr. No. 1, 2, 3, 5 and 6

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–II

ENC151: ENGLISH (COMPULSORY)

Time: 3 Hours

Credits: 4-0-0
(6 periods per week)
Total Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Texts Prescribed:
1. *Tales of Life* (Guru Nanak Dev University, Amritsar) Stories at Sr. No. 7, 9, 10, 11, 12
2. *Prose for Young Learners* (Guru Nanak Dev University, Amritsar) Essays at Sr. No. 7, 8, 9, 10, 11
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP (Units: 49-97)

The syllabus is divided in four sections as mentioned below.

SECTION–A

English Grammar in Use, 4th Edition by Raymond Murphy, CUP (Units: 49-81)

SECTION–B

Personal letter Writing and *English Grammar in Use* (Units: 82-97)

SECTION–C

Tales of Life (Guru Nanak Dev University, Amritsar) 7, 9, 10, 11, 12

SECTION–D

Prose for Young Learners: Essays at Sr. No. 7, 8, 9, 10 and 11

B.A./B.Sc. (12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–III

ENC201: ENGLISH (COMPULSORY)

Time: 3 Hours

Credits: 4-0-0
(6 periods per week)
Total Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Important Note: The textbook *Making Connections* (3rd edition) is significantly different from its 2nd edition. The third edition (by Kenneth J Pakenham, Jo EcEntire, Jessica Williams) is to be followed for this course.

Texts Prescribed:
1. *Making Connections* by Kenneth J. Pakenham, Jo McEntire, Jessica Williams, 3rd Edition. CUP.
2. *Moments in Time: An Anthology of Poems*, GNDU, Amritsar.
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

Texts Suggested:
Oxford Guide to Effective Writing and Speaking by John Seely
A Course in Grammar and Compostion by Geetha Nagaraj, Foundation Books, 2006

Syllabus is divided into four sections as mentioned below:

SECTION–A
English Grammar in Use (Fourth Edition) by Raymond Murphy, CUP: Units 98-130

SECTION–B
Essay writing and *English Grammar in Use*: Units 131-145

SECTION–C
Moments in Time: Poems at Sr. No. 1-6

SECTION–D
Making Connections by Kenneth J. Pakenham, 3rd Edn. CUP: Unit-I (Global Health) and Unit-II (Multicultural Societies)

SEMESTER–IV

ENC251: ENGLISH (COMPULSORY)

Time: 3 Hours

Credits: 4-0-0
(6 periods per week)
Total Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Important Note: The textbook *Making Connections* (3rd edition) is significantly different from its 2nd edition. The third edition (by Kenneth J Pakenham, Jo EcEntire, Jessica Williams) is to be followed for this course.

Texts Prescribed:-

1. *Making Connections* by Kenneth J. Pakenham, Jo McEntire, Jessica Williams, 3rd Edition. CUP.
2. *Moments in Time: An Anthology of Poems*, GNDU, Amritsar.
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP.

Syllabus is divided into four sections as mentioned below:

SECTION–A

English Grammar in Use (Fourth Edition) by Raymond Murphy, CUP: Revision of Units 26-37, 42-48, 92- 97, 113-120.

SECTION–B

Moments in Time: Poems at Sr. No. 7-12

SECTION–C

Making Connections by Kenneth J. Pakenham, 3rd Edn. CUP: SECTION–III (Aspects of Language) and SECTION–IV (Sustaining Planet Earth)

SECTION–D

Essay type question based on the SECTION–"Beyond the reading" from the text, *Making Connections*

SEMESTER–V
ENC301: ENGLISH COMPULSORY

Time: 3 Hours

Credits: 4-0-0
(6 periods per week)
Total Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Texts Prescribed:
1. *All My Sons* by Arthur Miller
2. *Poems of Nature and Culture*, Guru Nanak Dev University, Amritsar

Texts Suggested (for Section D):
Oxford Guide to Effective Writing and Speaking by John Seely
A Course in Grammar and Compostion by Geetha Nagaraj, Foundation Books, 2006

The syllabus is divided into four sections as mentioned below:

Section - A

All My Sons by Arthur Miller: the whole text.

Section - B

The following poems from *Poems of Nature and Culture*:
William Wordsworth: "The World is Too Much with Us"
Gordon Lord Byron: "She Walks in Beauty"
P.B. Shelly: "Ozymandias"
Alfred Lord Tennyson: "In Memoriam"
Robert Browning: "Meeting at Night"
Mathew Arnold: "Dover Beach"
W.B. Yeats: "Words"
Wilfred Owen: "Strange Meeting"

Section - C

The following poems from *Poems of Nature and Culture*:
Robert Graves: "The Portrait"
W.H. Auden: "The Unknown Citizen"
Dylan Thomas: "Do not Go Gentle into That Good Night"
Ted Hughes: "The Thought-Fox"
Sylvia Plath: "Mirror"
Seamus Heaney: "Honeymoon Flight"
Rabindranath Tagore: "False Religion"
Nissim Ezekiel: "Night of Scorpion"

Section - D

Formal Letter and Application Writing, Resume Writing Business Writing and Report Writing.

SEMESTER–VI

ENC351: ENGLISH (COMPULSORY)

Time: 3 Hours

Credits: 4-0-0
(6 periods per week)
Total Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Texts Prescribed:

1. *The Guide* by R.K. Narayan
2. *Glimpses of Theatre,* Guru Nanak Dev University Amritsar.
   i) "The Will"
   ii) "Villa for Sale"
   iii) "Progress"
   iv) "The Monkey's Paw"
   iv) "Sorry Wrong Number"
   v) "No eggs!No eggs!"

SECTION–A

Study of the novel, *The Guide* by R.K. Narayan.

SECTION–B

One- act plays, and **"The Will"** and **"Villa for Sale"** from *Glimpses of Theatre***,** Guru Nanak Dev University Amritsar.

SECTION–C

One- act plays, **"Progress"** and **"The Monkey's Paw"** from *Glimpses of Theatre,* Guru Nanak Dev University Amritsar and **Essay writing**.

SECTION–D

One-act plays, **"Sorry Wrong Number"** and **"No eggs! No eggs!"** from *Glimpses of Theatre,* Guru Nanak Dev University Amritsar.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

English (Elective)

(Credit Based Grading System)

Examinations: 2023-26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

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B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–I

ENGLISH (ELECTIVE)

Time: 3 Hours **Credits: 4-1-0**
(6 periods per week +2 periods for composition)
Max. Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Prescribed Books:
- *A Doll's House* by Henrik Ibsen (preferably Penguin Classics Edition)
- *Spots of Time* G.N.D.U. Amritsar
- *Glossary of Literary Terms* by M.H. Abrams, Wadsworth CENGAGE Learning Publishers, 8th Edition, 2008.
- *Better Pronunciation of English* by J.D.O'Connor

The syllabus is divided in four sections as mentioned below:

SECTION–A

- Literary Terms: Ballad, Character, Comedy, Conceit, Epic, Irony, Plot, Paradox
- Transcription of Words: comb, crèche, dose, gauge, ghost, castle, gross, mauve, sure sample, wolf, wool, arch, off, of, door, stair, what, cough, clerk, tooth, yak, yawn, sing, tongue.

SECTION–B

Spots of Time: Poems at serial No. 1,2,3,5,7,8,9

SECTION–C

Spots of Time: Poems at serial No. 10-12, 14, 19, 20

SECTION–D

A Doll's House by Henrik Ibsen

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–II

ENGLISH (ELECTIVE)

Time: 3 Hours **Credits: 4-1-0**
(6 periods per week + 2 periods for composition)
Max. Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Books Prescribed:
1. *Untouchable* by Mulk Raj Anand.
2. *The School for Scandal* by Sheridan
3. *Glossary of Literary Terms* by M.H. Abrams, Wadsworth CENGAGE Learning Publishers, 8th Edn., 2008.
4. *Better Pronunciation of English* by J.D.O'Connor

Course Contents:
1. *Untouchable* -- Complete Text
2. *The School for Scandal*—Complete Text
3. Literary Terms: Burlesque, Elegy, Hyperbole, Metaphor, Poetic Justice, Point of view, Dramatic Monologue, Tragicomedy
4. Transcription of Words: garage, data, menu, hello, cadet, exit, rebel (n), rebel (v), conduct (n), conduct (v), consume, idiot, depot, madam, handsome, petrol, perfect (adj.), perfect (v), vehicle, healthy, wealthy, police, sandwich, career, talent

The syllabus is divided in four sections as mentioned below :

SECTION–A

(a) Literary Terms: Burlesque, Elegy, Hyperbole, Metaphor, Poetic Justice, Point of view, Dramatic Monologue, Tragicomedy

(b) Transcription of Words: garage, data, menu, hello, cadet, exit, rebel (n), rebel (v), conduct (n), conduct (v), consume, idiot, depot, madam, handsome, petrol, perfect (adj.), perfect (v), vehicle, healthy, wealthy, police, sandwich, career, talent.

SECTION–B

Acts I, II, III of the play *The School for Scandal*

SECTION–C

Acts IV, V of the play *The School for Scandal*

SECTION–D

Complete text of the novel *Untouchable*

B.A./B.Sc. (12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–III

ENGLISH (ELECTIVE)

Time: 3 Hours **Credits: 4-1-0**
(6 periods per week + 2 periods for composition)
Max. Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Books Prescribed:
1. *Animal Farm* by George Orwell
2. *Fresh Showers*, G.N.D.U. Amritsar
3. *New Directions* (Part 1-3)
4. *Better Pronunciation of English* by J.D. O'Connor

Course Contents:
The syllabus is divided in four sections as mentioned below:

SECTION–A

Animal Farm—Complete Text

SECTION–B

Fresh Showers

The following poems are to be studied:

(i) "Belinda's Toilet," (ii) "London," (iii) "The Tables Turned," (iv) "Man and Nature," (v) "The Cloud," (vi) "Voices," (vii) "Futility," (viii) "Day Break," (ix) "Self's the Man," (x) "Spinster," (xi) "Leave This Chanting," (xii) "The Poet," (xiii) "Guru".

SECTION–C

New Directions-Part 1,2

SECTION–D

1. *New Directions* Part-3
2. **Transcription of Words**: agony, antonym, capable, committee, decorum, aeroplane, calendar, privacy, absolute, academy, academic, advertisement, adversity, allopathic, mathematics, automobile, biography, biology, competition, competitive, certificate, certify, democracy, capacity, magnificent, photography, photograph, photographic, vindictive, celebrity

B.A./B.Sc. (12+3 System of Education) *(Semester–IV) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–IV

ENGLISH (ELECTIVE)

Time: 3 Hours **Credits: 4-1-0**
(6 periods per week + 2 periods for composition)
Max. Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Books Prescribed:
1. *New Directions* (Part 4-5)
2. *Modern Prose*, G.N.D.U. Amritsar
3. *Dispelling Silence: Short Stories*
4. Transcription of Words

Course Contents:
The syllabus is divided in four units as mentioned below:

SECTION–A

New Directions (Part 4-5)

SECTION–B

Modern Prose–Essays at serial No. 3, 4, 5, 7, 11, 12

SECTION-C

Dispelling Silence – Stories at serial No. 1, 2, 6, 7, 8

SECTION–D

Dispelling Silence – Stories at serial No. 10, 11, 12
Words for Transcription: accommodation, appreciation, capability, civilization, examination, pronunciation, university, terminology, utility, nationality, objectionable, rationality, testimonial, vocabulary, superintendent, satisfactory, rehabilitate, consultation, dictionary, veterinary, espionage, singularity, tranquility, interference, pavilion, superiority.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–V

ENGLISH (ELECTIVE)

MODERN ENGLISH DRAMA

Time: 3 Hours **Credits: 4-1-0**
(6 periods per week + 2 periods for composition)
Max. Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Texts Prescribed:
1. *A Raisin in the Sun* by Lorraine Hansberry
2. *Arms and the Man* by G. B. Shaw
3. *Background to the Study of English literature* by B. Prasad, Macmillian India Limited (Chapters I and II from section- I ; chapters I, II, and III from section- II; Chapters I, II, and III from Section III)

The syllabus is divided into four sections as mentioned below:

SECTION–A

Background to the Study of English literature by B. Prasad, Macmillian India Limited (Chapters I and II from Section -I; Chapters I and II from section- II)

SECTION–B

Background to the Study of English literature by B. Prasad, Macmillian India Limited (Chapter III from section- II; Chapters I, II, and III from section- III)

SECTION–C

A Raisin in the Sun by Lorraine Hansberry – Complete text

SECTION–D

Arms and the Man by G. B. Shaw – Complete text

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Languages)

SEMESTER–VI

ENGLISH (ELECTIVE)

MODERN ENGLISH NOVEL

Time: 3 Hours **Credits: 4-1-0**
(6 periods per week + 2 periods for composition)
Max. Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Prescribed Books:
1. *Train to Pakistan* by Khushwant Singh
2. *The Power and the Glory* by Graham Greene
3. *Background to the Study of English literature* by B. Prasad, Macmillian India Limited (Chapters III and IV from section- I ; chapters IV, V, and VI from section- II; Chapters IV, V, and VI from Section III)

The syllabus is divided into four sections as mentioned below:

SECTION–A

Background to the Study of English literature by B. Prasad, Macmillian India Limited (Chapters III and IV from Section -I; chapters IV and V from section- II)

SECTION–B

Background to the Study of English literature by B. Prasad, Macmillian India Limited (Chapter VI from section- II ; chapters IV, V, and VI from section- III)

SECTION–C

Train to Pakistan by Khushwant Singh – Complete text

SECTION–D

The Power and the Glory by Graham Greene – Complete text

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

History

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Arts & Social Sciences)

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B.A./B.Sc. (12+3 System of Education) (Semester-I) (CBGS) *(Batch 2023-26)*

(Faculty of Arts & Social Sciences)

SEMESTER–I
HISTORY
HISTORY OF INDIA UPTO C. 1000

Credits : 4-0-0

Time: 3 Hours **Max. Marks: 100**

Theory-6 periods/Week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION – A

1. **Sources:** Meaning of the term 'ancient', Literary sources Vedic literature, Epics and Puranans, Buddhist and Jain texts, Sangam literature; Accounts of Indians and foreigners; Archeological Sources; Coins, Inscriptions and Monuments.

2. **The Indus Civilization:** Origin & Extent; Harappa, Mohenjodaro, Rakhigarhi, Kalibanga, Dholavira and Lothal; Political organization; Town–planning and architecture; Agriculture, technology; Trade contacts with the outside world; Religion; Script, Seals and Figurines, Causes of disintegration.

SECTION – B

3. **The Indo Aryans:** Original home; Geographical area known to Vedic texts; Social Institutions: Family, Varna and the Caste system, Religious ideas and rituals; Economy; Political Organization—Changes in the later Vedic period; Emergence of the republics and kingdoms; Growth of towns.

4. **Jainism and Buddhism:** Social and political conditions; Doctrines of Jainism and sectarian development; Teachings of Gautam Buddha; The Sangha organization; Spread of Buddhism; its decline, Legacy of Buddhism and Jainism.

SECTION – C

5. **The Age of the Mauryas :** Establishment of the Mauryan Empire; Expansion of the empire; the Kalinga War; Polity and administration; Contacts with neighbouring states; Ashoka's Dhamma; Decline of the Mauryan empire.

6. **The Kushanas :** Kanishka and his successors; Ghandhara Art; Literature. **The Gupta Age :** Establishment of the Gupta Empire; its expansion under Samundra Gupta and Chandra Gupta–II; Administration; Revenue system; Trade and Commerce; Art and architecture; The Huna invasions and the decline of the Gupta Empire.

SECTION – D

7. **The Age of the Vardhanas:** Establishment of Vardhana Kingdom; Harsha's campaigns and political relations; Sources of revenue; Patronage of religion, Literature and education.

8. **The Cholas:** Local administration of the Cholas; Art and Literature; Economy and Trade

Suggested Reading :

1. Basham, A.L., Wonder that was India, Fontana, London, 1977.
2. Jha, D.N., *Early India: Concise History of India*, Manohar Publication, 2010
3. Sharma, R.S., *India's Ancient Past,* Oxford University Press, New Delhi, 2005
4. Thapar, Romila, *Early India: From Origins to AD 1300*, Penguin publication, New Delhi, 2003.

B.A./B.Sc.(12+3 System of Education) (Semester-II) (CBGS) *(Batch 2023-26)*

(Faculty of Arts & Social Sciences)

SEMESTER–II

HISTORY

HISTORY OF INDIA (C. 1000–A.D.1707)

Credits : 4-0-0

Time: 3 Hours **Max. Marks: 100**

Theory-6 periods/Week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. **The Conquests of the Ghaznavis and Ghauris:** Invasions of Mahmud Ghaznavi; their effects, Battles of Muhammad Ghauri, Causes of the success of the Turks.

2. **Establishment of the Sultanate of Delhi:** Political and military development under Qutabuddin Aibak, Iltutmish and his successors; Consolidation of the Sultanate under Balban and the Mongol invasions.

SECTION–B

3. **The Khiljis:** Emergence of the Khiljis under Jalaluddin and Alauddin Khilji; Alauddin's conquests, the future Mongol invasions; Treatment of the nobility; Land revenue reforms; Economic reforms. **The Tughlaqs:** Muhammad–bin–Tughlaq; His experiments; Causes of disaffection and revolts; Feroze Tughlaq; Administrative and economic policies and their effects; Taimur’s Invasions.

4. **The Vijaynagar Kingdom:** Establishment and expansion; Polity, Economy and Administration; Art and Architecture.

SECTION–C

5. **Mughal–Afghan Struggle (1526–1556):** Advent of the Mughals under Babur; Battle of Panipat and its aftermath; Battle of Kanwaha, Battles of Humayun; Expansion of the Afghan power under Sher Shah Suri, Administrative reforms; Return of Humayun.

6. **Re–establishment and expansion of the Mughal Empire under Akbar:** Conquests, extent of empire, Religious policy, Rajput policy. **Expansion and Decline under Akbar's Successors** : Jahangir and Mewar; North–western campaigns; Extension of influence over the Deccan; Conquest of Ahmednagar by Shah Jahan; Rise of Aurangzeb to power.

SECTION–D

7. **The Mughal Government, Administration and Culture:** Position of the King: Central and local administration; Land revenue system; Mansabdari; Jagirdari; State policy towards agriculture, Trade and Commerce, Literature, Art and Architecture and Culture.

8. **The establishment of Maratha Power:** The rise of Shivaji, Maratha administration, Land revenue system; Chauth and Sardeshmukhi.

Suggested Reading

1. Chandra, Satish, *History of Medieval India,* Orient Black Swan, Hyderabad, 2007
2. Chandra, Satish , *Medieval India*, Vol. I & II, Har- Anand Publication Pvt. Ltd. New Delhi,2010
3. Mehta, J.L. *Medieval Indian Society and Culture (Advanced Study in the History of Medieval India*, Vol. III), Sterling Publication, New Delhi, 2009
4. Rizivi, S.A.A., *The Wonder That Was India-II* (1200-1700), Picador India.
5. Mahajan, V.D., *Medieval India*, S. Chand and Publication, New Delhi, 2010

B.A./B.Sc.(12+3 System of Education) (Semester-III) (CBGS) *(Batch 2023-26)*

(Faculty of Arts & Social Sciences)

SEMESTER–III

HISTORY

HISTORY OF INDIA (AD 1707-1947)

Credits : 4-0-0

Time: 3 Hours **Max. Marks: 100**

Theory-6 periods/Week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. **Foundation of British Rule:** Advent of the British; Battles of Plassey and Buxar, Clive and Warren Hastings; Subsidiary Alliance Policy, Doctrine of Lapse.

2. **The Uprising of 1857:** Causes, Spread of the Uprisings, Nature and aftermath.

SECTION–B

3. **Economic Changes:** Agriculture, British commercial policies and the impact on the trade balance; Destruction of indigenous industries; the growth of modern industry; The drain theory.

4. **Growth of Education and Political Organization:** Western Education; Rise of the middle classes; **Socio Religious Movements :** Brahmo Samaj, Arya Samaj, Rama Krishana Mission, Prarthna Samaj, Theosophical Society, Aligarh Movement.

SECTION–C

5. **Early Political Associations and Emergence of Revolutionary Movement:** Early Political Association and Indian National Congress; Swadeshi Movement, Partition of Bengal and its impact; Revolutionary Terrorism in Bengal, Maharashtra and the Punjab, Impact on the National Movement.

6. **The Phase of Non-Co-operation :** Emergence of Gandhi; The Jallianwala Bagh Massacre and its impact; Khilafat agitation; the Non-cooperation Movement; Withdrawal and impact; the Swarajists; The Simon Commission; **The Phase of Civil Disobedience :** The programme and the course of the Civil Disobedience Movement, the Round Table Conferences; Communal Award; Poona-pact; Withdrawal of Civil Disobedience Movement

SECTION–D

7. **Constitutional Development:** The Minto-Morley Reforms of 1909, The Act of 1919 and Dyarchy; Government of India Act, 1935 and Provincial Autonomy.

8. **Towards Partition and Independence:** Growth of communal politics; Lahore resolution, Cripps proposals; Quit India Movement; the INA Trials; Cabinet Mission and towards Independence.

