



**Bosco Public School**  
**Sunder Vihar, Paschim Vihar, New**  
**Delhi [www.boscoschool.com](http://www.boscoschool.com)**  
**CLASS XI ARTS**  
**SYLLABUS (2023-24)**



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# ENGLISH

## General Objectives:

- To listen and comprehend live as well as record in writing oral presentations on a variety of topics.
- To develop greater confidence and proficiency in the use of language skills necessary for social and academic purposes.
- To participate in group discussions and interviews by making short oral presentations on given topics.
- To perceive the overall meaning and organization of the text (i.e., the relationships of the different 'chunks' in the text to each other).
- To identify the central/main point and supporting details etc. to build communicative competence in various skills of English.
- To promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities.
- To develop the ability and knowledge required in order to engage in independent reflection and enquiry.
- To familiarize students with the use of basic imagery and figurative language.

## Marks Division

Section	Marks
Reading Comprehension	26
Creative Writing Skills and Grammar	16 + 7
Textbooks and Supplementary Reading Text	31
	<b>80</b>
ASL and Project File	<b>10 + 10</b>
<b>Total</b>	<b>100</b>

## MAY

Reading: Unseen Passage

Writing: Classified Advertisements

Grammar: Integrated Exercises – Reordering Sentences

Literature: Hornbill

- Chapter - 1 The Portrait of a Lady
- A Photograph (Poem)

## JULY

Reading: Unseen Passage

Writing: Speech

Grammar: Integrated Exercises – Reordering Sentences

Literature: Hornbill

- Chapter - 3 Discovering Tut  
Snapshots
- Chapter - 1 The Summer of the Beautiful White Horse

## AUGUST

Reading: Unseen Passage, Note Making & Summary

Writing: Posters

Grammar: Integrated Exercises – Tenses

Literature: Hornbill

- Chapter -7 Adventure
- Chapter -2 We're Not Afraid to Die...
- The Laburnum Top (Poem)

*Assessment of Listening and Speaking Skills*

## **SEPTEMBER**

Revision and Half Yearly Examination

## **OCTOBER**

Reading: Unseen Passage, Note Making & Summary

Writing: Debate

Grammar: Integrated Exercises – Clauses

Literature: Hornbill

- Father to Son (Poem)  
    Snapshots
- Chapter - 5 Mother's Day

## **NOVEMBER**

Reading: Unseen Passage

Writing: Posters (Revision)

Grammar: MCQs on Gap Filling and Transformation of Sentences

Literature: Hornbill

- The Voice of the Rain (Poem)
- Childhood (Poem)

## **DECEMBER**

Reading: Unseen Passage

Writing: Debate (Revision)

Grammar: Integrated Exercises - Transformation of Sentences

Literature: Snapshots

- Chapter -7 Birth  
    Hornbill
- Chapter - 8 Silk Road

## **JANUARY**

Literature: Snapshots

- Chapter - 8 The Tale of Melon City

Revision

*Assessment of Listening and Speaking Skills*

*Project Work*

## **FEBRUARY- MARCH**

Revision and Final Examination

## SYLLABUS FOR EXAMINATION

<b>Unit Test 1</b>	<p><b>Reading:</b> Unseen Passage  <b>Writing:</b> Classified Advertisements  <b>Grammar:</b> Integrated Exercises – Sentence Reordering  <b>Literature:</b></p> <ul style="list-style-type: none"> <li>● Ch- 3 Discovering Tut</li> <li>● Ch -1 The Portrait of a Lady</li> <li>● A Photograph (Poem)</li> </ul>
<b>Half Yearly Examination</b>	<p><b>Reading:</b> Unseen Passage, Note Making &amp; Summary  <b>Writing :</b> Classified Advertisements, Speech, Posters  <b>Grammar: Integrated</b> Exercises - Reordering Sentences, Tenses  <b>Literature:</b>  Hornbill</p> <ul style="list-style-type: none"> <li>● Ch-3 Discovering Tut</li> <li>● Ch-1 The Portrait of a Lady</li> <li>● A Photograph (Poem)</li> <li>● Ch -7 Adventure</li> <li>● Ch -2 We’re Not Afraid to Die...</li> <li>● The Laburnum Top (Poem)</li> </ul> <p>Snapshots</p> <ul style="list-style-type: none"> <li>● Ch- 2 The Address</li> <li>● Ch -1 The Summer of the Beautiful White Horse</li> </ul>
<b>Unit Test 2</b>	<p><b>Reading:</b> Unseen Passage, Note Making and Summarization  <b>Writing :</b> Poster Making , Debate  <b>Grammar:</b> Integrated Exercises - Tenses  <b>Literature:</b></p> <ul style="list-style-type: none"> <li>● Father to Son (Poem)</li> <li>● Ch- 5 Mother’s Day</li> </ul>
<b>Final Term Examination</b>	Complete syllabus

# MATHEMATICS

## General Objectives:

- To acquire a precise knowledge and critical understanding of the basic concepts
- To develop a positive attitude towards thinking
- To articulate and analyze logically.
- To become precise and logical.

## Marks Distribution

S.No	UNITS	MARKS
1	Sets and Function	23
2	Algebra	25
3	Coordinate Geometry	12
4	Calculus	8
5	Statistics and Probability	12
<b>Total</b>		<b>80</b>
<b>Internal Assessment</b>		<b>20</b>

## MAY

### Chapter 1: Sets

Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement

### Chapter 2: Relations and functions

Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto  $\mathbb{R} \times \mathbb{R} \times \mathbb{R}$ ). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.

### Chapter 4: Complex numbers and Quadratic Equations

Need for complex numbers, especially  $i$ , to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane

## JULY

- **Chapter-3: Trigonometric functions**

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity  $\sin^2x + \cos^2x = 1$ , for all  $x$ . Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing  $\sin(x \pm y)$  and  $\cos(x \pm y)$  in terms of  $\sin x$ ,  $\sin y$ ,  $\cos x$  &  $\cos y$  and their simple applications.

- **Chapter 8: Sequence and series**

Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of  $n$  terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

## AUGUST

- **Chapter 8: Sequence and series(Continued)**

Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of  $n$  terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

- **Chapter 9: Straight lines**

Brief recall of two-dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.

## SEPTEMBER

Revision and Half Yearly Examination

## OCTOBER

- **Chapter 13: Statistics**

Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

## NOVEMBER

- **Chapter 5: Linear inequalities**

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.

- **Chapter 6: Permutation and Combination**

Fundamental principle of counting. Factorial  $n$ . ( $n!$ ) Permutations and combinations, derivation of Formulae for  ${}^n P_r$  and  ${}^n C_r$  and their connections, simple applications.

- **Chapter 7: Binomial theorem**

Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.

## DECEMBER

- **Chapter 10: Conic section**  
Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.
- **Chapter 11: Introduction to three-dimensional geometry**  
Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.
- **Chapter 12: Limits and Derivatives**  
Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

## JANUARY

- **Chapter 14: Probability**  
Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.

### Syllabus for Examination

Unit-1	Ch.1.Sets Ch.2 : Relation and Function Ch.3: Trigonometric functions
Half-Yearly Examination	Ch.1: Sets Ch.2: Relation and Function Ch.3 : Trigonometric functions Ch.4: Complex numbers and Quadratic Equations Ch.8: Sequence and series Ch.9 : Straight lines
Unit-2	Ch.6: Permutation and combination Ch.13 : Statistics
Final Examinations	Complete Syllabus

# PSYCHOLOGY

## General Objectives:

- To describe psychology in relation to other disciplines or interdisciplinary fields of study.
- To develop an interest in knowing human behavior, mental processes, and cognitions.
- To acknowledge psychology as a scientific discipline following scientific methods, careful observation, experimentation, and analysis.
- To demonstrate knowledge and understanding in theory and research in learning and cognition, individual differences, biological bases of behavior, and developmental changes; overarching themes in psychology; applications of psychology.
- To acquaint students with empirical knowledge to improve the lives of people.
- To enable the transfer of knowledge from classroom learning and research findings to applied situations.