Suggested Reading:

1. Bipan Chandra, *History of Modern India*, Orient Longman, Hydrabad, 2009.
2. Sarkar, Sumit, *Modern India (1885-1947),* Orient Longman, New Delhi, 1983.
3. Bose, Sugata and Ayesha Jalal, *Modern South Asia: History, Culture, Political Economy*, OUP, New Delhi, 2004.
4. Bandyopadhyay, Sekhar, *From Plassey to Partition: A History of Modern India*, Orient Longman, Hydreabad, 2004.
5. Datta, Kali Kinkar, *A Social History of Modern India*, Macmillan, New Delhi, 1975.
6. Bannerjee, A.C., *The New History of Modern India (1707-1947),* K.P.Bagchi, Calcutta, 1983.
7. Burton, Stein, A History of India, OUP, New Delhi, 2003.
8. Desai, A.R., *Social Background of Indian Nationalism*, Popular Prakashan, Bombay, 1966.
9. Misra, B.B., *The Indian Middle Classes: Their Growth in Modern Times,* OUP, London,1978
10. Jones, Kenneth, *Socio-Religious Movements in India*, CUP, Cambridge, New Delhi, 1989.
11. Chopra, P.N. et al, *A Social, Cultural and Economic History of India: Modern India,* Vol. III, Macmillan, New Delhi, 1974.
12. Chaudhuri, M.K., (ed.), *Trends of Socio-Economic Change in India (1871-1961),* IIAS, Simla, 1969.
13. Choudhary, Sukhbir, *Peasants' and Workers' Movements in India, 1905-1929*, PPH, New Delhi, 1971.
14. Sakhar Bandyopadhyay, Nationalist Movement in India A reader, Oxford University Press, 2008.

B.A./B.Sc. (12+3 System of Education) (Semester-IV) (CBGS) *(Batch 2023-26)*

(Faculty of Arts & Social Sciences)

SEMESTER–IV

HISTORY

HISTORY OF THE PUNJAB (AD 1469-1799)

Credits : 4-0-0

Time: 3 Hours **Max. Marks: 100**

Theory-6 periods/Week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. **Sources:** Geographical and Physical features, Historical literature in Persian and Punjabi; Religious literature; Administrative records and documents; European travellers' accounts, Non-literary sources: numismatics and paintings; **Socio-Religious condition of the Punjab around 1500 A.D. :** The Sunnis; the Shias; the Sufis, the Brahmans; the Jogis; the Vaishnava bhakti and the saints.

2. **Foundation of Sikh Panth : Guru Nanak Dev and his Teachings** : Early life, Conception of God, Importance of the Guru, Insistance on right conduct and earnest profession; Institution of community kitchen (Langer) and Congregational worship (sangat), Succession to Guruship.

SECTION–B

3. **Development of the Sikh Panth: Guru Angad Dev to Guru Arjan Dev**: Increasing number of sangats: Sikh ceremonies; the Manji and Masand system, The founding of the sacred places, The Hari mandir. Compilation of the Adi Granth.

4. **Transformation of the Sikh Panth: Guru Hargobind to Guru Tegh Bahadur:** Martyrdom of Guru Arjan Dev and Guru Hargobind's response; Armed conflict with the state; Circumstances leading to the accession and martyrdom of Guru Tegh Bahadur.

SECTION–C

5. **Creation of Khalsa:** Meaning; Circumstances leading to the creation of the Khalsa (1699); New Social order; Conflict with the Hill chiefs and Mughal administrators; Legacy.

6. **Banda Bahadur**: Early life of Banda Bahadur and his meeting with Guru Gobind Singh; His political activities upto the conquest of Sarhind; Establishment of an independent rule; Imperial campaign against Banda Bahdur.

SECTION–D

7. **Political Struggle (1716-48):** Position of the Sikhs; Repression and conciliation by the Mughal governors, Abdus Samad Khan and Zakaria Khan (1716-1745), Ghallughara, Sikh-Afghan struggle (1752-65); Occupation of Lahore, the striking of the coin; Causes of Sikh success against the Mughals and Afghans; **Leading Sardars and Territories:** Nawab Kapur Singh; Jassa Singh Ahluwalia; Bhangis; Jassa Singh Ramgarhia; Charat Singh and Mahan Singh; Jai Singh Kanhaya; Ala Singh.

8. **Political Organisations of the Sikhs in the 18th Century:** Rakhi; Dal Khalsa; Gurmata, Misl. Emergence of new rulers and their military resources; Administrative arrangements; Land revenue; Administrative of Justice.

Suggested Reading:

1. Grewal J.S., *From Guru Nanak to Maharaja Ranjit Singh*, G.N.D. University, Amritsar, 1982.
2. _____, *The New Cambridge History of India: The Sikhs of the Punjab*, CUP, New Delhi, 1990.
3. _____, *Guru Nanak in History*, Panjab University, Chandigarh, 1969.
4. Khushwant Singh**,** *A History of the Sikhs, Vol. I (1469-1839),* OUP, Delhi, 1977.
5. McLeod, W.H., *Guru Nanak and the Sikh Religion*, OUP, Delhi, 1968.
6. Teja Singh and Ganda Singh, *A Short History of the Sikhs* Vol. *(1469-1765),* Patiala 1983
7. Banerjee, I.B. *Evolution of the Khalsa, 2 Vols*., A. Mukherjee & Co., Calcutta, 1979.
8. Grewal, J.S. and S. S. Bal, *Guru Gobind Singh*, Panjab University, Chandigarh, 1987.
9. _____, and Indu Banga, *The Khalsa Over 300 Years*, Manohar, New Delhi, 1999.
10. Harbans Singh (ed), *The Encyclopedia of Sikhism,* 4 Vols., Punjabi University, Patiala 1992.
11. McLeod, W.H. *Evolution of the Sikh Community*, OUP, Delhi, 1970.
12. _____, *Historical Dictionary of Sikhism*, OUP, New Delhi, 2002.

SEMESTER–V
HISTORY
History of the World (C 1500-1956 AD)

Credits : 4-0-0
Time: 3 Hours **Max. Marks: 100**
Theory-6 periods/Week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. **Emergence of the Modern World:** Renaissance and Reformation; Causes, effects of Renaissance in Europe; Martin Luther's Protestantism.

2. **French Revolution**: Causes; National Assembly; National Convention, Nepoleon's rise to Power, Continental System, Downfall of Nepoleon, Vienna Settlement.

SECTION–B

3. **Nationalism in Europe:** Rise of Imperialism; Industrial Revolution; Unification of Italy and Germany.

4. **The World War-I**: Causes and Impact of the war, Treaty of Versailles; League of Nations.

SECTION–C

5. **Russian Revolution:** February Revolution, October Revolution; New Economic Policy.

6. **Rise of China and Japan**: The Revolution of 1911; Rise of Communism in China; the Revolution of 1949; Opening up of Japan; Meiji restoration and the Modernization of Japan.

SECTION–D

7. **Rise of USA as World Power:** Entry in the First World War; Great Economic Depression of 1929; New Deal of Roosevelt.

8. **Towards World War II and its Aftermath:** Fascism in Italy; Nazism in Germany; Causes and Impact of the World War II; the UNO; the Cold War.

Suggested Reading:

1. Lowe, Norman, *Mastering Modern World History*, Macmillan, New Delhi, 1997
2. Chakarbarti, Ranjan, *A History of the Modern World*, Ratan Sagar Private Limited. 2012
3. Rao, B.V. , *History of Modern World*, Sterling Publication Pvt. Ltd. New Delhi, 2012

B.A./B.Sc. (12+3 System of Education) (Semester-VI) (CBGS) *(Batch 2023-26)*

(Faculty of Arts & Social Sciences)

SEMESTER–VI

HISTORY

History of the Punjab (1799-1966)

Credits : 4-0-0

Time: 3 Hours **Max. Marks: 100**

Theory-6 periods/Week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. **The Establishment and Expansion of Ranjit Singh's Kingdom :** Political condition of the Punjab in the 1790s; Conquests of the Sikh principalities; Subjugation of the Satlej- Jamuna Divide and British intervention; Subjugation of the Hill principalities; Annexation of Afghan dependencies; Policy towards the defeated rulers; Extent of the Kingdom in 1839.

2. **Administrative Organization of the Kingdom of Lahore:** Central, Provincial and local administration; Land revenue system. Jagirdari system, Dharmarth grants; Judicial administration; Military organization; state policy towards agriculture, Manufacture and trade.

SECTION–B

3. **Annexation and After :** First Anglo-Sikh War; Second Anglo-Sikh War; British Administration 1845-1856; Agricultural development.

4. **Socio-Religious Reform Movements in the late– Nineteenth Century :** Christian evangelicals; the Arya Samaj; The Nirankaris and the Namdharis; the Singh Sabhas and the Ahmadiyas.

SECTION–C

5. **Early Nationalist Activities**: The Ghadar movement; Rowlatt Satyagrahs and the Jallianwala Bagh; Non-Cooperation Movement; Hindustan Socialist Republican Army and Naujawan Bharat Sabha; Civil Disobedience and Quit India Movement.

6. **Gurdwara Reforms and the Akalis :** Causes of the movement for reform; Central Sikh League; SGPC and the Shiromani Akali Dal ; Major Morchas ; Gurdwara legislation.

SECTION–D

7. **Towards Partition:** Communal politics; Sikander–Jinnah Pact; Lahore Resolution of the Muslims League; Cabinet Mission Plan; Mountbatten Plan and Partition.

8. **The Punjab after Independence**: Re-organisation and rehabilitation: Demand for Punjabi Suba; The Re-organisation Act of 1966. How to incorporate PEPSU 1956?

Suggested Reading:

1. Grewal, J.S., *The Sikhs of the Punjab*, CUP, Cambridge, 1990.
2. Kirpal Singh, *Partition of Punjab,* Punjabi University, Patiala, 1972.
3. Khushwant Singh, *A History of the Sikhs*, Vol. I & II Oxford Publication, 2004.
4. Kushwant Singh, *Ranjit Singh: Maharaja of the Punjab*, Chatar Singh Jeewan Singh Publication, Amritsar, 2012

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Mathematics

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
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B.A./B.Sc. (12+3 System of Education) (Semester - I) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER - I

MATHEMATICS

PAPER–I : ALGEBRA

Time: 3 Hours **L-T-P: 4-0-0**

Marks: 100

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Linear independence of row and column vectors. Row rank, Column rank of a matrix, Equivalence of column and row ranks, Nullity of matrix, Applications of matrices to a system of linear (both homogeneous and non–homogeneous) equations. Theorems on consistency of a system of linear equations.

SECTION–B

Eigen values, Eigen vectors, minimal and the characteristic equation of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix. Quadratic Forms, quadratic form as a product of matrices. The set of quadratic forms over a field.

SECTION–C

Congruence of quadratic forms and matrices. Congruent transformations of matrices. Elementary congruent transformations. Congruent reduction of a symmetric matrix. Matrix Congruence of skew–symmetric matrices. Reduction in the real field. Classification of real quadratic forms in n variables. Definite, semi–definite and indefinite real quadratic forms. Characteristic properties of definite, semi–definite and indefinite forms.

SECTION–D

Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations and symmetric function of roots, Descarte's rule of signs, Newton's Method of divisors, Solution of cubic equations by Cardan method, Solution of biquadratic equations by Descarte's and Ferrari's Methods.

Books Recommended:-

1. K.B. Dutta: Matrix and Linear Algebra, Prentice Hall of India Pvt. Ltd., New Delhi (2002).
2. H.S. Hall and S.R. Knight: Higher Algebra, H.M. Publications, 1994.
3. Chandrika Parsad: Text book on Algebra and Theory of Equations, Pothishala Pvt. Ltd., Allahabad.
4. S.L. Loney: Plane Trigonometry Part–II, Macmillan and Company, London.
5. Shanti Narayan and P.K. Mittal: Text Book of Matrices.

B.A./B.Sc. (12+3 System of Education) (Semester -I) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER - I

MATHEMATICS

PAPER–II: CALCULUS AND TRIGONOMETRY

Time: 3 Hours **L-T-P: 3-0-0**

Marks: 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Real number system and its properties, lub, glb of sets of real numbers, limit of a function, Basic properties of limits, Continuous functions and classification of discontinuities, Uniform continuity.

SECTION–B

Differentiation of hyperbolic functions, Successive differentiation, Leibnitz theorem, Taylor's and Maclaurin's theorem with various forms of remainders, Indeterminate forms.

SECTION–C

De–Moivre's Theorem and its applications, circular and hyperbolic functions and their inverses.

SECTION–D

Exponential and Logarithmic function of a complex variable, Expansion of trigonometric functions, Gregory's series, Summation of series.

Books Recommended:-

1. N. Piskunov: Differential and Integral Calculus, Peace Publishers, Moscow.
2. Tom M. Apostol: Calculus: An Indian Adaptation, Wiley India, 2023
3. Erwin Kreyszig: Advanced Engineering Mathematics, John Wiley and Sons, 1999.

B.A./B.Sc. (12+3 System of Education) (Semester - II) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER -II

MATHEMATICS

PAPER–I: CALCULUS AND DIFFERENTIAL EQUATIONS

Time: 3 Hours **L-T-P: 4-0-0**

Marks: 100

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Asymptotes, Tests for concavity and convexity, Points of inflexion, Multiple Points, Curvature, Tracing of Curves (Cartesian and Parametric coordinates only).

SECTION–B

Integration of hyperbolic functions. Reduction formulae. Definite integrals. Fundamental theorem of integral calculus. Quadrature, rectification.

SECTION–C

Exact differential equations. First order and higher degree equations solvable for x,y,p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories.

SECTION–D

Linear differential equations with constant and variable coefficients. Variation of Parameters method, reduction method, series solutions of differential equations. Power series method, Bessel and Legendre equations (only series solution).

Books Recommended:-

1. D.A. Murray: Introductory Course in Differential Equations. Orient Longman (India), 1967.
2. G.F. Simmons: Differential Equations, Tata McGraw Hill, 1972.
3. E.A. Codington: An Introduction to Ordinary Differential Equations, Prentice Hall of India, 1961.
4. Tom M. Apostol: Calculus: An Indian Adaptation, Wiley India, 2023
5. Erwin Kreyszig: Advanced Engineering Mathematics, John Wiley and Sons, 1999. 52

B.A./B.Sc. (12+3 System of Education) (Semester - II) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER - II

MATHEMATICS

PAPER–II: CALCULUS

Time: 3 Hours **L-T-P: 3-0-0**

Marks: 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Limit and Continuity of functions of two variables, Partial differentiation, Change of variables, Partial derivatives and differentiability of real–valued functions of two variables, Schwartz's and Young's Theorem, Statements of Inverse and implicit function theorems and applications.

SECTION–B

Euler's theorem on homogeneous functions, Taylor's theorem for functions of two variables, Jacobians, Envelopes. Evolutes, Maxima, Minima and saddle points of functions of two variables.

SECTION–C

Lagrange's undetermined multiplier method, Double and Triple Integrals, Change of variables, Applications to evaluation of areas, Volumes, Surfaces of solid of revolution, Change of order of integration in double integrals.

SECTION–D

Application to evaluation of area, volume, surface of solids of revolutions.

Books Recommended:-

1. Narayan, S. and P.K. Mittal: Integral Calculus. Sultan Chand & Sons.
2. Narayan S. and P.K. Mittal: Differential Calculus, Sultan Chand & Sons.
3. Tom M. Apostol: Calculus: An Indian Adaptation, Wiley India, 2023

B.A./B.Sc. (12+3 System of Education) (Semester - III) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER-III

MATHEMATICS

PAPER–I: ANALYSIS

Time: 3 Hours **L-T-P: 4-0-0**

Marks: 100

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion.

SECTION–B

Series of non-negative terms. Comparison tests. Cauchy's integral test. Ratio test. Cauchy's root test. Logarithmic test. Cauchy condensation test, Gauss test, Alternating series. Leibnitz's test. Absolute and conditional convergence.

SECTION–C

Partitions, Upper and lower sums. Upper and lower integrals, Riemann integrability. Conditions of existence of Riemann integrability of continuous functions and of monotone functions. Algebra of integrable functions.

SECTION–D

Improper integrals and statements of their conditions of existence. Test of the convergence of improper integral, Beta and Gamma functions.

Books Recommended:

1. Malik, S.C. and Savita Arora: Mathematical Analysis, Wiley Eastern Ltd. (1991).
2. Apostal, T.M.: Mathematical Analysis, Addison Wesley Series in Mathematics (1974).
3. Narayan, S. and P.K. Mittal: Integral Calculus, Sultan Chand & Sons.
4. Tom M. Apostol: Calculus: An Indian Adaptation, Wiley India, 2023

SEMESTER-III

MATHEMATICS

PAPER–II: ANALYTICAL GEOMETRY

Time: 3 Hours **L-T-P: 3-0-0**
Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Transformation of axes, shifting of origin, Rotation of axes in two dimension and three dimension, The invariants, Joint equation of pair of straight lines, equations of bisectors

SECTION–B

Parabola and its properties. Tangents and normals, Pole and polar, pair of tangents at a point, Chord of contact, equation of the chord in terms of mid point and diameter of conic.

SECTION–C

Ellipse and hyperbola with their properties, Tangents and normals, Pole and polar, pair of tangents at a point, Chord of contact, Identifications of curves represented by second degree equation (including pair of lines).

SECTION–D

Intersection of three planes, condition for three planes to intersect in a point or along a line or to form a prism, Sphere: Section of a sphere by a plane, spheres of a given circle. Intersection of a line and a sphere. Tangent line, tangent plane, power of a point w.r.t. a shpere, radical planes.

Books Recommended

1. Gorakh Prasad and H.C. Gupta: Text Book on Coordinate Geometry.
2. S.L. Loney: The Elements of Coordinate Geometry, Macmillan and Company, London.
3. Narayan, S.: Analytical Solid Geometry, Sultan Chand & Sons (2005).
4. Kreyszig, E.: Advanced Engineering Mathematics.
5. Thomos, G.B. and Finney, R.L.: Calculus and Analytic Geometry.

SEMESTER-IV

MATHEMATICS

PAPER–I: STATICS AND VECTOR CALCULUS

Time: 3 Hours **L-T-P: 4-0-0**
Marks: 100

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Composition and resolution of forces (parallelogram law, triangle law, polygon law, Lami's Theorem, (λ-μ) theorem, Resultant of a number of coplanar forces, parallel forces. Moments, Varignon's theorem of moments, Couples, Resultant of two Coplanar Couples, Equilibrium of two coplanar couples, Resultant of a force and a couple. Equilibrium of coplanar forces.

SECTION–B

Friction, Laws of friction, Equilibrium of a particle on a rough plane. Centre of Gravity: Centre of gravity of a rod, triangular lamina, solid hemisphere, hollow hemisphere, solid cone and hollow cone.

SECTION–C

Vector differentiation, Gradient, divergence and curl operators, line integrals, Vector identity, Vector integration.

SECTION–D

Theorems of Gauss, Green, Stokes and problems based on these.

Books Recommended:

1. S.L. Loney: Statics, Macmillan and Company, London.
2. R.S. Verma: A Text Book on Statics, Optical Pvt. Ltd., Allahabad.
3. Spiegal, M.R.: Introduction to Vector Calculus and Tensor.
4. Spiegal, M.R.: Vector Analysis.

SEMESTER-IV

MATHEMATICS

PAPER–II: SOLID GEOMETRY

Time: 3 Hours **L-T-P: 3-0-0**
Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Cylinder as surface generated by a line moving parallel to a fixed line and through fixed curve. Different kinds of cylinders such as right circular, elliptic, hyperbolic and parabolic in standard forms

SECTION–B

Cone with a vertex at the origin as the graph of homogeneous equation of second degree in *x, y, z.* Cone as a surface generated by a line passing through a fixed curve and fixed point outside the plane of the curve, right circular and elliptic cones.

SECTION–C

Equation of surface of revolution obtained by rotating the curve $f(x, y) = 0$ about the z-axis in the form of $f(x^2 + y^2, z) = 0$. Equation of ellipsoid, hyperboloid and paraboloid in standard forms.

SECTION–D

Surfaces represented by general equation of 2^{nd} degree S = 0. Tangent lines, tangent planes and Normal plane.

Books Recommended:

1. Narayan, S.: Analytical Solid Geometry, Sultan Chand & Sons (2005).
2. Kreyszig, E.: Advanced Engineering Mathematics.

B.A./B.Sc. (12+3 System of Education) (Semester - V) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER-V

MATHEMATICS

PAPER–I: DYNAMICS

Time: 3 Hours **L-T-P: 4-0-0**

Marks: 100

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Rectilinear motion in a starlight line with uniform acceleration, Newton's laws of motion, Motion of two particles connected by a string.

SECTION–B

Motion along a smooth inclined plane, Variable acceleration, Simple Harmonic Motion.

SECTION–C

Curvilinear motion of particle in a plane, Definition of velocity and acceleration, projectiles, Oscillations: Free Vibrations, Simple Pendulum, Conical Pendulum.