UNITS	CHAPTERS	MARKS
1	What is Psychology?	11
2	Methods of Enquiry in Psychology	13
4	Human Development	11
5	Sensory, Attentional & Perceptual Processes	8
6	Learning	9
7	Human Memory	8
8	Thinking	5
9	Motivation & Emotion	5
	<b>Total (Theory)</b>	<b>70</b>
	<b>Practical &amp; Project work</b>	<b>30</b>
	<b>Total (Theory + Practical)</b>	<b>100</b>

## MAY

### Unit 1:

#### What is Psychology?

- What is Psychology?
- Psychology as a Discipline
- Psychology as a Natural Science & Social Science
- Understanding Mind and Behavior
- Popular Notions about the Discipline of Psychology
- Evolution of Psychology
- Development of Psychology in India
- Branches of Psychology
- Psychology and Other Disciplines
- Psychology in Everyday Life



## **Unit 2: Methods of enquiry in Psychology**

- Goals of Psychological Enquiry
- Steps in Conducting Scientific Research
- Alternative Paradigms of Research
- Nature of Psychological Data
- Some Important Methods in Psychology- Observational Method, Experimental Method, Correlational Research, Survey Research, Psychological Testing, Case Study
- Analysis of Data- Quantitative Method & Qualitative Method
- Limitations of Psychological Enquiry
- Ethical Issues

## **JULY**

### **Unit 4: Human Development**

- Meaning of Development: Life-Span Perspective on Development
- Factors Influencing Development
- Context of Development
- Overview of Developmental Stages- Prenatal Stage, Infancy, Childhood, Adolescence, Challenges of Adolescence, Adulthood and Old Age

## **AUGUST**

### **Unit 5: Sensory, Attentional and Perceptual Processes**

- Knowing the world
- Nature and varieties of Stimulus
- Sense Modalities
- Functional limitation of sense organs
- Attentional Processes- Selective Attention & Sustained Attention
- Perceptual Processes
- Processing Approaches in Perception- The Perceiver
- Principles of Perceptual Organisation
- Perception of Space, Depth and Distance
- Monocular Cues and Binocular Cues
- Perceptual Constancies
- Illusions
- Socio-Cultural Influences on Perception

## **SEPTEMBER**

Revision and Half-Yearly Examination

## **OCTOBER**

### **Unit 6: Learning**

- Nature & Paradigms of Learning
- Types of Learning- Classical Conditioning (Determinants of Classical Conditioning), Operant/Instrumental Conditioning (Determinants of Operant Conditioning), Observational Learning, Cognitive Learning, Verbal Learning, Skill Learning
- Key Learning Processes
- Factors Facilitating Learning
- Learning Disabilities

## **NOVEMBER**

### **Unit 7: Human Memory**

- Nature of memory
- Information Processing Approach: The Stage Model
- Memory Systems: Sensory, Short-term and Long-term Memories
- Levels of Processing
- Types of Long-term Memory- Declarative and Procedural; Episodic and Semantic
- Nature and Causes of Forgetting- Forgetting due to Trace Decay, Interference and Retrieval Failure
- Enhancing Memory- Mnemonics using Images and Organisation

## **DECEMBER**

### **Unit 8: Thinking**

- Nature of Thinking
- Building Blocks of Thought
- The Processes of Thinking
- Problem Solving
- Reasoning
- Decision-making
- Nature and Process of Creative Thinking
- Nature of Creative Thinking
- Process of Creative Thinking
- Thought and Language
- Development of Language and Language Use

## **JANUARY**

### **Unit 9: Motivation and Emotion**

- Nature of Motivation
- Types of Motives- Biological Motives & Psychosocial Motives

- Maslow's Hierarchy of Needs
- Nature of Emotions
- Expression of Emotions
- Culture and Emotional Expression
- Culture and Emotional Labelling
- Managing Negative Emotions
- Enhancing Positive Emotions

## **FEBRUARY – MARCH**

Revision and Final Examination

### **Practical Marks Distribution-**

Practical (Projects, experiments, small studies, etc.). The students shall be required to undertake one project and conduct two experiments. The project would involve the use of different methods of enquiry like observation, survey, interview, questionnaire, small studies related to the topics covered in the course (e.g., Human development, Learning, Memory, Motivation, Perception, Attention and Thinking). Experiments could focus on cause-and-effect relationships.