SECTION–D

Work, Power and Energy: Kinetic and Potential energy, Conservative forces. Theorem of conservation of energy. Work done against gravity.

Books Recommended:

1. S.R.Gupta: A text book of Dynamics
2. F. Chorlton: Dynamics.
3. S.L. Loney: An Elementary Treatise on the Dynamics of a Practice and of Rigid Bodies, Cambridge University Press, 1956.

B.A./B.Sc. (12+3 System of Education) (Semester - V) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER-V

MATHEMATICS

PAPER–II: NUMBER THEORY

Time: 3 Hours **L-T-P: 3-0-0**

Marks: 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Preliminaries: Proof by induction, Binomial Theorem. Divisibility in Integers: Basic Definitions and Properties, The division Algorithm, GCD, The Euclidean Algorithm, LCM, Existence and determination of solution to the linear Diophantine equation ax +by = c, primes-definition & Properties, the fundamental theorem of Arithmetic.

SECTION–B

Number-theoretic functions: the greatest integer function, Euler's Phi-function, Sum & number of divisors functions, *möbius* function & the Inversion formula.

SECTION–C

Congrunces-definition and properties, linear congruences, existence & solution of the linear congruence, $ax \equiv b(mcd\ m)$, Complete and reduces residue systems, Chinese remainder theorem.

SECTION–D

Fermat's theorem, Euler's theorem, Pseudoprimes Wilson;s theorem. Application to Cryptpgraphy-Factorization methods due to Fermat, RSA.

Books Recommended:

1. David M. Burton: Elementary Number Theory, Seventh Edition, McGraw-Hill, Indian Reprint, 2012.
2. Ivan Niven, Herbert S, Zuckerman & Hugh L. Montgomery : An Introduction to the theory of Numbers, Wiley, fifth edition, 1991.
3. Tom M. Apostol, An introduction to Analystical Number Theory, Springer-Verlag, UTM.

B.A./B.Sc. (12+3 System of Education) (Semester -VI) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER-VI

MATHEMATICS

PAPER–I: LINEAR ALGEBRA

Time: 3 Hours **L-T-P: 4-0-0**

Marks: 100

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Definition of groups, rings and fields with examples. Definition of a vector space, subspaces with examples. Direct sum of subspaces. Linear span, Linear dependence, Linear independence of vectors. Linear combination of vectors.

SECTION–B

Basis of a vector space, Finitely generated vector spaces. Existence theorem for basis. Invariance of the number of elements of the basis set. Dimension of sum of two subspaces. Quotient space and its dimension.

SECTION–C

Linear transformation. Algebra of linear transformation. Rank- Nullity theorem, Isomorphism and Isomorphic spaces.

SECTION–D

Matrix of a linear transformation. Changes of basis, Linear operator.

Books Recommended:

1. K.Hoffman & R. Kunze : Linear Algebra, 2nd Edition, Prentice Hall, New Jersey, 1971.
2. V. Krishnamurthy, V. P. Mainra and J.L. Arora: An Introduction to Linear Algebra, East West Press, 1976.
3. Shanti Narayan & P.K. Mittal: A Text Book of Matrices, 10th Edition (2002), S.Chand & Co.

B.A./B.Sc. (12+3 System of Education) (Semester -VI) (CBGS) *(Batch 2023-26)*

(Faculty of Sciences)

SEMESTER-VI

MATHEMATICS

PAPER–II: NUMERICAL ANALYSIS

Time: 3 Hours **L-T-P: 3-0-0**

Marks: 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Note : The non-programmable scientific calculator is allowed in the examination.

SECTION–A

Error generation, propagation, error estimation and error bounds, Solution of non-linear equations, Bisection method, Iteration method, Newton's Method, Generalized Newton's Method, Method of false position, Muller's method, Rate of convergence of these methods.

Solution of linear system of equation; Direct method, Gauss elimination variant (Gauss Jordan and Crout reduction), Triangular Method, Iterative Method, Jacobi's Method, Gauss Seidel Method.

SECTION–B

Finite Differences: Forward, Backward, Central, Divided differences, shift operator, relationship between the operators and detection of errors by use of difference operator.

SECTION–C

Interpolation with divided difference, Newton's formula, Lagrangian Method, Finite difference interpolation, Gauss formula, Stirling formula, Bessel's formula, Error Estimation, Extrapolation. Numerical differentiation, Method based on interpolation. Numerical Integration, Trapezoidal rule, Simpson's rule, Weddle rule, Romberg Integration.

SECTION–D

Gaussian integration method, Gaussian legendre integration. Double numerical integration. Numerical solution of ordinary differential equations, Initial value problem, Taylor's method, Euler's methods, Picard's method, Milne's Method, Runge-Kutta Method. Predictor- Corrector's Method.

Books Recommended:

1. S.S. Sastry: Introductory Methods of Numerical Analysis, 2003 (3rd Edition), Prentice Hall of India.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Music (Vocal)

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

INDEX

B.A./B.Sc.(12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–I

MUSIC (VOCAL)

(THEORY)

Time: 3 Hours

L T P
Credits 2 0 0
Marks: 50

Teaching 3 Periods per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Detailed Study of Tanpura and Sahayak Naad.
2. Definition and explanation of the following Musical Terms: Sangeet, Swar, Naad, Saptak, Jati.

SECTION–B

3. Contribution and Life Sketches of the following musicians: Tansen and Yamla Jatt.
4. Elementary knowledge of Wedding Song of Punjabi culture with special reference to Ghorian and Suhag.

SECTION–C

5. Description and notation of the following Ragas: Bilawal and Bhopali.
6. Description and notation of the following Taals : Teentaal, Dadra.

SECTION–D

7. Contribution of Sri Guru Nanak Dev Ji towards Indian Music.
8. Definition and explanation of the following terms in the context of Gurmat Sangeet: Raga, Mohalla, Rahao, Rababi.

B.A./B.Sc.(12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–I

MUSIC (VOCAL)

(PRACTICAL)

Practical Exam : 20 Min. for each student **L T P**

Credits 0 0 2

Marks: 50

Periods/Week: 9

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Bilawal and Bhopali.
2. One Sargam Geet from prescribed Ragas.
3. Ability to play five alankars on the Harmonium based on the BilawalThata.
4. Ability to recite Teental and Dadra showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
5. Recitation of Ghorian.
6. Knowledge of the following non – detailed Ragas: Alahaiya Bilawal, Deshkaar

Books Recommended:-

1. Rag Parichya Part – I to IV by Shri Harish Chnder Srivastava.
2. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
3. Sangeet Vishard Sangeet Karayalya, Hathras.
4. Sangeet Shastra Darpan Shanti Govardhan.
5. Sangeet Sudarshini, Dr. Narendra kaur, Kanishka Publishers, New Delhi.
6. Music for Life: Social and Psychological Objectives, Dr. Narendra Kaur, Kanishka Publishers, New Delhi.
7. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
8. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
9. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
10. Sikh Dharam Ate Bhakti Sangeet, Dr. Jitender Kaur.
11. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

B.A./B.Sc.(12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–II

MUSIC (VOCAL)

(THEORY)

Time: 3 Hours

	L	T	P
Credits	**2**	**0**	**0**

Marks: 50

Teaching 3 periods per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Historical Development of Indian Music in Vedic Period
2. Definition and explanation of the following Musical Terms: Raga, Thata, Vadi, Samvadi, Meend.

SECTION–B

3. Salient features of Time Theory in Indian Music.
4. Contribution and Life Sketches of the following musicians: Pt.Vishnu Narayan Bhathkhande, Kuldip Manak.

SECTION–C

5. Description and notation of the following Ragas: Kalyan, Asavari, Kafi.
6. Description and notation of the following Taals: Kehrva, Ektal

SECTION–D

7. Contribution of Bhai Mardana towards Music.
8. Definition and explanation of the following terms in the context of Gurmat Sangeet Ashtpadi, Ank, Kirtaniya, Pada.

SEMESTER–II

MUSIC (VOCAL)

(PRACTICAL)

Practical Exam : 20 Min. for each student

	L	T	P
Credits	**0**	**0**	**2**

Marks: 50

Periods/Week: 9

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Kalyan, Asavari, Kafi.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. Elementary Knowledge of the following non–detailed Ragas: Jaunpuri, Bhimplasi, Shudh Kalyan.
4. One Shabad from prescribed Ragas.
5. Ability to play five alankars on the Harmonium based on the Thatas of prescribed Ragas in the course.
6. Ability to recite Kehrva and Ektal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Recitation of Suhag.
8. Ability to play thekas of Keharva & Dadra on Tabla.

Books Recommended:-

1. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
2. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
3. Sangeet Sudarshini, Dr. Narendra kaur, Kanishka Publishers, New Delhi.
4. Sangeet Vishard Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan Shanti Govardhan.
6. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
7. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
8. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
9. Sikh Dharam Ate Bhakti Sangeet, Dr. Jitender Kaur.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
11. Indian Music: A glance at its various Perspectives, Dr. Narendra kaur, Kanishka Publishers, New Delhi.

B.A./B.Sc.(12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–III

MUSIC (VOCAL)

(THEORY)

Time: 3 Hours

L T P
Credits 2 0 0
Marks: 50

Teaching 3 periods per week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as Base Instrument in Vocal Music (Practical).
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
5. Candidate can take Tabla subject along with Music Vocal or Music Inst.

SECTION–A

1. Historical Development of Indian Music during 14^{th} to 17^{th} century with special reference to Akbar Period.
2. Definition and explanation of the following Musical Terms: Alap, BolAlap, BolBaant, Upaj.

SECTION–B

3. Method of tuning your instrument (Tanpura).
4. Contribution and Life Sketches of the following musicians: Pt. Vishnu Digamber Pluskar and Prof. Kartar Singh

SECTION–C

5. Description and notation of the following Ragas: Bhimplasi, Des and Vrindavani Sarang.
6. Description and notation of the following Talas: Paurital and Sooltal.

SECTION–D

7. Contribution of Sri Guru Arjan Dev Ji towards Music.
8. Salient features of Kirtan Chaunkis in special context of Gurmat Sangeet.

Books Recommended:

1. Bharatiya Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
4. Sangeet Vishard, Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan, Shanti Govardhan.
6. Hamare Sangeet Rattan, Sangeet Karyalaya, Hathras.
7. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
8. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
9. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
11. ‘The great Artists of Punjab’ by Balwant Gargi, GNDU Publications, Amritsar
12. ‘Punjab de Parsidh Ragi Rababi’ by Balbir Singh Kanwal, Singh Brothers, Amritsar.

SEMESTER–III
MUSIC (VOCAL)
(PRACTICAL)

Practical Exam : 20 Min. for each student

	L	T	P
Credits	**0**	**0**	**2**

Marks: 50

Periods/Week: 9

Ability to play five alankars on the Harmonium based on the KafiThata.

1. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
2. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Bhimplasi, Des and Vrindavani Sarang.
3. One Lakshan Geet in Prescribed Raga.
4. One Dhrupad with Dugan Laykari in any of the prescribed Ragas.
5. Ability to recite Ektal and Sooltal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
6. Brief Knowledge of following Ragas: Dhnashri, Sorath and Madhmaad Sarang.
7. Ability to play theka of Rupak Tala on tabla.
8. Ability to play Dhun of any Folk Song of Punjab on Harmonium/any instrument.

Books Recommended:

1. Bharatiya Sangeet KaItihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
4. Sangeet Vishard, Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan, Shanti Govardhan.
6. Sangeet ke Mool Tatva part 2, Dr Narendra kaur, Kanishka Publishers, New Delhi.
7. Hamare Sangeet Rattan, Sangeet Karyalaya, Hathras.
8. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
9. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
10. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
11. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

SEMESTER–IV
MUSIC (VOCAL)
(THEORY)

Time: 3 Hours

	L	T	P
Credits	**2**	**0**	**0**

Marks: 50

Teaching 3 periods per week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
5. Candidate can take Tabla subject along with Music Vocal or Music Inst.

SECTION–A

1. Detailed knowledge of Khayal Styles of Singing.
2. Short notes on the following terms:
    a. Sargam Geet
    b. Lakshan Geet
    c. Saadra
    d. Raag-Malika

SECTION–B

3. Formation of 484 Ragas from a Thata by Pt. Vyankata Mukhi in Chaturdandi Prakashika.
4. Contribution and Life Sketches of the following musicians: S. Sohan Singh and Gurmit Bawa.
5. Gayakke Gun evam dosh.

SECTION–C

6. Description and notation of the following Ragas: Malkauns, Bihaag and Bhairavi.
7. Description and notation of the following Talas: Ada Chautal and Jhaptal.

SECTION–D

8. Contribution of Sri Guru Gobind Singh Ji towards Music.
9. Detailed knowledge of Folk singing styles used in Gurmat Sangeet.

SEMESTER–IV

MUSIC (VOCAL)

(PRACTICAL)

Practical Exam : 20 Min. for each student

	L	T	P
Credits	**0**	**0**	**2**

Marks: 50

Periods/Week: 9

1. Ability to play five alankars on the Harmonium based on the Kafi Thata.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Malkauns, Bihaag and Bhairavi.
4. One Trana in any Prescribed Raga with proper singing style.
5. Ability to sing National Anthem with Harmonium.
6. Ability to recite Jhap-Taal and Ada Chautal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Brief Knowledge of Non Detailed Ragas: Chandrakauns and Tilang and Bilas Khani Todi
8. Ability to play theka of Teen Taal on tabla.
9. One Cinematic song on Harmonium/any instrument.

Books Recommended:

1. Bharatiya Sangeet KaItihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
4. Sangeet Vishard, Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan, Shanti Govardhan.
6. Sangeet ke Mool Tatva part 2, Dr Narendra kaur, Kanishka Publishers, New Delhi.
7. Hamare Sangeet Rattan, Sangeet Karyalaya, Hathras.
8. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
9. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
10. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
11. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–V
MUSIC (VOCAL)
(THEORY)

Time: 3 Hours **L T P**

Credits 2 0 0

Marks: 50

Teaching 3 periods per week

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Note: There should not be more than fifteen students in one group of Practical class.

Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
5. Candidate can take Tabla subject along with Music Vocal or Music Inst.

SECTION-A

1. Historical Development of Indian Music during Modern Period.
2. Development of Indian Notation System and its merits and demerits.
3. Short notes on the following :
    a. Thumri
    b. Tappa
    c. Chaturang

SECTION-B

4. Detailed knowledge of folk music of Punjab.
5. Life and Contribution of the following Musicians:
    a. Dalip Chandra Bedi
    b. SurinderKaur

SECTION-C

6. Detailed description and notation of the following Ragas:
    a. Darbari
    b. Bhairav
    c. Kedar
7. Description and Notation of the following Talas:
    a. Deepchandi
    b. Tilwara

SECTION-D

8. Classical Gayan Shaillies used in Gurmat Sangeet.
9. Contribution of Sant Sarwan Singh Gandharav towards Indian Music.

Books Recommended:-

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I, II, III, IV, V.
9. Tantri Nada Pt. Lalmani Mishra.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–V

MUSIC (VOCAL)

(PRACTICAL)

Practical Exam : 20 Min. for each student

	L	T	P
Credits	**0**	**0**	**2**

Marks: 50

Periods/Week: 9

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Darbari, Bhairav Kedar.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. Brief Knowledge of Non Detailed Ragas: Adana, Ramkali and Kamod.
4. One Ghazal.
5. One Chaturang or Trivat in any Raga of Your Choice.
6. Ability to recite Deepchandi and Tilwara showing Khali Tali with hand motion in Ekgun, Dugun Layakaris.
7. Ability to play theka of Jhap Taal on Tabla.
8. Ability to play five alankars on the Harmonium based on the Asawari Thata.

Books Recommended:

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I, II, III, IV, V.
9. Tantri Nada Pt. Lalmani Mishra.

B.A./B.Sc.(12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–VI

MUSIC (VOCAL)

(THEORY)

Time: 3 Hours

	L	T	P
Credits	**2**	**0**	**0**

Marks: 50

Teaching 3 periods per week

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Note:

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as a base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
5. Candidate can take Tabla subject along with Music Vocal or Music Inst.

SECTION-A

1. Importance of Globalization in Indian music in Modern Period.
2. Method of formation of 72 Thatas of Dakhshini Music System of Pt. Vyankat Mukhi.
3. Detailed knowledge of Dhrupad & Dhammar Styles of Singing.

SECTION-B

4. Detailed knowledge of following Gharanas of Khayal Gayaki.
   a. Gwalior
   b. Kirana
   c. Agra
   d. Patiala
   e. Delhi

5. Essay writings on the following Topics:
   a. Bade Gulam Ali Khan
   b. Narinder Biba

SECTION-C

6. Detailed description and notations :-
   a. Jaunpuri
   b. ShudhKalyan
   c. Bhageshwari

7. Detailed study of the following Talas:
   a. Jhumra
   b. Dhammar

SECTION-D

8. Contribution of Dr. Gurnam Singh towards Music.
9. Difference between Gurmat Sangeet and Hindustani Sangeet

Books Recommended:

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I, II, III, IV, V.
9. Tantri Nada Pt. Lalmani Mishar.
10. Punjab de Parsidh Ragi Rababi by Balbir Singh Kanwal, Singh Brothers, Amritsar
11. 'Amrit Kirtan' Prof. Tara Singh Vishesh Ank, Jan-Reb. 1990, Amrit Kirtan Trust, Chandigarh.

B.A./B.Sc.(12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Visual Arts & Performing Arts)

SEMESTER–VI

MUSIC (VOCAL)

(PRACTICAL)

Practical Exam : 20 Min. for each student

	L	T	P
Credits	**0**	**0**	**2**

Marks: 50

Periods/Week: 9

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Jaunpuri, Shudh Kalyan, Bhageshwari.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Dhammar in any of the prescribed Ragas.
4. One Shabad/Bhajan in any of the Ragas prescribed in the course.
5. Brief Knowledge of Non Detailed Ragas : Bhupali , Ragageshwari, Asawari
6. Ability to sing a Cinematic Song with the help of Harmonium.
7. Ability to recite Jhumra and Dhammar showing Khali Tali with hand motion in Ekgun, Dhugan Laikaris.
8. Ability to play five alankars on the Harmonium based on the Khamaj Thata.
9. Ability of play theka of Ektaal on Tabla.

Books Recommended:

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I, II, III, IV, V.
9. Tantri Nada Pt. Lalmani Mishar.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Punjabi (Elective)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

(Credit Based Grading System)

Examinations : 2023-26

GURU NANAK DEV UNIVERSITY AMRITSAR

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(ii) Subject to change in the syllabi at any time.
Please visit the University website time to time.