Practical Examination File	05 Marks
Project File	05 Marks
Viva Voce (Project and Experiments)	05 Marks
One experiment (05 marks for conduct of experiment and 10 marks for reporting)	15 Marks
<b>Total</b>	<b>30 Marks</b>

### **Syllabus for Examination**

<b>Unit Test - 1</b>	Unit-1 What is Psychology? Unit-2 Methods of Enquiry in Psychology (half unit)
<b>Half-Yearly Exam</b>	Unit-1 What is Psychology? Unit-2 Methods of Enquiry in Psychology Unit-4 Human Development Unit-5 Sensory, Attentional and Perceptual processes
<b>Unit Test - 2</b>	Unit- 6 Learning Unit- 7 Human Memory
<b>Final Exam</b>	Complete syllabus

## POLITICAL SCIENCE

### General Objectives:

- Understand the historical processes and the circumstances in which the Constitution was dated.
- Be familiar with the diverse perspectives that guided the makers of the Indian Constitution.
- Identify key features of the Constitution and compare these to other constitutions in the world.
- Analyse the working of the Constitution in real life.
- Understand different themes and thinkers associated with the real life.
- Develop the skills for logical reasoning.
- Meaningfully participate in the issues and concerns of political life surrounding them.

Units	Part A	Marks
	<b>Indian Constitution at Work</b>	
1	Constitution: Why and How?	08
2	Rights in the Indian Constitution	
3	Election and Representation	06
4	The Legislature	12
5	The Executive	
6	The Judiciary	
7	Federalism	06
8	Local Governments	04
9	Constitution as a Living Document	04
10	The Philosophy of the Constitution	
	<b>Total</b>	<b>40</b>
Units	Part B	
	<b>Political Theory</b>	
11	Political Theory: An Introduction	04
12	Liberty	12
13	Equality	
14	Social Justice	06
15	Rights	04
16	Citizenship	08
17	Nationalism	
18	Secularism	06
	<b>Total</b>	<b>40</b>
<b>Part C</b>	<b>Project Work</b>	20
	<b>Total (A+B+C)</b>	<b>100</b>

## **MAY**

### Part A: Constitution At Work

#### Unit 1: Constitution: Why and How?

- Why do we need constitution?
- The Making of Indian Constitution
- Constituent Assembly and its composition
- Procedural achievements

#### Unit 3: Elections and Representation

- Elections and Democracy
- Election System in India
- Reservation of Constituencies
- Free and Fair Elections
- Electoral Reforms

### Part B: Political Theory

#### Unit 1: Political theory: An Introduction

- What is Politics?
- Why do we need to study Political Theory?
- Putting Political Theory to practice
- Why should we study Political theory?

## **JULY**

### Part A: Constitution At work

#### Unit 2: Rights in the Indian Constitution

- The importance of rights
- Bill of Rights
- b) Fundamental rights in the Indian Constitution
- Right to Equality
- Right to Freedom
- Right against Exploitation
- Right to Freedom of Religion
- Cultural and Educational Rights
- Right to Constitutional Remedies
- Directive principles of State Policy

#### Unit 5: The Legislature

- Why do we need a Parliament?
- Two Houses of Parliament
- Functions and Powers of Parliament
- Legislative Functions
- Control over Executive

## **AUGUST**

### Part B: Political Theory

#### Unit 12: Liberty

- The ideal of freedom

- What is freedom?
- Why do we need constraints?
- Positive and Negative freedom

#### Unit 13: Equality

- Significance of Equality
- What is Equality?
- Various dimensions of Equality
- How can we promote Equality?

#### Unit 15: Rights in the Indian Constitution

- Importance of Rights
- Fundamental Rights
- Directive Principles of State Policy

#### Part A: Constitution At work

##### Unit 6: The Judiciary

- Introduction
- Structure of Judiciary
- Judicial activism
- Judiciary and Rights

## **SEPTEMBER**

Revision and Half-yearly Examination

## **OCTOBER**

#### Part B: Political Theory

##### Unit 14: Social Justice

- What is Justice?
- Just distribution of resources and power
- John Rawl's theory of Justice
- Justice as fairness
- Pursuing Social Justice