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

INDEX

B.A./B.Sc. (12+3 System of Education) (Semester - I) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

SEMESTER–I

Punjabi (Elective)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਕਰੈਡਿਟ 4–1–0

Time: 03 Hours **Max. Marks : 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ + 2 ਪੀਰੀਅਡ ਕੰਪੋਜ਼ੀਸ਼ਨ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ–ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ- ਏ

ਕਾਵਿ –ਰੰਗ (ਸੰਪਾ. ਡਾ. ਦਰਿਆ, ਡਾ. ਮਨਜਿੰਦਰ ਸਿੰਘ)
(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ/ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ)

ਸੈਕਸ਼ਨ- ਬੀ

ਪਿੰਜਰ (ਨਾਵਲ) – ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ

(ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ/ਵਿਸ਼ਾ-ਵਸਤੂ/ਬਰਤਾਤਕ ਜੁਗਤਾ/ਪਾਤਰ-ਉਸਾਰੀ)

ਸੈਕਸ਼ਨ- ਸੀ

ਭਾਰਤੀ ਕਾਵਿ- ਸ਼ਾਸਤਰ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ **ਸਪਰਦਾਵਾ**,
ਧੁਨੀ ਸੰਪਰਦਾਇ, ਰਸ ਸੰਪਰਦਾਇ, ਅਲੰਕਾਰ ਸੰਪਰਦਾਇ (ਸੰਖੇਪ ਜਾਣਕਾਰੀ)

ਸੈਕਸ਼ਨ- ਡੀ

ਅਰਥ ਵਿਗਿਆਨ : ਪਰਿਭਾਸ਼ਾ, ਸਫਟ ਅਤ ਅਪਹ ।ਸਧਾਤ, ਅਰਥ ਆਧਾਰਤ ਸ਼ਬਦ ਵਨਗੀਆ : ਬਹੁਅਰਥਕ, ਸਮਾਨਅਰਥਕ, **ਵਿਰੋਧਾਰਥਕ** ਸ਼ਬਦ, ਅਰਥ ਪਰਿਵਰਤਨ।

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਰਾਜਿੰਦਰਪਾਲ ਸਿੰਘ ਬਰਾੜ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
2. ਗੁਰਪਾਲ ਸਿੰਘ ਸੰਧੂ, **ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
3. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਸਮਾਲੋਚਨਾ ਸ਼ਾਸਤਰ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
4. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਕੋਸ਼ : ਪਰਿਭਾਸ਼ਕ ਸ਼ਬਦਾਵਲੀ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼, **ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
6. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਾਵਿ : ਪ੍ਰਮੁੱਖ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
7. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਪੰਜਾਬੀ ਨਾਵਲ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਤੇ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
8. ਹਰਚਰਨ ਸਿੰਘ ਸੋਬਤੀ, **ਪ੍ਰਸਿੱਧ ਪੰਜਾਬੀ ਨਾਵਲ**, ਰਚਨਾ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ, 1980.
9. ਪਰਮਜੀਤ ਸਿੰਘ ਸਿੱਧੂ, **ਮਾਨਵ ਵਿਗਿਆਨ, ਭਾਸ਼ਾ ਵਿਗਿਆਨ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
10. ਡਾ. ਰੰਜੂ ਬਾਲਾ, **ਅਰਥ ਵਿਗਿਆਨ**, ਆਰਸੀ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ।
11. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

SEMESTER–II

Punjabi (Elective)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਕਰੈਡਿਟ 4–1–0

Time: 03 Hours **Max. Marks : 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ + 2 ਪੀਰੀਅਡ ਕੰਪੋਜ਼ੀਸ਼ਨ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ–ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ- ਏ

ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1700 ਤੱਕ)

(ਸੰਪਾ. ਡਾ. ਧਰਮ ਸਿੰਘ, ਡਾ. ਹਿਰਦੇਜੀਤ ਭੋਗਲ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ)

(ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਸਾਹਿਤ (ਇਤਿਹਾਸਕ ਤੇ ਸਭਿਆਚਾਰਕ ਪਿਛੋਕੜ),
ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ, ਨਾਥ ਜੋਗੀਆਂ ਦਾ ਸਾਹਿਤ, ਗੁਰਮਤਿ ਕਾਵਿ ਧਾਰਾ (ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ)

(ਅ) ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਕਾਵਿ, ਪੰਜਾਬੀ ਕਿੱਸਾ ਕਾਵਿ, ਪੰਜਾਬੀ ਬੀਰ ਕਾਵਿ, ਵਾਰਤਕ ਸਾਹਿਤ (ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ)

ਸੈਕਸ਼ਨ- ਬੀ

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਕਹਾਣੀਆਂ (ਸੰਪਾ. ਨਵਤੇਜ ਸਿੰਘ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ)
(ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ/ਕਹਾਣੀ ਕਲਾ)

ਸੈਕਸ਼ਨ- ਸੀ

(ੳ) ਦਫ਼ਤਰੀ ਅਤੇ ਘਰੇਲੂ ਚਿੱਠੀ ਪੱਤਰ

(ਅ) ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ : ਪਰਿਭਾਸ਼ਾ, ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਦੇ ਨਿਯਮ

ਸੈਕਸ਼ਨ- ਡੀ

ਕੋਸ਼ਕਾਰੀ ਅਤੇ ਪੰਜਾਬੀ ਕੋਸ਼ਕਾਰੀ
(ਕੋਸ਼ਕਾਰੀ ਦੀ ਪਰਿਭਾਸ਼ਾ/ਕੋਸ਼ਾਂ ਦਾ ਵਰਗੀਕਰਨ/ਪੰਜਾਬੀ ਕੋਸ਼ਕਾਰੀ ਦਾ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਕਿਰਪਾਲ ਸਿੰਘ ਕਸੇਲ ਤੇ ਪਰਮਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੀ ਉਤਪਤੀ ਤੇ ਵਿਕਾਸ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
2. ਜਗਬੀਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਦਿ ਕਾਲ – ਭਗਤੀ ਕਾਲ)**, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਪਰਮਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਦਿ ਕਾਲ ਤੋਂ 1700 ਤੱਕ)**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
4. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਾਵਿ : ਪ੍ਰਮੁੱਖ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
5. ਸੁਖਬੀਰ ਕੌਰ ਮਾਹਲ, **ਕਲਾਸਿਕੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਨਿਰਧਾਰਣ ਤੇ ਮੁਲਾਂਕਣ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
6. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨੀ ਲਾਲ ਸਿੰਘ, **ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਨ**, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ।
7. ਦਲਜੀਤ ਸਿੰਘ ਖਹਿਰਾ, **ਕੋਸ਼ਕਾਰੀ ਅਤੇ ਪੰਜਾਬੀ ਕੋਸ਼ਕਾਰੀ (ਸਿਧਾਂਤਕ ਅਤੇ ਵਿਹਾਰਕ ਪਰਿਪੇਖ)**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।

SEMESTER–III

PUNJABI (ELECTIVE)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਕਰੈਡਿਟ 4–1–0

Time: 03 Hours **Max. Marks : 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ + 2 ਪੀਰੀਅਡ ਕੰਪੋਜ਼ੀਸ਼ਨ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ- ਏ

ਸ਼ਿਰੋਮਣੀ ਪੰਜਾਬੀ ਕਾਵਿ (ਭਾਗ I)
(ਨਾਥ ਬਾਣੀ, ਭਗਤ ਬਾਣੀ ਅਤੇ ਗੁਰਬਾਣੀ)
(ਸੰਪਾ. ਡਾ. ਮਨਜਿੰਦਰ ਸਿੰਘ)
(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ)

ਸੈਕਸ਼ਨ- ਬੀ

ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ (ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ),
ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
(ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਪਾਤਰ-ਚਿਤਰਨ)

ਸੈਕਸ਼ਨ- ਸੀ

ਸਾਹਿਤ ਆਲੋਚਨਾ ਨਾਲ ਸੰਬੰਧਿਤ ਮੂਲ ਸੰਕਲਪ : ਬਿੰਬ, ਪ੍ਰਤੀਕ, ਬੁਣਤੀ ਤੇ ਬੁਣਤਰ, ਕਥਾ ਤੇ ਕਥਾਨਕ, ਪਾਤਰ ਉਸਾਰੀ, ਰੂਪ ਤੇ ਵਸਤੂ, ਅਨੁਕਰਣ, ਵਿਰੇਚਨ

ਸੈਕਸ਼ਨ- ਡੀ

ਸਾਹਿਤ ਦੇ ਰੂਪ : ਵਾਰ, ਜੰਗਨਾਮਾ, ਕਿੱਸਾ, ਕਾਫ਼ੀ : ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਤੱਤ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਜਗਬੀਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਦਿ ਕਾਲ – ਭਗਤੀ ਕਾਲ)**, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਪਰਮਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਦਿ ਕਾਲ ਤੋਂ 1700 ਤੱਕ)**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
3. ਕਿਰਪਾਲ ਸਿੰਘ ਕਸੇਲ ਤੇ ਪਰਮਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੀ ਉਤਪਤੀ ਤੇ ਵਿਕਾਸ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
4. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਸਾਹਿਤ ਸੰਕਲਪ ਕੋਸ਼**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
5. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਕੋਸ਼ ਪਰਿਭਾਸ਼ਿਕ ਸ਼ਬਦਾਵਲੀ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
6. ਨਿਰਮਲ ਸਿੰਘ ਚਾਨਣ, **ਪਿੰਗਲ ਤੇ ਸਾਹਿਤ ਦੇ ਰੂਪ**, ਮੰਗਲ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
7. ਬਲਦੇਵ ਸਿੰਘ ਧਾਲੀਵਾਲ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
8. ਟੀ.ਆਰ.ਵਿਨੋਦ, **ਪੰਜਾਬੀ ਕਹਾਣੀ : ਇਕ ਅਧਿਐਨ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

SEMESTER–IV

PUNJABI (ELECTIVE)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਕਰੈਡਿਟ 4–1–0

Time: 03 Hours **Max. Marks : 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ + 2 ਪੀਰੀਅਡ ਕੰਪੋਜ਼ੀਸ਼ਨ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ- ਏ

ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1701 ਤੋਂ 1900)
(ਸੰਪਾ. ਡਾ. ਰਤਨ ਸਿੰਘ ਜੱਗੀ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1992.
(ੳ) ਸਾਹਿਤਕ ਰੂਪਾਂ ਦਾ ਇਤਿਹਾਸ (ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ),
(ਅ) ਸਾਹਿਤਕ ਰੂਪਾਂ ਦੀਆਂ ਧਾਰਾਵਾਂ ਤੇ ਪ੍ਰਵਿਰਤੀਆਂ

ਸੈਕਸ਼ਨ- ਬੀ

ਗੰਦ ਪ੍ਰਵਾਹ (ਰੇਖਾ ਚਿੱਤਰ ਤੇ ਹਲਕੇ ਲੇਖ)
(ਸੰਪਾ. ਡਾ. ਬਿਕਰਮ ਸਿੰਘ ਘੁੰਮਣ ਅਤੇ ਜਸਪਾਲ ਸਿੰਘ),
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਵਾਰਤਕ ਸ਼ੈਲੀ)

ਸੈਕਸ਼ਨ- ਸੀ

I. ਦਿੱਤੇ ਪੈਰ੍ਹੇ ਵਿਚੋਂ ਸ਼ਬਦ-ਜੋੜਾਂ ਦੀ ਸੁਧਾਈ
II. ਦਿੱਤੇ ਪੈਰ੍ਹੇ ਨੂੰ ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ ਲਾਉਣੇ

ਸੈਕਸ਼ਨ- ਡੀ

ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿੱਪੀ : ਮੁੱਢਲੀ ਜਾਣਕਾਰੀ
(ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ
(ਅ) ਗੁਰਮੁਖੀ ਲਿੱਪੀ : ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਕਿਰਪਾਲ ਸਿੰਘ ਕਸੇਲ ਤੇ ਪਰਮਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੀ ਉਤਪਤੀ ਤੇ ਵਿਕਾਸ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
2. ਡਾ. ਅਮਰਜੀਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਕਿੱਸਾ ਕਾਲ)**, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਗੁਰਬਖ਼ਸ਼ ਸਿੰਘ ਫ਼ਰੈਂਕ, **ਸਭਿਆਚਾਰ ਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
4. ਜੀਤ ਸਿੰਘ ਜੋਸ਼ੀ, **ਸਭਿਆਚਾਰ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
5. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ : ਸੰਦਰਭਮੂਲਕ ਅਧਿਐਨ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
6. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਸਰੋਤ ਅਤੇ ਸਰੂਪ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
7. ਸੁਖਵਿੰਦਰ ਸਿੰਘ ਸੰਘਾ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਗਿਆਨ**, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਕਾਦਮੀ, ਜਲੰਧਰ।
8. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨੀ ਲਾਲ ਸਿੰਘ, **ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਣ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
9. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

SEMESTER–V

PUNJABI (ELECTIVE)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਕਰੈਡਿਟ 4–1–0

Time: 03 Hours **Max. Marks : 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ + 2 ਪੀਰੀਅਡ ਕੰਪੋਜ਼ੀਸ਼ਨ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ–ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ- ਏ

ਸ਼ਰੋਮਣੀ ਪੰਜਾਬੀ ਕਾਵਿ (ਭਾਗ II)
(ਸੂਫ਼ੀ, ਕਿੱਸਾ ਅਤੇ ਬੀਰ ਕਾਵਿ)
(ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, ਡਾ. ਮੇਘਾ ਸਲਵਾਨ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ)
(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ)

ਸੈਕਸ਼ਨ- ਬੀ

ਲੋਕ ਰੰਗ
(ਸੰਪਾ. ਡਾ. ਸਤਿੰਦਰ ਔਲਖ, ਡਾ. ਗੁਰਮੀਤ ਸਿੰਘ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ)
ਲੋਕਗੀਤਾਂ ਅਤੇ ਲੋਕ ਕਹਾਣੀਆਂ ਦਾ ਵਿਸ਼ਾ ਵਸਤੂ, ਸਾਰ, ਵਿਹਾਰਕ ਅਧਿਐਨ

ਸੈਕਸ਼ਨ- ਸੀ

ਸਾਹਿਤ ਆਲੋਚਨਾ, ਸਾਹਿਤ ਦੇ ਤੱਤ, ਸਾਹਿਤ ਅਤੇ ਸਮਾਜ, ਸਾਹਿਤ ਅਤੇ ਸ਼ਖ਼ਸੀਅਤ,
ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ**,**

ਸੈਕਸ਼ਨ- ਡੀ

ਛੰਦ : ਦੋਹਿਰਾ, ਸੋਰਠਾ, ਕਬਿੱਤ, ਕੋਰੜਾ, ਚੌਪਈ, ਸਿਰਖੰਡੀ, ਦਵੱਈਆ, ਬੈਂਤ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਗੁਰਦੇਵ ਸਿੰਘ ਸਿੱਧੂ, **ਸ਼ੁਡ਼ੀ ਕਾਵਿਧਾਰਾ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
2. ਕੁਲਬੀਰ ਸਿੰਘ ਕਾਂਗ, **ਕਿੱਸਾ ਕਾਵਿ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
3. ਸੁਤਿੰਦਰ ਸਿੰਘ ਨੂਰ, **ਵਾਰ ਕਾਵਿ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
4. ਸਤਿੰਦਰ ਸਿੰਘ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
5. ਜੀਤ ਸਿੰਘ ਸੀਤਲ, **ਵਾਰਤਕ ਅਤੇ ਵਾਰਤਕ ਸ਼ੈਲੀ**, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ।
6. ਧਰਮਪਾਲ ਸਿੰਗਲ, **ਵਾਰਤਕ ਸ਼ੈਲੀ**, ਭਾਸ਼ਾ ਵਿਭਾਗ ਪੰਜਾਬ, ਪਟਿਆਲਾ।
7. ਡਾ. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਦੇ ਰੂਪ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
8. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਸਮਾਲੋਚਨਾ ਸ਼ਾਸਤਰ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
9. ਡਾ. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਕੋਸ਼ : ਪਰਿਭਾਸ਼ਕ ਸ਼ਬਦਾਵਲੀ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
10. ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼, **ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤ੍ਰ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।

SEMESTER–VI

PUNJABI (ELECTIVE)

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਕਰੈਡਿਟ 4–1–0

Time: 03 Hours **Max. Marks : 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ + 2 ਪੀਰੀਅਡ ਕੰਪੋਜ਼ੀਸ਼ਨ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ- ਏ

ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1901–1995 ਤਕ ਈ. ਤਕ)
(ਸੰਪਾ. ਡਾ. ਜਸਵਿੰਦਰ ਸਿੰਘ, ਡਾ. ਮਾਨ ਸਿੰਘ ਢੀਂਡਸਾ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ)
ੳ. ਸਾਹਿਤਕ ਰੂਪ : ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ
ਅ. ਪ੍ਰਵਿਰਤੀਆਂ

ਸੈਕਸ਼ਨ- ਬੀ

ਪੰਜਾਬੀ ਨਾਟਕ :
ਚੰਦਨ ਦੇ ਓਹਲੇ (ਪਾਲੀ ਭੁਪਿੰਦਰ, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ)
ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ/ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਟਕ ਕਲਾ

ਸੈਕਸ਼ਨ- ਸੀ

ਸਾਹਿਤ ਦੇ ਰੂਪ :
ਰੇਖਾ ਚਿੱਤਰ, ਸੰਸਮਰਣ, ਸਫ਼ਰਨਾਮਾ, ਨਿਬੰਧ, ਜੀਵਨੀ, ਡਾਇਰੀ, ਸਵੈ-ਜੀਵਨੀ, : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ

ਸੈਕਸ਼ਨ- ਡੀ

ਵਿਹਾਰਕ ਆਲੋਚਨਾ :
ੳ. ਵਿਹਾਰਕ ਆਲੋਚਨਾ : ਸਿੱਧਾਂਤਕ ਪੱਖ
ਅ. ਵਿਹਾਰਕ ਆਲੋਚਨਾ
(**ਸ਼ਰੋਮਣੀ ਪੰਜਾਬੀ ਕਾਵਿ** ਭਾਗ I ਅਤੇ II ਦੇ ਪ੍ਰਸੰਗ ਵਿਚ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਰਾਜਿੰਦਰ ਸਿੰਘ ਸੇਖੋਂ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਨਵੀਨ ਇਤਿਹਾਸ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
2. ਕਿਰਪਾਲ ਸਿੰਘ ਕਸੇਲ, ਪਰਮਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੀ ਉਤਪਤੀ ਤੇ ਵਿਕਾਸ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।
3. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਦੇ ਰੂਪ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
4. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਕੋਸ਼ : ਪਰਿਭਾਸ਼ਕ ਸ਼ਬਦਾਵਲੀ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਜੀਤ ਸਿੰਘ ਜੋਸ਼ੀ, **ਅਧਿਐਨ ਤੇ ਅਧਿਆਪਨ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
6. ਸਤੀਸ਼ ਕੁਮਾਰ ਵਰਮਾ, **ਪੰਜਾਬੀ ਨਾਟਕ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
7. ਸਤੀਸ਼ ਕੁਮਾਰ ਵਰਮਾ, **ਪੰਜਾਬੀ ਨਾਟਕ ਬੀਜ ਤੋਂ ਬਿਰਖ ਤਕ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
8. ਪਾਲੀ ਭੁਪਿੰਦਰ, **ਪਿਆਸਾ ਕਾਂ** (ਭੂਮਿਕਾ), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
9. ਸਤਿੰਦਰ ਸਿੰਘ, **ਵਿਹਾਰਕ ਸਮੀਖਿਆ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
10. ਮਨਜੀਤ ਕੌਰ ਕਾਹਲੋਂ, **ਚੰਦਨ ਦੇ ਓਹਲੇ ਇਕ ਵਿਸ਼ਲੇਸ਼ਣ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Physical Education

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Physical Education)

INDEX

B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–I

PHYSICAL EDUCATION

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks : 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Definition of the terms: Education, Physical Education, Physical Training and Coaching.
2. Aims and Objectives of Physical Education.
3. Relationship of Education and Physical Education.

SECTION–B

4. Biological Principles:
   (a) Growth and Development
   (b) Age and sex differences
   (c) Effects of heredity and environment on growth and development.
   (d) Chronological age, physiological age, Anatomical age and Mental age.

5. Body types.

SECTION–C

6. Development of Physical Education and Sports in India.
   (a) Pre–Independence
   (b) Post– Independence
   (c) Sports Schemes in India
      (i) N.S.N.I.S.
      (ii) Sports Authority of India.
      (iii) Punjab Sports Department.
      (iv) Punjab State Sports Council.

SECTION–D

7. Olympic Games:
   (a) Ancient Olympics.
   (b) Modern Olympics.
8. Commonwealth Games
9. Asian Games
10. History, Fundamentals, Rules, Dimensions and regulations of Volleyball and Cricket.

B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–I

PHYSICAL EDUCATION

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks : 25

Division of Marks : Athletics (08) + Games (08) +Ground Markings (2+2), Practical Note Book (3), Viva–Voce (2)

- **Athletics Performance ——————** 100M, Shot–put for Boys
  100M, Shot–put for Girls

- **Games (Boys & Girls) ——---------- Fundamentals, Rules, Performance**
  Volleyball
  Cricket

Suggested Readings:

1. Barrow, H.M. Man and His Movements: Principles of Physical education, Lea and Febiger, 1973, Latest Edition.
2. Brar, Gurcharan Singh. Roots of Panjab University and its Sports Archives (1882-1982), Mohindra Publishing House, Chandigarh, 2017.
3. Reverse, R.S., Foundations of Physical Education Houghton Mifflin Co. Boston, 1978, Latest Edition.
4. Bucher, C.S. Foundations of Physical Education 5th Edition, 1968, at Louis C.V. Mosby. C.
5. Eraz Ahmad Khan, History of Physical Education – Scientific Book Co., Patna–4, Latest Ed.
6. Singh Kanwaljeet and Singh Inderjeet : Sports Sociology, Friends Publication, New Delhi, 2000.
7. Tadan D.K. et al,: Scientific basis of Physical Education and Sports, Friends Publication, New Delhi, 2001.
8. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
9. Kang G.S. and Deol N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–II

PHYSICAL EDUCATION

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks : 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Cell: Structure and Functions.
2. Skeletal System: Types of bones, names of the various bones of the body, Various types of Joints.
3. Muscular System: Various types of muscles, structure of skeletal muscles.

SECTION–B

4. Nutrition: Elements of balanced diet, Functional Diet/Food
5. Pre, During and Post Competition diet for Sports Persons.
6. Doping in sports.

SECTION–C

7. Meaning and scope of Health Education. Hygiene problems of educational institutions and their remedial measures.
8. Air and water pollution and its remedial measures.
9. First aid in case of snake bite, drowning, electric shock, burns, fracture, dislocation, sprain and strain.

SECTION–D

10. Effects of Alcohol and smoking on health.
11. Communicable Diseases: Mode of transmission, prevention and control of tuberculosis, hepatitis (A & B), Rabies and HIV/AIDS.
12. History, Fundamentals, Rules, Dimensions and regulations of Handball and Kho-Kho.

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–II

PHYSICAL EDUCATION

(PRACTICAL)

L T P
Credits 0 0 1
Marks : 25

Division of Marks: Athletics (08) + Games (08) +Ground Markings (2+2), Practical Note Book (3), Viva–Voce (2)

- **Athletics Performance ——————** 100M, Long Jump for Boys
  100M, Long Jump for Girls

- **Games (Boys & Girls) ---------- Fundamentals, Rules, Performance**
  Handball
  Kho–Kho

Suggested Readings:-

1. John Raynor Anatomy and Physiology, New York, Harper & Row, 1983.
2. Rose and Wilson Foundations of Anatomy and Physiology, 1981, 5th ed.
3. Parror, J.W. anatomy and Physiology for Physical Education Teachers, Lend; Edward Arnold Healthful Living McGraw Hill, 1983.
4. Tadan D.K. et al,: Scientific basis of Physical Education and Sports, Friends Publication, New Delhi, 2001.
5. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
6. Kang G.S.: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University, Patiala, 2000.
7. Kang G.S. and Deol N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.
8. Dhillon G.K.: Health Education, Punjab Text Book

B.A./B.Sc. (12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER III

PHYSICAL EDUCATION

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks : 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Meaning of Learning, Nature of skill Learning and laws of learning.
2. Learning Curve.
3. Motivation in Physical education.
4. Different Theories of Motivation

SECTION–B

5. Play meaning and Theory.
6. Psychological factors effecting sports performance i.e stress tension, anxiety, aggression.
7. Psychological characteristics of the adolescent in sports situation.

SECTION–C

8. Transfer of training, its application sports situation.
9. Growth and development during the different Stages of Childhood and Adolesent:
   I. Physical
   II. Mental
   III. Emotional
   IV. Inter- Personal social development.
10. Causes of poor performance in India.

SECTION–D

11. Sports and Economy.
12. Sports and Socialization-integration through sports(National & International)
13. Sports, Politics and their relationship.
14. History, Fundamentals, Rules, Dimensions and regulations of Football and Wrestling.

SEMESTER- III

PHYSICAL EDUCATION

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks : 25

Division Marks: athletics (08) + games (08) + ground marking (2+2), Practical Note Book (3), Viva Voce (2)

- **Athletics Performance** ----- 200M, Discuss Throw for Boys
  200M, Discuss Throw for Girls

- **Games (Boys & Girls) ---------- Fundamental Rules, Performance**
  Football
  Wrestling

Books Recommended:

1. Singh, Kanwaljeet and Singh Inderjeet: Sports Sociology, Friend Publication New Delhi, 2000.
2. Tandan, D.K. et.al, : Scientific basis of physical education and sports Friends Publication New Delhi, 2001.
3. Singh, Ajmer and Gill Jagtar: Essentials of Physical Education and Olympics Movement, Kalyani Publisher, Ludhiana, 2004.
4. Kang, G.S.: Anatomy, Physiology and Health Education Publication Bureau, Punjabi University, Patiala, 2000.
5. Kang, G.S. and Deol, N.S.: An Introduction to Health and Physical Education, 21st Centaury, Patiala, 2008.

SEMESTER IV

PHYSICAL EDUCATION

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks : 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Meaning, aims and Objective types of yoga.
2. The practice Asans and their importance, meditative poses, Padma,Vazra, Sukh Asana Cultural poses, Halasan, Sarvangasana, Bhujangasna, Salbhasana, Dhanurasana Chakarasana,

SECTION–B

3. Paranayam, its types, objective Physiological value.
4. Sudhi kirya ; its types objective Physiological value .
5. Effects of Yogic Physical exercise on various systems of the body.

SECTION–C

6. Respiratory System, Organ of respiratory, Mechanism of respiration.
7. Excretory system ; Structure and function of skin
8. Endocrine system, meaning of endocrine glands, function and location pituitary, thyroid and adrenal glands.
9. Digestive System : Its Organ and Function

SECTION–D

10. Nervous System : its organ and function
11. Circulatory system : Heart and its structure, Mechanism of circulation of blood, various types of blood vessel.
12. Effect of Exercise on muscular, Circulatory and respiratory Systems
13. History, Fundamentals, Rules, Dimensions and regulations of Hockey.

SEMESTER- IV

PHYSICAL EDUCATION

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks : 25

Division Marks: athletics (08) + games (08) + ground marking (2+2), Practical Note Book (3), Viva Voce (2)

- **Athletics Performance** ---------- 200M, High Jump for Boys
  200M, High Jump for Girls
- **Games (Boys & Girls)---------- Fundamental Rules, Performance**
  Hockey
  Yoga

Books Recommended:

1. Singh, Kanwaljeet and Singh Inderjeet: Sports Sociology, Friend Publication New Delhi, 2000.
2. Tandan, D.K. et.al, : Scientific basis of physical education and sports Friends Publication New Delhi, 2001.
3. Singh, Ajmer and Gill Jagtar: Essentials of Physical Education and Olympics Movement, Kalyani Publisher, Ludhiana, 2004.
4. Kang, G.S.: Anatomy, Physiology and Health Education Publication Bureau, Punjabi University, Patiala, 2000.
5. Kang, G.S. and Deol, N.S.: An Introduction to Health and Physical Education, 21st Centaury, Patiala, 2008.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–V

PHYSICAL EDUCATION

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks : 75

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Recreation: Meaning, Types and Importance of Recreation.
2. Sports Awards :
   a. Arjuna Award **b.** Dronacharya Award **c.** Dhayanchand Khel Ratan Award
   d. Maka Trophy **e.** Maharaja Ranjit Singh Award
3. Principles of recreation.
4. Agencies providing recreation in India.

SECTION–B

5. Obesity, Weight Management and Physical Activity.
6. Muscular contraction: Eccentric, Concentric, Motor unit, Isotonic, Isometric, Isokinetic Exercises.
7. Laws of motion, Lever and its types, Equilibrium, Its types and Laws, Centre of Gravity, Force and its types.

SECTION–C

8. Posture: Meaning and Types of postures.
9. Postural-Deformities: Kyphosis, Lordosis, Scoliosis, Knock Knee, Bow Legs, Flat Foot, their Causes and Corrective Exercises.

SECTION–D

10. Meaning and Aims of Sports Training.
11. Principles of Sports Training.
12. Normal Load, Creast Load, Over Load.
13. Meaning and Importance of Warming up and Cooling down in sports.
14. History, Fundamentals, Rules, Dimensions and regulations of Basketball and Judo.
15. Layout and Track Marking , Specifications of Athletic Equipment.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–V

PHYSICAL EDUCATION

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks : 25

Division of Marks: Athletics (08) + Games (08) + Ground Markings (2+2), Practical Note Book (3), Viva-Voce (2)

- Athletics Performance ---------- 800M, Triple Jump for Boy
  800M, Tipple Jump for Girls
- Games (Boys & Girls) ---------- Fundamentals, Rules, Performance
  Basketball, Judo

Books Recommended:

1. Singh Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi 2000.
2. Tandon D.K. et.al,: Scientific Basis of Physical Education and Sports, Friends Publication New Delhi, 2001.
3. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang G.S.,: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University Patiala 2000.
5. Kang G.S. and Deol, N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–VI

PHYSICAL EDUCATION

(THEORY)

Time: 3 Hours **L T P**

Credits 3 0 0

Marks : 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

1. Common Sports injuries (Sprain, Strain, Contusion, Fracture and Dislocation) their Cause and Management.
2. General concept of Vital capacity, Blood pressure, General and Specific conditioning.
3. Tournaments: Draw of fixture, types of tournaments.
   (a) Knock Out
   (b) League
   (c) Combination Tournament
   (d) Challenge Tournament

SECTION-B

4. Intramural and Extramural Sports Competitions and their Importance.
5. Organization of Camps, Play days (Sports Meet)
6. Need and scope of coaching in India. Professional preparation of coaches. Qualifications and responsibilities of a coach.

SECTION-C

7. Meaning and Importance of Kinesiology.
8. Meaning of Bio mechanics and its importance, Distance, displacement, Speed, Velocity and acceleration
9. Therapeutic Exercises, their classification and benefits.

SECTION-D

10. Components of Physical Fitness, Speed, Strength, Endurance, Agility and Flexibility.
11. Training Methods; Circuit, Interval, Fartlek, Weight-Training and Cross Country.
12. Methods of Improving Strength, Speed, Endurance, Flexibility and Agility.
13. History, Fundamentals, Rules, Dimensions and regulations of kabaddi and badminton.

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Physical Education)

SEMESTER–VI

PHYSICAL EDUCATION

(PRACTICAL)

	L	T	P
Credits	**0**	**0**	**1**

Marks : 25

Division of Marks: Athletics (08) + Games (08) + Ground Markings (2+2), Practical Note Book (3), Viva-Voce (2)

- Athletics Performance ----------1500M, Javelin Throw for Boy
  800M, Javelin Throw for Girls
- Games (Boys & Girls) ---------- Fundamentals, Rules, Performance
  Kabbadi
  Badminton

Books Recommended:

1. Singh Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi 2000.
2. Tandon D.K. et.al,: Scientific Basis of Physical Education and Sports, Friends Publication New Delhi, 2001.
3. Singh Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang G.S.,: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University Patiala 2000.
5. Kang G.S. and Deol, N.S.: An Introduction to Health and Physical Education 21st Century, Patiala, 2008.

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Physics

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

INDEX

SEMESTER–I

PHYSICS

PAPER–A: MECHANICS

(THEORY)

Time : 3 Hrs.

Credit: 3
(3 Hrs./week)
Marks: 75

Note : There should be 20% numerical in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Cartesian and spherical polar co–ordinate systems, area, volume, velocity and Acceleration in these systems. Solid angle, Relationship of conservation laws and symmetries of space and time.

11 Lectures

SECTION–B

Various forces in Nature (Brief introduction) centre of mass, equivalent one body problem, central forces, equation of motion under central force, equation of orbit and turning points. Kepler Laws. Concept of Ether and Michelson son–Morley experiment.

11 Lectures

SECTION–C

Inertial frame of reference. Galilean transformation and Invariance. Non Inertial frames, coriolis force and its applications. Variation of acceleration due to gravity with latitude. Focault pendulum.

11 Lectures

SECTION–D

Elastic collision in Lab and C.M. system, velocities, angles and energies, crosss section of elastic scattering, Rutherford scattering. Rigid Body motion; Rotational motion, principal moments and Axes. Euler's equations, precession and elementary gyroscope.

12 Lectures

Books Suggested:-
1. Mechanics, Berkeley Vol.–I, C. Kittle.
2. Mechanics, H.S. Hans & S.P. Puri.

SEMESTER–I
PHYSICS
PAPER–B: ELECTRICITY AND MAGNETISM
(THEORY)

Time : 3 Hrs.

Credit: 2
(2 Hrs./week)
Marks: 50

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Basic ideas of Vector Calculus Gradient, Divergence, curl and their physical significance. Laplacian in rectangular, cylindrical and spherical coordinates. Coulomb's Law for point charges and countinuous distribution of charges. Electric field due to dipole, line charge and sheet of charge. Electric flux, Gauss's Law and its applications. Gauss's divergence theorem and differential form of Gauss's Law. Green's theorem.

12 Lectures

SECTION–B

Work and potential difference. Potential difference as line integral of field. Electric potential due to a point charge, a group of point charges, dipole and quadrupole moments, long uniformly charged wire, charged disc. Stoke's theorem and its applications in Electrostatic field, curl E=0. Electric fields as gradient of scalar potential. Calculation of E due to a point charge and dipole from potential. Potential due to arbitrary charge distribution and multipole moments.

11 Lectures

SECTION–C

Poisson and Laplace's equation and their solutions in Cartesian and spherical coordinates. Concept of electrical images. Calculation of electric potential and field due to a point charge placed near an infinitely conducting sheet.Current and current density, equation of continuity. Microscopic form of Ohm's Law ($J=\sigma E$) and conductivity, Failure of Ohm's Law.

11 Lectures

SECTION–D

Interaction between moving charges and force between parallel currents. Behaviour of various substances in magnetic field. Definition of M and H and their relation to free and bound currents. Permeability and susceptibility and their interrelationship. Orbital motion of electrons and diamagnetism, Paramagnetism and Ferromagnetism. **11 Lectures**

Books Suggested:-

1. Fundamentals of Electricity and Magnetism: Arthur F. Kipp.
2. Electricity and Magnetism, Berkeley Physics Course: Vol. II, E.M. Purcell.
3. Introduction to Classical Electrodynamics: David Griffith.
4. EM Waves and Radiating System: Edward C. Jordan and K.G. Balmain.
5. Fields and Waves Electromagnetic: David K. Cheng.

B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–I

PHYSICS

(PRACTICAL)

Credit: 2
(4 Hrs./week)
Marks: 50

General Guidelines for Practical Examination:

I. The distribution of marks is as follows: **Marks: 50**

- i) One experiment **20 Marks**
- ii) Brief Theory 10 **Marks**
- iii) Viva–Voce 1**0 Marks**
- iv) Record (Practical file) **10 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

1. To study the dependence of moment of inertia on distribution of mass (by noting time periods of oscillations using objects of various geometrical shapes but of same mass).
2. To establish relationship between torque and angular acceleration using fly wheel.
3. To find the moment of inertia of a flywheel.
4. Study of bending of beams and determination of Young's modulus.
5. Determination of Poisson's ratio for rubber.
6. To determine energy transfer, coefficient of restitution and verify laws of conservation of linear momentum and kinetic energy in elastic collisions using one dimensional collisions of hanging spheres.
7. To verify the laws of vibrating string by Melde's experiment.
8. Measure time period as a function of distance of centre of suspension (oscillation) from centre of mass, plot relevant graphs, determine radius of gyration and acceleration due to gravity.
9. Find the value of 'g' by Kater's pendulum.
10. Measure time period of oscillation of a Maxwell needle and determine modulus of rigidity of the material of a given wire.
11. To measure logarithmic decrement, coefficient of damping, relaxation time, and quality factor of a damped simple pendulum.

SEMESTER–II

PHYSICS

PAPER–A: RELATIVITY AND ELECTROMAGNETISM

(THEORY)

Time : 3 Hrs.

Credit: 3
(3 Hrs./week)
Marks: 75

Note : There should be 20% numericals in each paper.
Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Postulates of special theory of relativity. Lorentz transformations, observer and viewer in relativity. Relativity of simultaneity, Length, Time, velocities. Relativistic Doppeer effect. Variation of mass with velocity, mass–energy equivalence, rest mass in an inelastic collision, relativistic momentum & energy, their transformation, concepts of Minkowski space, four vector formulation.

11 Lectures

SECTION–B

Invariance of charge, E in different frames of references. Fields of a point charge moving with constant velocity, Lorentz's force, Definition of B. BiotSavart's Law and its application to long straight wire, circular current loop and solenoid. Ampere's Circuital law and its application. Divergence and curl of B. Hall effect, derivation of Hall co–efficient. Vector potential, current–density and its applications. Transformation equation of E and B from one frame to another.

11 Lectures

SECTION–C

Faraday's Law of EM induction, Displacement current, Mutual inductance and reciprocity theorem. Self inductance, L for solenoid, Coupling of Electrical circuits. Analysis of LCR series and parallel resonant circuits, Q–factor, Power consumed, power factor.

11 Lectures

SECTION–D

Maxwell's equations their derivation and characterizations, E.M. waves and wave equation in a medium having finite permeability and permitivity but with conductivity σ). Poynting vector, Impedance of a dielectric to EM waves. EM waves in a conducting medium and Skin depth. EM wave velocity in a conductor and anomalous dispersion. Response of a conducting medium to EM waves. Reflection and transmission of EM waves at a boundary of two dielectric media for normal and oblique incidence.

12 Lectures

Books Suggested:-

1. Introduction to Electrodynamics: D.J. Griffiths
2. Physics of Vibrations and Waves: H.J. Pain.
3. EM Waves and Radiating Systems: Edward C. Jordan and K.G. Balmain.
4. Fields and Waves Electromagnetic: David K. Cheng.

SEMESTER–II

PHYSICS

PAPER–B: VIBRATION AND WAVES

(THEORY)

Time : 3 Hrs.

Credit: 2
(2 Hrs./week)
Marks: 50

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Simply harmonic motion, energy of a SHO. Compound pendulum. Torsional pendulum Electrical Oscillations Transverse Vibrations of a mass on string, superposition of two perpendicular SHM having periods in the ration 1:1 and 1:2.

11 Lectures

SECTION–B

Decay of free Vibrations due to damping. Differential equation of damped harmonic motion, types of motion, types of damping. Determination of damping co–efficient– Logarithmic decrement, relaxation time and Q–Factor. Electromagnetic damping (Electrical oscillator).

11 Lectures

SECTION–C

Differential equation for forced mechanical and electrical oscillators. Transient and steady state behaviour. Displacement and velocity variation with driving force frequency, variation of phase with frequency, resonance. Power supplied to an oscillator and its variation with frequency. Q–value and band width. Q–value as an amplification factor. Stiffness coupled oscillators, Normal co–ordinates and normal modes of vibration. Inductive coupling of electrical oscillators.

12 Lectures

SECTION–D

Types of waves, wave equation (transverse) and its solution characteristic impedance of a string. Impedance matching. Reflection and Transmission of waves at boundary. Reflection and transmission of energy. Reflected and transmitted energy coefficients. Standing waves on a string of fixed length. Energy of vibrating string. Wave and group velocity.

11 Lectures

Books Suggested:-

1. Fundamentals of Vibrations and Waves: S.P. Puri.
2. Physics of Vibrations and Waves: H.J. Pain

B.A./B.Sc. (12+3 System of Education) *(Semester–II) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–II

PHYSICS

(PRACTICAL)

Credit: 2
(4 Hrs. /week)
Marks: 50

General Guidelines for Practical Examination:

I. The distribution of marks is as follows :

i) One experiment	20 Marks
ii) Brief Theory	10 Marks
iii) Viva–Voce	10 Marks
iv) Record (Practical file)	10 Marks

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

1. To determine low resistance with Carey-Foster's Bridge.
2. To study the magnetic field produced by a current carrying solenoid using a search coil and calculate permeability of air.
3. To study the induced e.m.f. as a function of the velocity of the magnet.
4. Study of phase relationships using impedance triangler for LCR circuit and calculate impedance.
5. Resonance in a series LCR circuits for different R–value and calculate Q–value.
6. Resonance in a parallel LCR circuits for different R-value and calculate Q-value.
7. Capacitance by flashing and quenching of a neon lamp.
8. To compare capacitance of two capacitors by de–Sauty's bridge.
9. To determined L using Anderson Bridge.
10. To find the value of B_H the horizontal component of earth's magnetic field in the lab using a deflection & vibration magnetometer.
11. To study the variation of magnetic field with distance along the axis of coil carrying current by plotting a graph.

SEMESTER–III

PHYSICS

PAPER-A : STATISTICAL PHYSICS & THERMODYNAMICS

(THEORY)

Time : 3 Hrs.

Credit: 3
(2 Hrs./week)
Marks: 75

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Basic ideas of Statistical Physics, Scope of Statistical Physics, Basic ideas about probability, Distribution of four distinguishable particles into compartments of equal size. Concept of macrostates, microstates, Thermodynamic Probability, Effects of constraints on the system. Distribution of particles in two compartments. Deviation from the state of maximum probability. Equilibrium state of dynamic system. Distribution of distinguishable n particles in k compartments of unequal sizes.

11 Lectures

SECTION-B

Phase space and division into elementary cells. Three kinds of statistics. The basic approach in three statistics. Maxwell Boltzman (MB) statistics applied to an ideal gas in equilibrium. Experimental verification of law of distribution of molecular speeds. Need for Quantum Statistics – B.E. Statement of planck's law of Radiation Wien's Displacement and Stefan's law. Fermi Dirac (FD) statistics. Comparison of M.B, B.E and F.D statistics.

11 Lectures

SECTION-C

Statistical definition of entropy, Change of entropy of system, additive nature of entropy, Law of increase of entropy, Reversible and irreversible processes, and their examples, work done in reversible process, examples of increase in entropy in natural processes, entropy and disorder, Brief review of Terms, Laws of Thermodynamics, Carnot Cycle, Entropy changes in carnot cycle, Applications of thermodynamics to thermoelectric effect, change of entropy along reversible path in P-V diagram. Heat death of universe.

12 Lectures

SECTION-D

Derivation of Maxwell Thermodynamics relations, Cooling produced by adiabatic stretching, Adiabatic Compression, change of internal energy with volume, Specific heat and constant pressure and constant volume. Expression for C_P-C_v, Change of state and Claypron equation.

11 Lectures

Books Suggested:-

1. Statistical Mechanics: B.B. Laud, (Macmillan India Ltd.) 1981.
2. Statistical Physics: Bhattacharjee, J.K. (Allied Pub., Delhi) 2000.
3. Statistical Physics and Thermodynamics: V.S. Bhatia
4. A Treatise on Heat: M.N. Saha & B.N. Srivastava (The Indian Press Pvt. Ltd., Allahabad), 1965.
5. Thermal and statistical Physics-Concepts and Applicatins : S. Sharma, (Ane Books Pvt. Ltd. 2021)

SEMESTER–III

PHYSICS

PAPER–B: OPTICS AND LASERS

(THEORY)

Time : 3 Hrs.

Credit: 2
(2Hrs./week)
Marks: 50

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Interference of Light:
Superposition of light waves and interference, young's double slit experiment, Conditions for sustained interference pattern, Coherent sources of light, Interference pattern by division of wave front, Fresnel Biprism, Displacement of fringes, Change of phase on reflection, Interference in thin films due to reflected and transmitted light, non reflecting films, Newton's Rings. Michelson Interferometer.