#### Part A: Constitution At work

##### Unit 9: Constitution as a Living Document

- Are constitutions static?
- How to amend the constitution?
- Why have there been so many amendments?
- Contents of amendments made so far.
- Differing Interpretations
- Amendments
- Basic structure and evolution of the constitution
- Constitution as a Living Document
- Contribution of the Judiciary
- Maturity of the Political Leadership

## **NOVEMBER**

Part B Political theory

#### Unit 16: Citizenship

- What is citizenship?
- Citizen and Nation
- Universal Citizenship
- Global citizenship

#### Part A Constitution At Work

##### Unit 4: The Executive

- Introduction
- Different types of Executives
- Parliamentary Executives in India
- Permanent Executive

##### Unit 7: Federalism

- What is Federalism?
- Federalism in the Indian Constitution
- Federalism with a strong Central Government
- Conflicts in the India's federal system

### **DECEMBER**

#### Part A: Constitution At Work

##### Unit 10: Philosophy Of The Constitution

- Need for Constituent Assembly
- What is the political philosophy of our constitution?
- Individual freedom
- Social Justice
- Respect for diversity and minority rights

##### Unit 17: Nationalism

- Nation and Nationalism
- National Self-determinism
- Nationalism and Pluralism

### **JANUARY**

#### Part A: Constitution At Work

##### Unit 8: Local Government

- Why do we need local Governments?
- Growth of Local Governments in India
- 73<sup>rd</sup> and 74<sup>th</sup> Amendments

#### Part B: Political Theory

##### Unit 18: Secularism

- What is Secularism?
- Inter-religious Domination
- Intra-religious Domination
- Secular State
- The Western model of Secularism
- The Indian model of Secularism

Project Work and revision.

## **FEBURARY-MARCH**

Revision and Final Examination

### **Syllabus for Examination**

<b>Unit Test – I</b>	Part A Unit-1 Constitution
<b>Half-Yearly Examination</b>	Part A Unit 1 Constitution Unit 2 Rights in the Indian Constitution Unit 3 Election and Representation Unit 5 The Legislature Unit 6 Judiciary  Part B Unit 11 Political Theory: An Introduction Unit 12 Liberty Unit 13 Equality Unit 15 Rights
<b>Unit Test – II</b>	Part A Unit 4 The Executive
Final Examination	Complete syllabus



## ECONOMICS

### General Objectives:

- Understanding of some basic economic concepts and development of economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
- Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
- Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
- Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically with reasoning.

Units	Part A	Marks
	<b>Statistics for Economics</b>	
1	Introduction	
2	Collection, Organization and Presentation of Data	15
3	Statistical Tools and Interpretation	25
	Total	40
Units	Part B	Marks
	<b>Introductory Microeconomics</b>	
4	Introduction	4
5	Consumer's Equilibrium and Demand	14
6	Producer Behaviour and Supply	14
7	Forms of Market and Price Determination under perfect competition with simple applications	8
	Total	40
<b>Part C</b>	<b>Project Work</b>	20
Total(A+B+C)		100

## MAY

Part A: Statistics for Economics

Unit 1: Introduction

What is Economics?

Meaning, scope, functions and importance of statistics in Economics

Unit 2: Collection, Organisation and Presentation of data

Collection of data - sources of data - primary and secondary; how basic data is collected with concepts of Sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.

Organisation of Data: Meaning and types of variables; Frequency Distribution.

Presentation of Data: Tabular Presentation and Diagrammatic Presentation of Data:

(i) Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (histogram, polygon and Ogive) and (iii) Arithmetic line graphs (time series graph).

## **JULY**

Unit 3: Statistical Tools and Interpretation  
Measures of Central Tendency- Arithmetic mean, median and mode

Part B: Introductory Microeconomics

Unit 4: Introduction

Meaning of microeconomics and macroeconomics; positive and normative economics  
What is an economy? Central problems of an economy: what, how and for whom to Produce  
Concept of Production Possibility Frontier and opportunity cost.

## **AUGUST**

Part B: Introductory Microeconomics

Unit 5: Consumer's Equilibrium and Demand

Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.  
Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.  
Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurement of price elasticity of demand – percentage-change method and total expenditure method.