11 Lectures

SECTION-B

Diffraction:
Huygen's Fresnel's theory, half-period zones, Zone plate, Distinction between fresnel and fraunh offer diffraction. Fraunh offer diffraction at rectangular and circular apertures, Effect of diffraction in optical imaging, Resolving power of telescope in diffraction grating, its use as a spectroscopic element and its resolving power, Resolving power of microscope.

11 Lectures

SECTION-C

Polarization:
Plane Polarized light, Elliptically polarized light, wire grid polarizer, Sheet polarizer, Mauls' Law, Brewester Law, Polarization by reflection, Scattering, Double reflection, Nicol prism, Retardation plates, Production Analysis of polarized light, Quarter and half wave plates.

11 Lectures

SECTION-D

Laser Fundamentals:
Derivation of Einstein relations, Concept of stimulated emission and population inversion, broadening of spectral lines, three level and four level laser schemes, elementary theory of optical cavity, Longitudinal and transverse modes. Components of laser devices, condition for laser action, types of lasers, Ruby and Nd:YAG lasers, He-Ne and CO_2 lasers construction, mode of creating population inversion and output characteristics, application of lasers –a general outline.

12 Lectures

Books Suggested:-

1. Fundamentals of Optics: F.A. Jenkins and Harvey E White, (Megraw Hill) 4th Edition, 2001.
2. Optics: Ajoy Ghatak, (McMillan India) 2nd Edition, 7th Reprint, 1997
3. Optics: Born and Wolf, (Pergamon Press) 3rd Edition, 1965.
4. Laser Fundamentals: W.T. Silfvast (Foundation Books), New Delhi, 1996.
5. Laser and Non-Liner Optics: B.B. Laud (New Age Pub.) 2002
6. Laser: Svelto, Plenum Press) 3rd Edition, New York

SEMESTER–III

PHYSICS

(PRACTICAL)

Credit: 2
(4 Hrs./week)
Marks: 50

General Guidelines for Practical Examination:

I. The distribution of marks is as follows :

i)	One experiment	**20 Marks**
ii)	Brief Theory	**10 Marks**
iii)	Viva–Voce	**10 Marks**
iv)	Record (Practical file)	**10 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

1. To determine refractive index of glass and liquid using spectrometer.
2. To determine the Cauchy's constants.
3. To study the refractive index of a doubly refracting prism.
4. To set up Newton's rings to determine wavelength of sodium light.
5. To determine the wavelength by using plane diffraction grating (Use Hg source)
6. To determine dispersive power of plane diffraction grating.
7. To determine resolving power of a telescope.
8. To determine resolving power of a grating.
9. To measure an accessible (Horizontal and vertical) height using sextant.
10. To measure inaccessible height by using sextant.
11. Verify laws of probability distribution by throwing of similar coins.

SEMESTER–IV

PHYSICS

PAPER- A : QUANTUM MECHANICS

(THEORY)

Time : 3 Hrs.

Credit: 3
(3 Hrs./week)
Marks: 75

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Formalism of Wave Mechanics:
Brief introduction to need and development of quantum mechanics, photoelectric effect, Compton effect, Wave particle duality, De broglie hypothesis, Uncertainity principle, Gaussian wave packet. Operator correspondence. Normalization and probability interpretation of wave function. Superposition principle.

11 Lectures

SECTION-B

Expectation value, Probability current and conservation of probability. Admissibility conditions or wave function. Ehrenfest theorem, Eigen function and eigen value. Operator formalism, orthogonal system, expansion in eigen functions, Hermitian operator, simultaneous eigen function, equation of motion.

11 Lectures

SECTION-C

Application of Schrodinger wave equation to one dimensional problems: Fundamental postulates of wave mechanics, Schrodinger's wave equation for a free particle and equation of a particle subject to forces. One dimensional step potential for $E>V_0$, one dimensional step potential for $0<E<V_0$, one dimensional potential barrier of finite height and width, Quantum mechanical tunnelling effect, particle in one dimensional box with infinitely hard walls, one dimensional square well of finite depth

11 Lectures

SECTION-D

Application of Schrodinger equation to three dimensional problems: Free particle in three dimensional rectangular box, Eigen wave function, Eigen values of momentum, energy and degeneracy, three dimensional harmonic oscillator (Cartesian coordinates) wave function, energy levels, degeneracy, Schrodinger's wave equation in spherical polar co-ordinates, Schrodinger wave equation for spherically symmetric potential for hydrogen atom, wave function of H atom, solution of $R(r), \Theta(\bar{}), \Phi(¤)$ equations.

12 Lectures

Books Suggested:-

1. A Text book of Quantum Mechanics: P.M. Mathews and K. Venkatesan, (Tata McGraw Hill Pub. Co, Delhi) 2002.
2. Quantum Mechanics: J.L. Powell and B. Craseman (Narosa Pub. House, New Delhi) 1997.
3. Elements of Modern Physics: S.H. Patil, (McGraw Hill), 1998.
4. Introduction to Quantum Mechanics, L. Pauling and E.B. Wilson (Tata McGraw Hill Pub. Co., Delhi), 2002.

SEMESTER–IV

PHYSICS

PAPER - B : ATOMIC AND MOLECULAR SPECTRA

(THEORY)

Time : 3 Hrs.

Credit: 2
(2 Hrs./week)
Marks: 50

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Introduction to Atomic Spectra: Observation of spectra, Types of spectra, Light sources, Spectral analysis, Units in spectroscopy, Bohr's Theory, Spectral series, Representation of spectral lines by terms, Energy level Diagram, Bohr's correspondence Principle, Ritz combination Rule, Continuum at series limit, Evidences in favour of Bohr's Theory, Experimental confirmation of Bohr's theory, Frank-Hertz Experiment.

12 Lectures

SECTION-B

One Electrom Atomic Spectra: Spectrum of Hydrogen atom, Line structure, Normal Zeeman effect, electron spin, Stern Gerlach experiment, spin orbit coupling, electron magnetic moment, total angular momentum, Hyperfine structure, examples of one electron systems, anomalous Zeeman effect, Lande g factor (Sodium D-Lines).

11 Lectures

SECTION-C

Many Electron System Spectra: Exchange symmetry of wave function, exclusion principle, shells, subshells in atoms, atomic spectra (Helium), spectra of alkaline earth atoms, LS coupling, selection rules, Regularities in atomic spectra.

11 Lectures

SECTION-D

Interaction energy ideas, X-ray spectra, Mosley law, Absorption spectra, Auger effect, Molecular bonding, Molecular spectra, selection rules, symmetric structure, Rotational Vibrational, electronic level and spectra of molecules, Raman spectra. Introduction to Raman spectra.

11 Lectures

Books Suggested:-

1. Introduction to Atomic Spectra: H.E. White- Auckland (McGraw Hill), 1934.
2. Spectroscopy Vol. I, II & III: Walker & Straughen
3. Introduction to Molecular Spectroscopy: G.M. Barrow-Tokyo (McGraw Hill, 1962).
4. Spectra of Diatomic Molecules: Herzberg-New York, 1944.

B.A./B.Sc. (12+3 System of Education) *(Semester–IV) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–IV

PHYSICS

(PRACTICAL)

Credit: 2
(4 Hrs./week)
Marks: 50

General Guidelines for Practical Examination:

I The distribution of marks is as follows:

One experiment	**20 Marks**
i) Brief Theory	**10 Marks**
ii) Viva–Voce	**10 Marks**
iii) Record (Practical file)	**10 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

1. To study adiabatic expansion of gas and hence to calculate value of V.
2. To find the coefficient of Thermal Conductivity of a bad conductor by Lee's method.
3. To plot a calibration curve of a given thermocouple (copper constantan) using a potentiometer.
4. To study the photoelectric effect and determine the value of planck's constant.
5. To determine the ionization potential of mercury.
6. Study of variation of light intensity with distance using photovoltaic cell (Inverse Square Law)
7. To determine the heating efficiency of an electric kettle with varying voltage.
8. To study the absorption spectra of iodine vapours.
9. To study the rotation of plane of polarization by using polarimeter.
10. To determine the specific rotation of sugar using Laurent's half shade polarimeter
11. To study the characteristics of Photovoltaic cell.

SEMESTER–V

PHYSICS

PAPER- A : CONDENSED MATTER PHYSICS

(THEORY)

Time : 3 Hrs.

Credit: 3
(3 Hrs./week)
Marks: 75

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Crystal structure, Symmetry operations for a two and three dimensional crystal, Two dimensional Bravais lattices, Three dimensional Bravais lattices, Basic primitive cells, Crystal planes and Miller indices, Diamond and NaCl structure.

11 Lectures

SECTION–B

Crystal Diffraction: Bragg's law, Experimental methods for crystal structure studies, Laue equations, Reciprocal lattices of SC, BCC and FCC, Brag's law in reciprocal lattice, Brillouin zones and its construction in two and three dimensions, Structure factor and atomic form factor.

11 Lectures

SECTION–C

Lattice vibrations, Concepts of phonons, Scattering of photons by phonons, Vibration and mono-atomic, linear chains, Density of modes, Einstein and Debye models of specific heat.

11 Lectures

SECTION–D

Free electron model of metals, Free electron, Fermi gas and Fermi energy, Band Theory: Kronig-Penney model, Metals and insulators, Qualitative discussion of the following: Conductivity and its variation with temperature in semiconductors, Fermi levels in intrinsic and extrinsic semiconductors, band gap in semiconductors.

12 Lectures

Books Suggested:

1. Introduction to Solid State Physics: C. Kittel (Wiley Eastern)
2. Elements of Modern Physics: S.H. Patil (TMGH), 1985.
3. Solid State Physics: Puri and Babbar.

SEMESTER–V
PHYSICS
PAPER - B : ELECTRONICS
(THEORY)

Time : 3 Hrs.

Credit: 2
(2 Hrs./week)
Marks: 50

Note : There should be 20% numericals in each paper.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

Concepts of current and voltage sources, p-n junction, Biasing of diode, V-I characteristics, Rectification: half wave, full wave rectifiers and bridge rectifiers, Efficiency, Ripple factor, Qualitative ideas of filter circuits (LC and π filters), Zener diode and voltage regulation, Introduction to Photonic devices (solar cell, photodiode and LED). Basic concepts of Boolean algebra, AND OR NOT and NAND Gates.

11 Lectures

SECTION–B

Junction transistor : Structure and working relation between different currents in transistors, Sign conventions, Amplifying action, Different configurations of a transistor and their comparison, CB and CE characteristics, Structure and characteristics of JEFT, Transistor biasing and stabilization of operating point, Voltage divider biasing circuit.

11 Lectures

SECTION–C

Working of CE amplifier, Amplifier analysis using h-parameters, Equivalent circuits, Determination of current gain, Power gain, Input impedance, FET amplifier and its voltage gain, Feed back in amplifiers, Different types, Voltage gain, Advantage of negative feed back, Emitter follower as negative feed back circuit.

12 Lectures

SECTION–D

Barkausen criterion of sustained oscillations, LC oscillator (tuned collector, tuned base Hartley), RC oscillators, phase shift and Wein bridge.

11 Lectures

Books Suggested:

1. Basic Electronics and Linear Circuits by N.N. Bhargave, D.C. Kulshreshtha and S.C. Gupta.
2. Electronic Devices & Circuits: Millman & Halkias
3. Solid State Electronic Devices: Ben G. Streatman
4. Physics of Semi Conductor Devices: S.M. Sze and Kwok K. Ng.

B.A./B.Sc.(12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–V

PHYSICS

(PRACTICAL)

Credit: 2
(4 Hrs./week)
Marks: 50

General Guidelines for Practical Examination:

I. The distribution of marks is as follows :
   (i) One experiment — **20 Marks**
   (ii) Brief Theory — 10 **Marks**
   (iii) Viva–Voce — **10 Marks**
   (iv) Record (Practical file) — **10 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

1. Measurement of reverse saturation current in p-n-junction diode at various temperatures and to find the approximate value of energy gap.
2. To draw forward and reverse bias characteristics of a p-n junction diode.
3. Study of a diode as a clipping element.
4. To measure the efficiency and ripple factors for (a) halfwave (b) full wave and (c) bridge rectifier circuits.
5. To draw the characteristics of a Zener diode.
6. To study characteristics of Common Base transistor.
7. To study characteristics of Common Emitter transistor.
8. To study the gain of an amplifier at different frequencies and to find Band width
9. To study the reduction in the ripple in the rectified output with RC, LC and л filters.
10. To study logic gates (OR, AND, NOT and NAND).

SEMESTER–VI
PHYSICS
PAPER–A: RADIATION AND PARTICLE PHYSICS
(THEORY)

Time : 3 Hrs.

Credit: 3
(3 Hrs./week)
Marks: 75

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Interaction of Radiation and Charged Particles With Matter: Energy loss of electrons and positrons, Positrons annihilation in condensed media, Sopping power and range of heavier charged, derivation of Bethe-Bloch formula, interaction of gamma rays with matter.

11 Lectures

SECTION-B

Nuclear Radiation Detection: Gas-filled detectors, proportional and Geiger-Muller counters, Scintillation detectors, semiconductor detectors, Cherenkov effect, solid state nuclear track detectors, bubble chambers, nuclear emulsions.

11 Lectures

SECTION-C

Accelerators: Accelerators, linear accelerators, cyclic accelerators: cyclotron, synchrocyclotron, betatron, electron and proton synchrotron, phase stability, colliding beam machines: introduction to Large Hadron Collider and Fermilab Tevatron.

11 Lectures

SECTION-D

Elementary Particles: Historical introduction, fermions and bosons, particles and antiparticles, Classification of particles, types of interactions, electromagnetic, weak, strong interactions, gravitational interactions, Quantum numbers and conservation laws, isospin, charge conjugation, Introduction to quarks and qualitative discussion of the quark model, high energy physics units.

12 Lectures

TUTORIALS: Relevant problems on the topics covered in the course.

Books Suggested :-

1. Basic Ideas and Concepts in Nuclear Physics: K. Hyde
2. Introduction to Nuclear Physics: H.A. Enge
3. Nuclear Physics : I. Kaplan (Addison Wesley)
4. Nuclei and Particles: E. Segre
5. Introduction to High Energy Physics: D.H. Perkins
6. Elementary Particles: I.S. Hughes

SEMESTER–VI
PHYSICS
PAPER–B: NUCLEAR PHYSICS
(THEORY)

Time : 3 Hrs.

Credit: 2
(2 Hrs./week)
Marks: 50

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Nuclear Properties: Constituents of nucleus, non-existence of electrons in nucleus, Nuclear mass and binding energy, features of binding energy versus mass number curve, nucleus radius, angular momentum and parity, nuclear moments: magnetic dipole moment and electric quadruple moment, properties of nuclear forces, Yukawa theory.

11 Lectures

SECTION-B

Radioactive Decays: Modes of decay of radioactive nuclides and decay Laws, radioactive series and displacement law, radioactive dating, constituents of Cosmic rays, Alpha decay: Gamow's theory of alpha decay, barrier penetration as applied to alpha decay, Geiger Nuttal law, Beta decays: β-, β+ and electron capture decays, Neutrino hypothesis and its detection, parity violation in β decay, Gamma transitions: Excited levels, isomeric levels, Gamma transitions, internal conversion.

12 Lectures

SECTION-C

Nuclear Reactions: Types of nuclear reactions, reactions cross section, conservation laws, Kinematics of nuclear reaction, examples of nuclear reactions, Q-value and its physical significance, compound nucleus, level width.

11 Lectures

SECTION-D

Nuclear Models: Liquid drop model, semi-empirical mass formula, condition of stability, evidence for nuclear magic numbers, Shell Model, energy level scheme, angular momenta of nuclear ground states, parity and magnetic moment of nuclear ground states.

11 Lectures

TUTORIALS: Relevant problems on the topics covered in the course.

Books Suggested :-

1. Basic Ideas and Concepts in Nuclear Physics: K. Hyde
2. Introduction to Nuclear Physics: H.A. Enge
3. Nuclear Physics: I. Kaplan (Addison Wesley)
4. Nucler and Particles: E. Segre

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Sciences)

SEMESTER–VI

PHYSICS

(PRACTICAL)

Credit: 2
(4 Hrs./week)
Marks: 50

General Guidelines for Practical Examination:

Total Credits: 2 (4 hr/week)

I. The distribution of marks is as follows :
   i) One experiment — **20 Marks**
   ii) Brief Theory — 10 **Marks**
   iii) Viva–Voce — **10 Marks**
   iv) Record (Practical file) — **10 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

List of Experiments

i. To trace the B-H curves for different materials using CRO and find the magnetic parameters from these
ii. To study the stabilization of output voltage of a power supply with Zener diode.
iii. To draw output and mutual characteristics of an FET (Experiments) and determine its parameters.
iv. To set up an oscillator and to study its output on CRO.
v. To draw the plateau of a GM counter and find its dead time.
vi. To study the statistical fluctuations using GM counter.
vii. To study the absorption of beta particles in aluminium using GM counter and determine the absorption coefficient of beta particles from it.
viii. To study the characteristics of a thermistor and find its parameters.
ix. To study the response of RC circuit to various input voltage (square, sine and triangular).

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Political Science

(Credit Based Grading System)

Examinations: 2023–26

GURU NANAK DEV UNIVERSITY AMRITSAR

B.A./B.Sc. (Semester System) (12+3 System of Education) (CBGS) *(Batch 2023-26)*
(Faculty of Arts & Social Sciences)

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B.A./B.Sc. (12+3 System of Education) *(Semester–I) (CBGS) (Batch 2023-26)*
(Faculty of Arts & Social Sciences)

SEMESTER–I

POLITICAL SCIENCE

PRINCIPLES OF POLITICAL SCIENCE

Credits : 4

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Political Science**:** Meaning, Nature and Scope, Traditional & Modern View.
2. Relationship of Political Science with Economics, History, Sociology and Psychology.

SECTION–B

1. State**:** Definition, Elements and its distinction from Government and Society.
2. Theories of the Origin of State**:** Social Contract, Historical/Evolutionary and Marxian Theory.

SECTION–C

1. **State: Marxian Perspective, Gandhian Perspective.**
2. **Nature of State: Welfare State, Developmental State**

SECTION–D

1. Sovereignty: Definition, Attributes and Types of Sovereignty.
2. Theories of Sovereignty**:** Monistic and Pluralistic.
3. **Determinants of Political Participation, Types of Political Representation.**

Recommended Books:-

1. J. C. Johari, *Principles of Political Science,* Sterling Publishers, New Delhi.
2. S.P. Verma, *Political Theory,* Geetanjali Publishing House, New Delhi.
3. A.C. Kapur, *Principles of Political Science*, S. Chand &Company, New Delhi.
4. E. Asirvatham, *Political Theory*, S. Chand & Company, NewDelhi.
5. M.P. Jain, *Political Theory*, Authors Guild Publication, Delhi,(Punjabi & Hindi).
6. David Easton, *The Political System,* Scientific Book Agency, Calcutta.
7. D.C. Bhattacharya, *Political Theory*, Vijay Publishing House, Calcutta.
8. O.P. Gauba, *An Introduction to Political Theory*, MacmillanIndian Ltd., New Delhi.
9. Satish Kumar Sharma, *Adhunik Rajnitik Vishleshan,* Publication Bureau, Punjabi University, Patiala.

10. Andrew Heywood, *An Introduction to Political Theory*, New Delhi, Palgrave Publications, 2004.
11. Aeon J. Skoble and Tibor R. Machan, *Political Philosophy* , Ist Edition, New Delhi, Pearson, 2007.
12. John Hoffman & Paul Graham, *Introduction to Political Theory*, Pearson, 2007.
13. Catriona Mckinnon, *Issues in Political Theory*, Oxford, 2009.
14. R.C Varmani, *Understanding Political Theory: Concepts and Issues*, Gitanjali, 2011.
15. Andrew Heywood, *Key Concepts in Politics*, Palgrave, 2011.
16. ----------,*Politics*, Palgrave,2013.
17. E Asirvatham & K.K Mishra, *Political Theory*, S. Chand, 2012.
18. N.D Arora, *Introduction to Political Theory*, Har-Anand, 2012
19. R.Bhargava, *Political Theory : An introduction*, Pearson ,2013
20. Anthony H.Birchi, *The concepts and Theories of Modern Democracy,* Routledge, 2013
21. Hoveyta Abbas & Ranajay Kumar, *Political Theory*, Pearson, 2012
22. S.P Verma,*Modern Political Theory*, Vikas,2005.
23. David Heft, *Political Theory and the Modern State*, Worldview, 1998

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SEMESTER–II

POLITICAL SCIENCE

MODERN POLITICAL THEORY

Credits : 4

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION–A

1. Political System**:** Meaning, Characteristics and Functions
2. Political Culture**:** Meaning, Characteristics and Types
3. Political Socialisation**:** Meaning, Characteristics and Agencies

SECTION–B

1. Power, Meaning, Nature and Features
2. Authority : Meaning, Nature and Types
3. Legitimacy: Meaning, Nature and Types

SECTION–C

1. Rights and Duties**:** Meaning, Types and Relationship between the Two
2. Liberty: Meaning, Types and its Safeguards
3. Equality: Meaning, Types and Relationship between Liberty and Equality

SECTION–D

1. Justice: Meaning and its various Dimensions
2. Democracy: Meaning, Characteristics and Types
3. Theories of Democracy: Liberal, Marxian and Elitist Theory

Recommended Books:-

1. J. C. Johari, *Principles of Political Science*, Sterling Publishers, New Delhi.
2. S.P. Verma, *Political Theory*, Geetanjali Publishing House, New Delhi.
3. A.C. Kapur, *Principles of Political Science,* S. Chand & Company, New Delhi.
4. E. Ashirvatham, *Political Theory,* S. Chand & Company, New Delhi.
5. M.P. Jain, *Political Theory,* Authors Guild Publication, Delhi, (Punjabi & Hindi).
6. David Easton, *The Political System,* Scientific Book Agency, Calcutta.
7. D.C. Bhattacharya, *Political Theory*, Vijay Publishing House, Calcutta.
8. O.P. Gauba, *An Introduction to Political Theory,* Macmillan Indian Ltd., New Delhi.

9. Satish Kumar Sharma, *Adhunik Rajnitik Vishleshan*, Publication Bureau, Punjabi University, Patiala.
10. John–Hoffman and Paul Graham, *Introduction to Political Theory*, New Delhi, Pearsons, 2006.
11. Andrew Heywood, *An Introduction to Political Theory*, New Delhi, Palgrave Publications.
12. Aeon J. Skoble and Tibor R. Machan, *Political Philosophy*, 1st Edition, New Delhi, Pearson 2007.
13. Catriona Mckinnon, *Issues in Political Theory*, Oxford, 2009
14. R. Bhargava, *Political Theory : An Introduction* , Pearson, 2012
15. N.D Arora, *Introduction to Political Theory*, Har Anand, 2012
16. R.C Vermani, *Understanding Political Theory: Concepts and Issues*, Gitanjali, 2011
17. Anthony H. Birch, *The Concepts and Theories of Modern Democracy*, Routlege, 2013

B.A./B.Sc. (12+3 System of Education) *(Semester–III) (CBGS) (Batch 2023-26)*
(Faculty of Arts & Social Sciences)

SEMESTER–III

POLITICAL SCIENCE

INDIAN CONSTITUTION

Credits : 4

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section - A

1. **Historical Development of Indian Constitution.**
2. Basic features of the Indian Constitution.
3. Preamble and its importance.
4. Nature of Indian Federalism and Centre-State Relations.

Section - B

1. Fundamental Rights, features, kinds and evaluation.
2. Fundamental Duties.
3. Directive Principles of the State Policy.

Section - C

1. Parliament**:** Composition, Powers and Role.
2. President**:** Election, Powers and Position.
3. Indian Cabinet and Prime Minister**:** Election, Powers, Position and Changing Role.
4. Supreme Court and High Court**:** Composition, Powers and Role.

Section - D

1. Governor**:** Appointment, Powers and Role.
2. State Legislature**:** Composition, Powers and Role.
3. Council of Ministers and Chief Minister**:** Election, Powers, Position and Role.

Books Recommended:

1. G. Austin, *The Indian Constitution: Corner Stone of a Nation*, Oxford, Oxford University Press, 1966.
2. G. Austin, *Working of a Democratic Constitution: The Indian Experience*, Oxford University Press, 2000, Delhi.
3. D.D. Basu, *An Introduction to the Constitution of India*, New Delhi, Prentice Hall, 2008.
4. C.P. Bambhri, *The Indian State Fifty Years*, New Delhi, Shipra, 1997.
5. P. Brass, *Politics of India Since Independence*, Hyderabad, Orient Longman, 1990.

6. P. Brass, *Caste, Faction and Parties in Indian Politics,* Vol. II, Delhi, Chanakya Publications 1984-1985.
7. P. Brass, *Ethnic* Groups *and the State,* London, Croom, Helm, 1995.
8. P. Brass, *Language, Religion and Politics in North Indian,* London, Cambridge University Press, 1974.
9. B.L. Fadia, *State Politics in India,* Vol. II, New Delhi, Radiant Publishers, 1984.
10. F.R. Frankel, *India's Political Economy 1947-1977,* The Gradual Revolution, Oxford, Oxford University Press, 1978.
11. R. Kothari, *State against Democracy: In Search of Human Governance,* Delhi, Ajanta, 1988.
12. R. Kothari, *Politics in India,* New Delhi, Orient Longman, 1970.
13. R. Kothari, *Party System and Election Studies*, Bombay, Asia Publishing House, 1967.
14. I. Narain (ed.), *State Politics in India,* Meerut, Meenakshi Parkashan, 1967.
15. M.V. Pylee, *Constitutional Government in India*, Bombay, Asia Publishing House, 1977.
16. M.V. Pylee, *An Introduction to the Consutitution of India,* New Delhi, Vikas, 1998.
17. S.P. Verma and C.P. Bhambari (ed.), *Election and Political Consciousness in India*, Meerut, Meenakshi Parkashan, 1967.
18. B.L. Fadia, *Indian Government and Politics,* Agra, Sahitya Bhavan Publications, 2008.
19. A.S. Narang, *Indian Government and Politics,* New Delhi, Gitanjali, 1999.
20. *Indian Journal of Political Sciences*
21. *Punjab Journal of Politics*
22. Seminar
23. Lloyd I. Rudolph and Susanne Hoeba Rudolph, *Explaining Indian Democracy: A Fifty-Year Perspective, 1956-2006,* Vol. I, II, III, New Delhi, OUP, 2008.
24. Francine Frankel, *India's Political Economy: 1947-2004,* New Delhi, OUP, 2006.
25. Madhav Khosla, *The Indian Constitution*, Oxford, 2012
26. Sudhir Krishnaswamy, *Democracy and Constitutionalism in India : the Study of Basic Structue,* Oxford, 2011
27. P.M Bakshi, *The Constitution of India*, Universal, 2007.
28. J.C Johari, *The Constitution of India*, Sterling, 2007
29. Brij Kishore Shasma, *Introduction to the Constitution of India*, PHI, 2009

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(Faculty of Arts & Social Sciences)

SEMESTER–IV

POLITICAL SCIENCE

INDIAN POLITICAL SYSTEM

Credits : 4

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

1. Nature of Party System in India**:** A Critical Evaluation.
2. National Political Parties (Indian National Congress – BJP, CPI, CPI (M), their organisation, Ideologies and electoral performance.
3. Regional Political Parties (SAD, and DMK,): Their Organisation, Ideologies and Electoral Performance.

SECTION-B

1. The Election Commission**:** Powers, functions, and Electoral Reforms.
2. **Determinants of Voting Behaviour**
3. **Electoral Reforms in India**

SECTION-C

1. **Caste and Religion in Indian Politics.**
2. Regionalism and Indian politics.
3. Emerging trends in Indian Politics.

SECTION-D

1. Basic principles and determinants of Indian Foreign Policy.
2. Policy of Non-alignment and its relevance in contemporary world.
3. **Impact of Globalization on Indian Politics**.

Books Recommended:

1. G. Austin, *The Indian Constitution: Corner Stone of a Nation,* Oxford, Oxford University Press, 1966.
2. G. Austin, *Working of a Democratic Constitution: The Indian Experience*, Oxford University Press, 2000, Delhi.
3. D.D. Basu, *An Introduction to the Constitution of India,* New Delhi, Prentice Hall, 2008.
4. C.P. Bambhari, *The Indian State Fifty Years,* New Delhi, Sipra, 1997.
5. P. Brass, *Politics of India Since Independence*, Hyderabad, Orient Longman, 1990.

6. P. Brass, *Caste, Faction and Parties in Indian Politics*, Vol. II, Delhi, Chanakya Publications 1984-1985.
7. P. Brass, *Ethnic Groups and the State,* London, Croom, Helm, 1995.
8. P. Brass, *Language, Religion and Politics in North Indian,* London, Cambridge University Press, 1974.
9. B.L. Fadia, *State Politics in India,* Vol. II, New Delhi, Radiant Publishers, 1984.
10. F.R. Frankel, *India's Political Economy 1947-1977,* The Gradual Revolution, Oxford, Oxford University Press, 1978.
11. R. Kothari, *State against Democracy: In Search of Human Governance,* Delhi, Ajanta, 1988.
12. R. Kothari, *Politics in India,* New Delhi, Orient Longman, 1970.
13. R. Kothari, *Party System and Election Studies,* Bombay, Asia Publishing House, 1967.
14. I. Narain (ed.), *State Politics in India*, Meerut, Meenakshi Parkashan, 1967.
15. M.V. Pylee, *Constitutional Government in India,* Bombay, Asia Publishing House, 1977.
16. M.V. Pylee, *An Introduction to the Consutitution of India,* New Delhi, Vikas, 1998.
17. S.P. Verma and C.P. Bhambari (ed.), *Election and Political Consciousness in India*, Meerut, Meenakshi Parkashan, 1967.
18. B,L. Fadia, *Indian Government and Politics,* Agra, Sahitya Bhavan Publications, 2008.
19. A.S. Narang, *Indian Government and Politics,* New Delhi, Gitanjali, 1999.
20. Indian Journal of Political Sciences
21. *Punjab Journal of Politics*
22. Seminar
23. Lloyd I. Rudolph and Susanne Hoeba Rudolph, *Explaining Indian Democracy: A Fifty-Year Perspective, 1956-2006,* Vol. I, II, III, New Delhi, OUP, 2008.
24. Francine Frankel, *India's Political Economy: 1947-2004*, New Delhi, OUP, 2006.
25. Zoya Hasan , *Parties and Party Politics in India*, Sage, 2012
26. M. Laxmi Kanth, *Indian Polity,* Tata Mcgraw, 2012
27. V. Krishna Ananth, *India Since Independence: Making Sense of Politics*, Pearson, 2011.
28. Bipin Chandra, *India since Independence,* Benjamin, 2007.

B.A./B.Sc. (12+3 System of Education) *(Semester–V) (CBGS) (Batch 2023-26)*
(Faculty of Arts & Social Sciences)

SEMESTER–V

POLITICAL SCIENCE

COMPARATIVE POLITICAL SYSTEMS (UK & USA)

Credits : 4

Time: 3 Hours **Max Marks: 100**

Instructions for the Paper Setters
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section – A

Theoretical Framework
1. Meaning and Scope of Comparative Government and Politics.
2. Various Approaches to Comparative Politics
3. Systems Approach: David Easton, Almond & Powell.

Section - B

1. Features of British Political System.
2. Features of US Political System.
3. Executive in US: President, Powers, Position and Role,
4. Executive in UK**:** Monarchy, PM, Powers, Positions and Role.

Section - C

1. Legislatures in the US & UK: Functioning and Changing Role**.**
2. Political Parties and Pressure Groups in US and UK.

Section - D

1. Judicial System in USA and UK: Judicial Review in USA and Rule of Law in UK.
2. Federal Features of the Political System of the USA.
3. Unitary Features of the UK's Political System.

Books Recommended:

1. Rod Hague and Martin Harrop, *Comparative Government and Politics,* New Delhi, Palgrave Macmillan, 2007.
2. G.A. Almond, G.B. Powell, K. Strom, R.J. Dalton, *Comparative Politics Today: A World View*, New Delhi, Pearsons, 2006.
3. J.C. Johari, *New Comparative Government,* New Delhi, Lotus Press, 2006, 4263/3, Ansari Road, Daryaganj, New Delhi-110002.
4. A.C Kapur and K.K. Misra, *Selection Constitutions,* New Delhi, S. Chand, 2006 (Sixteenth Revised Edition).

5. A.C. Kapur and K.K. Misra, *Selection Constitutions*, New Delhi, S. Chand, 2006 (Sixteenth Revised Edition).
6. S.N. Ray, *Modern Comparative Politics: Approaches, Methods and Issues*, New Delhi, PHI, 1999.
7. M.V. Pylee, *Select Constitutions of the World*, New Delhi, Universal Law Publishers, 2006 (Revised).
8. Judith Bara And Mark Lennigton, *Comparative Politics*, Sage, 2009
9. William R. Clarks, Matt Golder and Sona Nadenichek, *Principals of Comparative Politics*, CQ Press, 2012
10. December Green and Lenra Luhrmann, *Comparative Politics of the Third World*, Viva 2004
11. Vishnoo Bhagwan and Vidhya Bhushan, *World Constitutions*, Sterling, 2002
12. Daniele Caramani, *Comparative Politics*, Oxford, 2008
13. Vidhya Bhushan, *Comparative Politics*, Atlantic, 2008

B.A./B.Sc. (12+3 System of Education) *(Semester–VI) (CBGS) (Batch 2023-26)*
(Faculty of Arts & Social Sciences)

SEMESTER–VI

POLITICAL SCIENCE

INTERNATIONAL POLITICS: THEORY AND PRACTICE

Credits : 4

Time: 3 Hours **Max Marks: 100**

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

1. Meaning, Nature and Scope of International Politics.
2. Realist Approach to International Politics.
3. Idealist Approach to International Politics

SECTION-B

1. National Power: Its Elements
2. System of Power and Collective Security
3. Cold War and Emerging trends in World order

SECTION-C

a. Emerging world order and Multipolarity
b. Global Environment: Issues and Initiatives
c. International Terrorism : Emergence and Consequences

SECTION-D

1. UNO: Principles, Aims, Objectives and its Functioning
2. Regional Organizations: SAARC and EU.
3. New International Economic Order (NIEO).

Recommended Books:

1. Joshua S. Goldstein, *International Relations,* New Delhi, Pearson Education, 2006.
2. John Baylis and Steve Smith, *Globalization of World Politics,* New Delhi, Oxford University Press, 2005.
3. V.K. Malhotra, *International Relations,* New Delhi, Anmol Publishers Private Ltd., 2004.
4. R.P. Barston, *Modern Diplomacy,* New Delhi, Pearsons, 2006.
5. John Allphin Moore, Jr. and Jerry Pubantz, *The New United Nations, International Organization in the Twenty First Century,* New Delhi, Pearsons, 2008

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8. John Baylis and Sreve Smith, *The Globalizations of World Politics*, Oxford, 2005
9. Pen Ghosh, *International Relations*, PHI 2009
10. Scot. P. Handler, *International Politics*, Sage, 2013
11. Palmer Pertains, *International Relations*, AIIBS, 2005
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14. Leter Calvocoresis, *World Politics (1945-2000)*, Pearson, 2006

SYLLABUS FOR THE BATCH FROM YEAR 2023 TO YEAR 2026

B.A. / B.Sc.

(12+3 SYSTEM OF EDUCATION)

Punjabi (Compulsory)

(Credit Based Grading System)

Examinations: 2023-26

GURU NANAK DEV UNIVERSITY AMRITSAR

INDEX

B.A./B.Sc. (12+3 System of Education) (Semester-I) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

SEMESTER–I
Punjabi (Compulsory)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਕਰੈਡਿਟ 4–0–0

Time: 03 Hours **Max. Marks: 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ - ਏ

ਦੋ ਰੰਗ (ਕਵਿਤਾ ਭਾਗ) (ਸੰਪਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿੱਲੋਂ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਸਰਗੋਧੀਆ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

(ਲੇਖਕ ਦਾ ਜੀਵਨ ਤ ਰਚਨਾ /ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ/ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ)

ਸੈਕਸ਼ਨ - ਬੀ

ਪੰਜਾਬ ਦੇ ਮਹਾਨ ਕਲਾਕਾਰ
(ਸੰਪਾ. ਬਲਵੰਤ ਗਾਰਗੀ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਅੰਮ੍ਰਿਤਾ ਸ਼ੇਰਗਿਲ ਤੋਂ ਭਾਈ ਸਮੁੰਦਰ ਸਿੰਘ ਤਕ)
(ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਸੈਕਸ਼ਨ - ਸੀ

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ
(ਅ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ।

ਸੈਕਸ਼ਨ - ਡੀ

(ੳ) **ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ** : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਵਿਚ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ-ਚਿੰਨ੍ਹ।
(ਅ) **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ**

ਸਹਾਇਕ ਪੁਸਤਕਾਂ:–

1. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਾਵਿ: ਪ੍ਰਮੁੱਖ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਰਾਜਿੰਦਰਪਾਲ ਬਰਾੜ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
3. ਜਸਵਿੰਦਰ ਸਿੰਘ, **ਨਵੀਂ ਪੰਜਾਬੀ ਕਵਿਤਾ: ਪਛਾਣ ਚਿੰਨ੍ਹ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
4. ਧਰਮਪਾਲ ਸਿੰਗਲ, **ਪੰਜਾਬੀ ਜੀਵਨੀ: ਸਰੂਪ ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਜੀਤ ਸਿੰਘ ਸੀਤਲ, **ਵਾਰਤਕ ਤੇ ਵਾਰਤਕ ਸ਼ੈਲੀ**, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ।
6. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਸਰੋਤ ਤੇ ਸਰੂਪ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
7. ਸੁਖਵਿੰਦਰ ਸਿੰਘ ਸੰਘਾ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਗਿਆਨ**, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਕਾਦਮੀ, ਜਲੰਧਰ।
8. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨ ਲਾਲ ਸਿੰਘ, **ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਨ**, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ।
9. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
10. ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ (ਸੰਪਾ.), **ਵੀਹਵੀਂ ਸਦੀ ਦੀ ਪੰਜਾਬੀ ਵਾਰਤਕ**, ਸਾਹਿਤ ਅਕਾਦਮੀ, ਨਵੀਂ ਦਿੱਲੀ।
11. ਮੋਹਨ ਭੰਡਾਰੀ (ਸੰਪਾ.), **ਕਥਾ ਗਾਰਗੀ ਦੀ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।

B.A./B.Sc. (12+3 System of Education) (Semester-II) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

SEMESTER–II
Punjabi (Compulsory)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਕਰੈਡਿਟ 4–0–0

Time: 03 Hours **Max. Marks: 100**
(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ–ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ - ਏ

ਦੋ ਰੰਗ (ਕਹਾਣੀ ਭਾਗ) (ਸੰਪਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿੱਲੋਂ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਸਰਗੋਧੀਆ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ/ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ)

ਸੈਕਸ਼ਨ - ਬੀ

ਪੰਜਾਬ ਦੇ ਮਹਾਨ ਕਲਾਕਾਰ
(ਸੰਪਾ. ਬਲਵੰਤ ਗਾਰਗੀ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਸਤੀਸ਼ ਗੁਜਰਾਲ ਤੋਂ ਸੁਰਿੰਦਰ ਕੌਰ ਤਕ)
(ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਸੈਕਸ਼ਨ - ਸੀ

(ੳ) ਸ਼ਬਦ–ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ–ਰਚਨਾ : ਪਰਿਭਾਸ਼ਾ, ਮੁੱਢਲੇ ਸੰਕਲਪ
(ਅ) ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ : ਨਾਂਵ, ਪੜ੍ਹਨਾਂਵ, ਕਿਰਿਆ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ, ਯੋਜਕ, ਵਿਸਮਕ

ਸੈਕਸ਼ਨ - ਡੀ

(ੳ) ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ
(ਅ) ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਪੰਜਾਬੀ ਕਹਾਣੀ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਤੇ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਬਲਦੇਵ ਸਿੰਘ ਧਾਲੀਵਾਲ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
3. ਸਵਿੰਦਰ ਸਿੰਘ ਉੱਪਲ, **ਪੰਜਾਬੀ ਕਹਾਣੀਕਾਰ**, ਨੈਸ਼ਨਲ ਬੁੱਕ ਸ਼ਾਪ, ਦਿੱਲੀ।
4. ਸਵਿੰਦਰ ਸਿੰਘ ਉੱਪਲ, **ਪੰਜਾਬੀ ਕਹਾਣੀ : ਸਰੂਪ ਤੇ ਸਿਧਾਂਤ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਗੁਰਬਖ਼ਸ਼ ਸਿੰਘ ਫ਼ਰੈਂਕ, **ਨਿੱਕੀ ਕਹਾਣੀ ਅਤੇ ਪੰਜਾਬੀ ਨਿੱਕੀ ਕਹਾਣੀ**, ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਆਪਰੇਟਿਵ ਸੁਸਾਇਟੀ, ਲੁਧਿਆਣਾ।
6. ਧਰਮਪਾਲ ਸਿੰਗਲ, **ਪੰਜਾਬੀ ਜੀਵਨੀ : ਸਰੂਪ ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ (ਜੀਵਨੀ ਨੰ: 10 ਤੋਂ 18)।
7. ਸੁਖਵਿੰਦਰ ਸਿੰਘ ਸੰਘਾ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਗਿਆਨ**, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਕਾਦਮੀ, ਜਲੰਧਰ।
8. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
9. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।
10. ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ (ਸੰਪਾ.), **ਵੀਹਵੀਂ ਸਦੀ ਦੀ ਪੰਜਾਬੀ ਵਾਰਤਕ**, ਸਾਹਿਤ ਅਕਾਦਮੀ, ਨਵੀਂ ਦਿੱਲੀ।
11. ਮੋਹਨ ਭੰਡਾਰੀ (ਸੰਪਾ.), **ਕਥਾ ਗਾਰਗੀ ਦੀ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।