Project Work

## **OCTOBER**

Part A: Statistics for Economics

Unit 3: Statistical Tools and Interpretation

Correlation – meaning and properties, scatter diagram; Measures of correlation - Karl Pearson's method (two variables ungrouped data) Spearman's rank correlation

Project Work

## **NOVEMBER**

Part A: Statistics for Economics

Unit 3: Statistical Tools and Interpretation

Introduction to Index Numbers - meaning, types - wholesale price index, consumer price Index and index of industrial production, uses of index numbers; Inflation and index numbers. Simple Aggregative Method

Part B: Introductory Microeconomics

Unit 6: Producer Behaviour and Supply

Meaning of Production Function – Short-Run and Long-Run Total Product, Average Product and Marginal Product.

Returns to a Factor

Cost: Short run costs - total cost, total fixed cost, total variable cost; Average cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationships.

Revenue - total, average and marginal revenue - meaning and their relationship.

Producer's Equilibrium : meaning and its conditions in terms of marginal revenue and marginal cost.

Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

Project Work

## DECEMBER

Unit 7: Forms of Market and Price Determination under Perfect Competition with simple applications.

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.

Simple Applications of Demand and Supply: Price ceiling, price floor.

Project Work

### Syllabus for Examination

Examination	Topic
<b>Unit Test – 1</b>	Part A – Unit-1 Unit-2 (Collection of Data)
<b>Unit Test – 2</b>	Part B – Unit-6
<b>Half-Yearly Exam</b>	Part A – Unit – 1,2&3 (Measures of Central Tendency) Part B – Unit – 4&5
<b>Final Exam</b>	Complete syllabus

# INFORMATICS PRACTICES

## General Objectives:

- Identify the components of Computer System.
- Create Python programs using different data types, lists and dictionaries.
- Explain database concepts and Relational Database Management Systems.
- Retrieve and manipulate data in RDBMS using Structured Query Language
- Identify the Emerging trends in the fields of Information Technology.

Unit No.	Unit Name	Marks
1	Introduction to Computer System	10
2	Introductory Python Programming	25
3	Database concepts and the Structured Query Language	30
4	Introduction to Emerging Trends	5
	Total	70

## APRIL-MAY

### UNIT 1: Introduction of Computer System

#### Computer System

- Introduction
- Basic Components of Computer System
- Data Representation in Memory
- Input/Output Devices
- Basic operations of Operating System
- Basic concept of Data Representation: Binary, ASCII, Unicode

### UNIT 2: Introductory Python Programming

#### Brief Overview of Python

- Need of Python
- Features of Python
- Downloading and installing Python
- Python- Command line and IDLE
- Programs using Python Script Mode
- Python Character set
- Tokens

## JULY

### UNIT 2: Introductory Python Programming

#### Brief Overview of Python (contd..)

- Python as a calculator
- Stylistic guideline of python scripts
- Variables and Types
- Keywords in Python
- Expressions

- User Input
- Indentation in Python
- Tokens and Comments
- Conditional statements
- Types of loops
- For and while loops
- For loop (range(),else statement and nested loops)

## **PRACTICAL**

Program based on simple input/ output, conditional statements and loops.

## **AUGUST**

Working with List and Dictionary

- Introduction
- Various uses on Lists
- List Functions and Methods
- Traversing a List
- List Methods and Built-in Functions
- Introduction to dictionary
- Various uses on dictionary
- Dictionary function
- Traversing a Dictionary
- Dictionary Methods and Built-in Functions
- Manipulating Dictionaries

## **PRACTICAL:**

Programs based on Python lists and Dictionary.

## **SEPTEMBER**

Revision for Half Yearly Examination

## **OCTOBER**

UNIT 3: Data Management

Database Concepts

- Database Concepts: Introduction to database concepts and its need, Database Management System.
- Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key, foreign key.

## **PRACTICAL**

Programs based on Python dictionaries and basics SQL commands.

## **NOVEMBER**

Introduction to Structured Query language

- Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, Creating a database using MySQL, Data Types.
- Data Definition: Create Table, Drop Table, Alter Table.

**PRACTICAL:**

Working with SQL Commands

**DECEMBER**

Introduction to Structural Query Language (contd.)