B.A./B.Sc. (12+3 System of Education) (Semester-III) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

SEMESTER–III
PUNJABI (COMPULSORY)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਕਰੈਡਿਟ 4–0–0

Time: 03 Hours **Max. Marks: 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ - ਏ

ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ
(ਸੰਪਾ. ਡਾ. ਰਣਜੀਤ ਸਿੰਘ ਬਾਜਵਾ, ਵੀਰ ਸਿੰਘ ਰੰਧਾਵਾ)
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਲੇਖ ਨੰਬਰ 1 ਤੋਂ 8 ਤਕ)
(ਵਿਸ਼ਾ–ਵਸਤੂ/ਸਾਰ)

ਸੈਕਸ਼ਨ - ਬੀ

ਆਧੁਨਿਕ ਇਕਾਂਗੀ
(ਸੰਪਾ. ਰੌਸ਼ਨ ਲਾਲ ਆਹੂਜਾ, ਮਨਜੀਤ ਪਾਲ ਕੌਰ)
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
ਵਿਸ਼ਾ ਵਸਤੂ/ਪਾਤਰ ਚਿਤਰਨ/ਰੰਗ-ਮੰਚੀ ਪੱਖ

ਸੈਕਸ਼ਨ - ਸੀ

(ੳ) ਸੰਖੇਪ ਰਚਨਾ (ਪ੍ਰੈਸੀ)
(ਅ) ਦਿੱਤੇ ਪੈਰ੍ਹੇ ਵਿਚੋਂ ਅਸ਼ੁੱਧ ਸ਼ਬਦ–ਜੋੜਾਂ ਨੂੰ ਸ਼ੁੱਧ ਕਰਨਾ

ਸੈਕਸ਼ਨ - ਡੀ

ਮੂਲ ਵਿਆਕਰਨਕ ਇਕਾਈਆਂ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵਰਗੀਕਰਨ
(ਭਾਵੰਸ਼, ਸ਼ਬਦ, ਵਾਕੰਸ਼, ਉਪ–ਵਾਕ ਅਤੇ ਵਾਕ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਜੀਤ ਸਿੰਘ ਸੀਤਲ, **ਵਾਰਤਕ ਤੇ ਵਾਰਤਕ ਸ਼ੈਲੀ**, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ।
2. ਗੋਬਿੰਦ ਸਿੰਘ ਲਾਂਬਾ, **ਪੰਜਾਬੀ ਵਾਰਤਕ ਤੇ ਵਾਰਤਕਕਾਰ**, ਅਮਰਜੀਤ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਪਟਿਆਲਾ।
3. ਸਤਿੰਦਰ ਸਿੰਘ ਨੂਰ, **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
4. ਡਾ. ਜਸਵਿੰਦਰ ਸਿੰਘ, ਡਾ. ਮਾਨ ਸਿੰਘ ਢੀਂਡਸਾ, **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਧੁਨਿਕ ਕਾਲ)**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਸਤੀਸ਼ ਕੁਮਾਰ ਵਰਮਾ, **ਪੰਜਾਬੀ ਨਾਟਕ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
6. ਗੁਰਦਿਆਲ ਸਿੰਘ ਫੁੱਲ, **ਪੰਜਾਬੀ ਇਕਾਂਗੀ : ਸਰੂਪ, ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
7. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਪੰਜਾਬੀ ਨਾਟਕ ਤੇ ਇਕਾਂਗੀ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਤੇ ਪ੍ਰਵਿਰਤੀਆਂ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
8. **ਖੋਜ ਪਤ੍ਰਿਕਾ** (ਨਾਟ ਸ਼ੈਲੀਆਂ ਵਿਸ਼ੇਸ਼ ਅੰਕ),
9. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
10. ਹਰਕੀਰਤ ਸਿੰਘ ਤੇ ਗਿਆਨ ਲਾਲ ਸਿੰਘ, **ਕਾਲਜ ਪੰਜਾਬੀ ਵਿਆਕਰਨ**, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ।
11. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

SEMESTER–IV
PUNJABI (COMPULSORY)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਕਰੈਡਿਟ 4–0–0

Time: 03 Hours **Max. Marks: 100**
(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ - ਏ

ਮੇਰੀ ਜੀਵਨ ਗਾਥਾ (ਸਵੈ–ਜੀਵਨੀ): ਡਾ. ਦੀਵਾਨ ਸਿੰਘ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ
(ਨਾਇਕ ਬਿੰਬ/ਸਵੈ ਜੀਵਨੀ ਦੇ ਤੌਰ ਤੇ ਪਰਖ/ਵਾਰਤਕ ਸ਼ੈਲੀ)

ਸੈਕਸ਼ਨ - ਬੀ

ਫ਼ਾਸਲੇ (ਨਾਟਕ): ਜਤਿੰਦਰ ਬਰਾੜ, ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅਮ੍ਰਿਤਸਰ
(ਵਿਸ਼ਾ ਵਸਤੂ /ਸਾਰ/ਨਾਟਕ ਕਲਾ)

ਸੈਕਸ਼ਨ - ਸੀ

(ਓ) ਲੇਖ ਰਚਨਾ (ਸਮਾਜਕ, ਸਭਿਆਚਾਰਕ, ਇਤਿਹਾਸਕ ਅਤੇ ਵਿਦਿਅਕ ਸਰੋਕਾਰਾਂ ਸੰਬੰਧੀ)
(ਅ) ਅਖ਼ਬਾਰ ਨੂੰ ਇਸ਼ਤਿਹਾਰ (ਨਿੱਜੀ, ਦਫ਼ਤਰੀ)

ਸੈਕਸ਼ਨ - ਡੀ

(ਓ) ਦਿੱਤੇ ਪੈਰ੍ਹੇ ਵਿਚੋਂ ਅਸ਼ੁੱਧ ਸ਼ਬਦ-ਜੋੜਾਂ ਨੂੰ ਸ਼ੁੱਧ ਕਰਨਾ
(ਅ) ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀਆਂ ਵਿਸ਼ੇਸਤਾਵਾਂ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਰਾਜਵਿੰਦਰ ਕੌਰ, **ਸਵੈ-ਜੀਵਨੀ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਗੁਰਦਿਆਲ ਸਿੰਘ ਫੁੱਲ, **ਪੰਜਾਬੀ ਨਾਟਕ : ਸਰੂਪ, ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
3. ਸਤੀਸ਼ ਕੁਮਾਰ ਵਰਮਾ, **ਪੰਜਾਬੀ ਨਾਟ-ਮੰਚ ਦਾ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ**, ਨੈਸ਼ਨਲ ਬੁੱਕ ਟਰੱਸਟ, ਇੰਡੀਆ।
4. ਕਮਲੇਸ਼ ਉੱਪਲ, **ਨਾਟਕ ਕਲਾ ਸਰੂਪ ਤੇ ਸਿਧਾਂਤ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਗੁਰਦਿਆਲ ਸਿੰਘ ਫੁੱਲ, **ਪੰਜਾਬੀ ਇਕਾਂਗੀ : ਸਰੂਪ, ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
6. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

B.A./B.Sc. (12+3 System of Education) (Semester-V) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

SEMESTER–V
PUNJABI (COMPULSORY)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਕਰੈਡਿਟ 4–0–0

Time: 03 Hours **Max. Marks: 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ - ਏ

ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ
(ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅਮ੍ਰਿਤਸਰ, 2018)
(ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ/ਕਹਾਣੀ ਕਲਾ)

ਸੈਕਸ਼ਨ - ਬੀ

ਪਵਿੱਤਰ ਪਾਪੀ (ਨਾਵਲ) : ਨਾਨਕ ਸਿੰਘ
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ/ਵਿਸ਼ਾ–ਵਸਤੂ/ਪਾਤਰ–ਚਿਤਰਨ)

ਸੈਕਸ਼ਨ - ਸੀ

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ
(ਅ) ਸਰਲ ਅੰਗਰੇਜ਼ੀ ਪੈਰ੍ਹੇ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ

ਸੈਕਸ਼ਨ - ਡੀ

ਵਿਆਕਰਨ:
(ੳ) ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ
(ਅ) ਵਾਕਾਤਮਕ ਜੁਗਤਾਂ : ਮੇਲ ਤੇ ਅਧਿਕਾਰ
(ਏ) ਕਾਰਕ ਤੇ ਕਾਰਕੀ ਸੰਬੰਧ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਬਲਦੇਵ ਸਿੰਘ ਧਾਲੀਵਾਲ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
2. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ** (ਭੂਮਿਕਾ), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਜੋਰਿੰਦਰ ਸਿੰਘ ਰਾਹੀ, ਰਮਿੰਦਰ ਕੌਰ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਸਫ਼ਰ ਤੇ ਸ਼ਾਸਤ੍ਰ**, ਸਿੰਘ ਬ੍ਰਦਰਜ਼, ਅੰਮ੍ਰਿਤਸਰ (ਭਾਗ ਦੂਜਾ)
4. ਧਰਮਪਾਲ ਸਿੰਗਲ, **ਨਾਨਕ ਸਿੰਘ ਇਕ ਪਰਿਚੈ**, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
5. ਡਾ. ਕੁਲਵੰਤ ਸਿੰਘ ਕੋਹਲੀ, **ਨਾਨਕ ਸਿੰਘ ਦੇ ਨਾਵਲਾਂ ਦਾ ਆਲੋਚਨਾਤਮਕ ਸਰਵੇਖਣ**, ਪੈਪਸੂ ਬੁੱਕ ਡਿਪੂ, ਪਟਿਆਲਾ।
6. ਡਾ. ਬਿਕਰਮ ਸਿੰਘ ਘੁੰਮਣ, **ਨਾਨਕ ਸਿੰਘ : ਜੀਵਨ ਤੇ ਰਚਨਾ**, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
7. ਮਿੰਨੀ ਸਲਵਾਨ**, ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਮੁੱਢਲੇ ਸੰਕਲਪ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
8. ਜਗਜੀਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸ਼੍ਰੇਣੀਆਂ ਤੇ ਇਕਾਈਆਂ**, ਨਿਊ ਬੁੱਕ ਕੰਪਨੀ, ਮਾਈ ਹੀਰਾ ਗੇਟ, ਜਲੰਧਰ।
9. **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

B.A./B.Sc. (12+3 System of Education) (Semester-VI) (CBGS) *(Batch 2023-26)*
(Faculty of Languages)

SEMESTER–VI
PUNJABI (COMPULSORY)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਕਰੈਡਿਟ 4–0–0

Time: 03 Hours **Max. Marks: 100**

(6 ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ)

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ–ਕ੍ਰਮ ਅਤੇ ਪਾਠ–ਪੁਸਤਕਾਂ

ਸੈਕਸ਼ਨ - ਏ

ਕਾਵਿ ਗੌਰਵ (ਪਹਿਲੇ ਛੇ ਕਵੀ)
(ਸੰਪਾ. ਬਿਕਰਮ ਸਿੰਘ ਘੁੰਮਣ, ਕਰਮਜੀਤ ਕੌਰ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅਮ੍ਰਿਤਸਰ,
(ਸ਼ੇਖ ਫਰੀਦ, ਸ਼ਾਹ ਹੁਸੈਨ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ, ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ, ਵਾਰਿਸ ਸ਼ਾਹ, ਸ਼ਾਹ ਮੁਹੰਮਦ)
(ਪ੍ਰਸਗ ਸਹਤ ਵਿਆਖਿਆ/ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ)

ਸੈਕਸ਼ਨ - ਬੀ

ਧਰਤੀਆਂ ਦੇ ਗੀਤ (ਸਫ਼ਰਨਾਮਾ), ਬਰਜਿੰਦਰ ਸਿੰਘ ਹਮਦਰਦ, ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ
(ਲੇਖਕ ਦਾ **ਜੀਵਨ ਤੇ ਰਚਨਾ/ ਸਮਾਜ ਸਭਿਆਚਾਰਕ ਪਰਿਪੇਖ/ਸਫ਼ਰਨਾਮੇ ਦੇ ਤੱਤ ਤੇ ਪਰਖ)**

ਸੈਕਸ਼ਨ - ਸੀ

(ੳ) **ਲੇਖ ਰਚਨਾ** (ਵਿਗਿਆਨ, ਤਕਨਾਲੋਜੀ ਅਤੇ ਚਲੰਤ ਮਸਲਿਆਂ ਸੰਬਧੀ)

(ਅ) ਆਧੁਨਿਕ ਸਾਹਿਤ ਦੇ ਰੂਪ : ਕਵਿਤਾ, ਕਹਾਣੀ, ਨਾਵਲ, ਨਾਟਕ, ਇਕਾਂਗੀ **(ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ)**

ਸੈਕਸ਼ਨ - ਡੀ

ਵਿਆਕਰਨ:

(ੳ) ਵਿਆਕਰਨਕ ਸ਼੍ਰੇਣੀਆਂ : ਲਿੰਗ ਅਤੇ ਵਚਨ

(ਅ) ਨਾਂਵ ਵਾਕੰਸ਼ ਅਤੇ ਕਿਰਿਆ ਵਾਕੰਸ਼ : ਪਰਿਭਾਸ਼ਾ, ਬਣਤਰ ਤੇ ਪ੍ਰਕਾਰ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਸਾਹਿਤ ਦੇ ਰੂਪ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
2. ਜਗਬੀਰ ਸਿੰਘ, **ਗੁਰਮਤਿ ਕਾਵਿ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
3. ਗੁਰਦੇਵ ਸਿੰਘ ਸਿੱਧੂ, **ਸ਼ੁਰੂਈ ਕਾਵਿਧਾਰਾ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
4. ਕਰਨਜੀਤ ਸਿੰਘ, **ਪੁਰਾਤਨ ਪੰਜਾਬੀ ਵਾਰਤਕ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
5. ਡਾ. ਰਛਪਾਲ ਕੌਰ, **ਪੰਜਾਬੀ ਸਫ਼ਰਨਾਮਾ : ਸਰੂਪ ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
6. ਹਰਜਿੰਦਰ ਸਿੰਘ, **ਸਮਕਾਲੀ ਪੰਜਾਬੀ ਸਫ਼ਰਨਾਮਾ : ਵਿਸ਼ਲੇਸ਼ਣ ਤੇ ਮੁਲਾਂਕਣ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।
7. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, **ਸਾਹਿਤ ਸੰਕਲਪ ਕੋਸ਼**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
8. ਜਗਜੀਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸ਼੍ਰੇਣੀਆਂ ਤੇ ਇਕਾਈਆਂ**, ਨਿਊ ਬੁੱਕ ਕੰਪਨੀ, ਜਲੰਧਰ।
9. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ, **ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸਿਧਾਂਤ ਤੇ ਵਿਹਾਰ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ।
10 **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ**, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

SKILL ENHANCEMENT COURSES

SYLLABUS FOR THE

SUBJECT: ECONOMICS

for the award of the Degree in

BACHELOR OF ARTS/ BACHELOR OF SCIENCE/HONOURS

(Offered under 4-year UG Degree Programme)

(Credit Based Grading System)
under NEP 2020

Batch: 2025–29

GURU NANAK DEV UNIVERSITY AMRITSAR

SCHEME

ECONOMICS

SKILL ENHANCEMENT COURSES (SEC)

SEC-I

Sr. No.	Course Code	Course Title	Credits L-T-P	Total Credits	Marks
1.		COMPUTER APPLICATIONS FOR ECONOMISTS-I (THEORY & PRACTICAL)	2-0-1	3	75

SEC-II

Sr. No.	Course Code	Course Title	Credits L-T-P	Total Credits	Marks
1.		COMPUTER APPLICATIONS FOR ECONOMISTS-II (THEORY & PRACTICAL)	2-0-1	3	75

SEC-III

Sr. No.	Course Code	Course Title	Credits L-T-P	Total Credits	Marks
1.		COMPUTER APPLICATIONS FOR ECONOMISTS-III (THEORY & PRACTICAL)	2-0-1	3	75

ECONOMICS
SKILL ENHANCEMENT COURSES
(SEC-I)
COMPUTER APPLICATIONS FOR ECONOMISTS – I
(THEORY & PRACTICAL)

L- T -P
Time: 3 Hours **Credits: 2 - 0 - 1**
Marks: 75
60 Hrs.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Information Concepts and Processing:
Evolution of Information Processing Data Information Language Communication and Network Client Server Systems Computer Networks LAN & WAN

SECTION-B

Internet:
Understanding the Internet
E–mail Basics
Browsing the Web
Finding Stuff on the Web and Net

SECTION-C

Elements of a Computer Processing System
Hardware – CPU
Storage Devices and Media
VDU Input – Output

SECTION-D

Programming Languages
Classification
Machine Code
Assembly Language
Higher Level Languages

** **Note:- 2 Practical Periods will be equivalent to 1 Credit**

Recommended Texts:

1. Fundamentals of Computer by Rajaraman V, Prentice Hall of India, 2014.
2. PC Complete by Sybex 2nd Edition, 2000.
3. Computer Fundamental by S. Jain, S. Singh, BPB Publications, 2017.
4. Introduction to Computer : Fundamentals of Computer Science by N. Subramaniam. Tata McGraw Hill, 2005.
5. Computer Fundamentals by P.K. Sinha and Preeti Sinha, BPB Publications, 2004.
6. Windows based Computer System by Dr. Gurvinder Singh and Rachhpal Singh, Kalyani Publishers, 2018.

ECONOMICS
SKILL ENHANCEMENT COURSES
(SEC-II)
COMPUTER APPLICATIONS FOR ECONOMISTS – II
(THEORY & PRACTICAL)

L- T -P

Time: 3 Hours **Credits: 2 - 0 - 1**

Marks: 75

60 Hrs.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Introduction to windows

a) Parts of Windows Screen (Definition) - The Desktop, the taskbar - Start Menu - The windows – Icons
b) Types of windows - Application Windows - Document Windows
c) Anatomy of a window
- The title bar - Minimize and Maximize buttons
- The control box - Scroll bars, scroll buttons and scroll boxes
- About my computer icon
- About the networking neighbour hood icon
- Recycle bin - Folders
- creation and definition
- Windows explorer (definition)
- Shortcut icons with creation and definition

SECTION-B

Introduction to MS–Office

Introduction to Word (Word for Windows)

1. Introduction to Word
2. Introduction to Parts of a Word Window (Title bar, Menu bar, Tool bar, the Ruler, Status area)
3. Creating new document
4. Opening an existing document
5. To insert a second document into an open document
6. Editing a document
7. Deleting text, replacing text, moving and copying text
8. Page setup
9. Margins and gutters
10. Changing fonts and front size
11. To make text bold, italic or underline
12. Line spacing
13. Centering, right alignment and left alignment
14. Page breaks

SECTION-C

15. Headers and footers
16. Putting page numbers in headers and footers
17. Saving documents - naming word document - saving in different formats - saving on different disks
18. Spell checker

SECTION-D

19. Printing
20. Creating a table using the table menu - entering and editing text in tables - selecting in tables - adding rows - changing row heights - deleting rows - inserting columns - changing columns and cell width
21. Borders and shading
22. Templates and wizards
23. Working the graphics
24. Drawing objects
25. Using frames, position objects
26. Mail merge
27. Using word and word documents with other applications

** **Note:- 2 Practical Periods will be equivalent to 1 Credit**

Recommended Texts:

1. Computer Fundamentals by P.K. Sinha and Preeti Sinha, BPB Publications, 2004.
2. Windows based Computer System by Dr. Gurvinder Singh and Rachhpal Singh, Kalyani Publishers, 2018.

ECONOMICS
SKILL ENHANCEMENT COURSES
(SEC-III)
COMPUTER APPLICATIONS FOR ECONOMISTS – III
(THEORY & PRACTICAL)

L- T -P
Time: 3 Hours **Credits: 2 - 0 - 1**
Marks: 75
60 Hrs.

Instructions for the Paper Setters:-
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Introduction to Database Management System, Components of DBMS, E.R. Diagrams, Data Models, Hierarchical Model, Network Model and Relational Model.

SECTION-B

Concept of Database Security, Protection, Integrity, Recovery, Concurrency. Idea of Distributed Databases, Knowledge Base/Expert Systems ORACLE 10g: SQI. *PLUS Introduction to Oracle 10g SQL– DOL, DML, DCL

SECTION-C

ORACLE 10g: SQI. *PLUS Join methods & Sub query, Union, Intersection, Minus, Tree Walking Built in Functions, Views, Security amongst users, Sequences, Indexing Object Oriented Features of Oracle 10g

SECTION-D

PL/SQL Introduction to PL/SQL Cursors– Implicit & Explicit Procedures, Functions & Packages Database Triggers

** **Note:- 2 Practical Periods will be equivalent to 1 Credit**

Recommended texts:

1. An Introduction to Database Systems by C.J. Date, Pearson, 2016.
2. An Introduction to Database Systems by Bipin C. Desai, Galgotia Publications, 2012.
3. Database System Concepts by Henry F. Korth, McGraw Hill, 2013.
4. SQL, PL/SQL The Programming Language of Oracle by Ivan Bayross, BPB Publications, 2010.
5. SQL, The Complete Reference, by James Groff, McGraw Hill, 2017.