- Operators: Distinct, Like, Between and
- Data Query: Select, From, Where. Order By
- Data Manipulation: Insert, Update, Delete

**JANUARY**

UNIT 4: Introduction to the Emerging Trends

- Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR)
- Robotics, Big data and its characteristics, Internet of Things (IoT)
- Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS);
- Grid Computing, Block chain technology.

**PRACTICAL:**

Make a Power Point Presentation on any topic based on Emerging Trends  
Working with SQL Commands

**FEBRUARY-MARCH**

Revision & Final Examination

**Syllabus for Examination**

<b>Unit Test I</b>	Ch 1: Computer System Ch 3: Basic Overview of Python
<b>Half Yearly (Theory)</b>	Ch 1: Computer System Ch 3: Basic Overview of Python Ch 4: Working with List and Dictionary in Python
<b>Unit Test II</b>	Ch 7: Database Concepts Ch 8: Introduction to Structural Query Language
<b>Final Examination (Theory)</b>	Complete Syllabus
<b>Practical (30)</b>	Python programming SQL Commands

# PHYSICAL EDUCATION

## General Objectives:

- Awareness regarding the importance of physical fitness in individual and social life including life skills.
- Bring the overall awareness of values with regards to personal health and fitness and to inculcate among students the desired habit and attitude toward health to raise their health status.
- To make the pupil physically, mentally and emotionally fit and to develop such person and social qualities that will help them to be good human being.
- Individually and collectively to protect and promote (own health) (health of family member) and (health of the surrounding communities and seeking help when required from available community resources.
- To develop interest in exercise sports and games for self-satisfaction and make it a part of a life
- Will an individual to enhance in a qualities self must re discipline courage confidence and efficiency
- To Enable and individual to display a sense of responsibility, patriotism, self-sacrifice and services to the community.

## Marks Distribution (Practical)

S.No.	Practical	Marks
1.	Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)	6
2.	Proficiency in Games and Sports - (Skill of any one IOA recognised Sport/Game of Choice)	7
3.	Yogic Practices	7
4.	Record File	5
5.	Viva Voce (Health/ Games & Sports/ Yoga	5

## MAY

### Unit I Changing Trends & Career in Physical Education

- Concept, Aims & Objectives of Physical Education
- Development of Physical Education in India – Post Independence
- Changing Trends in Sports- playing surface, wearable gears and sports equipment, technological advancements
- Career Options in Physical Education
- Khelo-India and Fit-India Program

## JULY

### Unit II Olympism

- Olympism – Concept and Olympics Values (Excellence, Friendship & Respect)
- Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind

- Ancient and Modern Olympics
- Olympics - Symbols, Motto, Flag, Oath, and Anthem
- Olympic Movement Structure - IOC, NOC, IFS, Other members

### **Unit III Yoga**

- Meaning & Importance of Yoga
- Introduction to Ashtanga Yoga
- Introduction to Yogic Kriyas (Shat Karma)
- Pranayama and its types.
- Active Lifestyle and stress management through Yoga

## **AUGUST**

### **Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang)**

- Concept of Disability and Disorder
- Types of Disability, its causes & nature (Intellectual disability, Physical disability)
- Disability Etiquette
- Aim & Objective of Adaptive Physical Education
- Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

### **Unit V Physical Fitness, Health and Wellness**

- Meaning and Importance of Wellness, Health and Physical Fitness
- Components/Dimensions of Wellness, Health and Physical Fitness
- Traditional Sports & Regional Games for promoting wellness
- Leadership through Physical Activity and Sports

## **SEPTEMBER**

Revision and Half-yearly Examination

## **OCTOBER**

### **Unit VI Test, Measurement & Evaluation**

- Define Test, Measurements and Evaluation.
- Importance of Test, Measurements and Evaluation in Sports.
- Calculation of BMI, Waist – Hip Ratio, Skin fold measurement (3-site)
- Somato Types (Endomorphy, Mesomorphy & Ectomorphy)
- Measurements of health-related fitness

## **NOVEMBER**

### **Unit VII Fundamentals of Anatomy, Physiology in Sports**

- Definition and Importance of Anatomy and Physiology in exercise and sports
- Functions of Skeletal system, classification of bone and types of joints.
- Properties and Functions of Muscles.



- Function and Structure of Circulatory system and heart.
- Function and Structure of Respiratory system.

### **Unit VIII Fundamentals of Kinesiology and Biomechanics in Sports**

- Definition and Importance of Kinesiology and Biomechanics in sports
- Principles of Biomechanics
- Kinetics and Kinematics in Sports
- Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation
- Axis and Planes – Concept and its application in body movements

## **DECEMBER**

### **Unit IX Psychology & Sports**

- Definition & Importance of Psychology in Physical Education & Sports
- Developmental Characteristics at Different Stages of Development
- Adolescent Problems & Their Management
- Team Cohesion and Sports
- Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness

## **JANUARY**

### **Unit X Training and Doping in Sports**

- Concept and Principles of Sports Training
- Training Load: Over Load, Adaptation, and Recovery
- Warming-up & Limbering Down – Types, Method & Importance Concept of Skill,
- Technique, Tactics & Strategies
- Concept of Doping and its disadvantages

## **FEBRUARY – MARCH**

Revision and Final Examination

## **Syllabus for Examination**

<b>Unit Test- I</b>	Unit I Changing Trends & Career in Physical Education Unit II Olympism
<b>Half- Yearly Examination</b>	Unit I Changing Trends & Career in Physical Education Unit II Olympism Unit III Yoga Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang) Unit V Physical Fitness, Health and Wellness
<b>Unit Test- II</b>	Unit VI Test, Measurement & Evaluation Unit VII Fundamentals of Anatomy, Physiology in Sports
<b>Final Examination</b>	Complete Syllabus

## COMMERCIAL ARTS

### General objectives:

- To develop the aesthetic sense of the students through the understanding of various important, well-known aspects and modes of visual art expression in India's rich cultural heritage from the period of Indus Valley to the present time.
- Building a strong foundation on the basics of art and design, including composition, colour theory, typography and layout.
- Building a portfolio of work that showcases versatility, technical proficiency and creativity.
- Exploring and experimenting with different artistic styles and approaches to develop personal artistic voice and style.
- Assist learners to use artistic and aesthetic sensibility in day-to-day life situations.

### Marks Distribution

S.No.	(Theory)	Marks
1.	<b>Prehistoric rock paintings and art of Indus Valley</b>	10
2.	<b>Buddhist, Jain and Hindu Art</b>	10
3.	<b>Temple Sculptures, Bronze and Artistic Aspects of Indo- Islamic architecture</b>	10
	<b>Total</b>	<b>30</b>
	<b>(Practical)</b>	
4.	<b>Drawing</b> <ul style="list-style-type: none"> <li>• Drawing from Still Life and Nature, Medium- Pencil/Monochrome color</li> </ul>	25
5.	<b>Lettering</b> <ul style="list-style-type: none"> <li>• Study of lettering of Roman and Devanagari Scripts</li> <li>• Identification of some typefaces and their sizes</li> </ul> <b>Layout</b> <ul style="list-style-type: none"> <li>• Making simple layouts with lettering as the main component</li> </ul>	25
6.	<b>Portfolio Assessment</b> <ul style="list-style-type: none"> <li>• Record of entire year's performance from sketch to finished product</li> <li>• Four selected drawings in any media done during the course</li> <li>• Two selected works of Illustration, Poster done during the year</li> <li>• Two selected works based on Indian Folk Art</li> </ul>	20
	<b>Total</b>	<b>70</b>
	<b>Total (Theory+Practical)</b>	<b>100</b>

## **MAY**

- **Art- An Introduction**
- **Six Limbs of Indian Art**

### **Unit I Prehistoric Rock Paintings Introduction**

1. Period and Location
2. Study of following prehistoric paintings:-
  - a. Wizard's Dance
  - b. Bhimbetka

### **Practical**

1. Drawing from Still life (Medium- Pencil/ Monochrome color)

## **JULY**

### **Unit II**

#### **Introduction to Indus Valley Art**

1. Period and Location
  2. Extension: In about 1500 miles
- a. Harappa and Mohenjo Daro (Now in Pakistan)
  - b. Ropar, Lothal, Rangpur, Alamgirpur, Kali Bangan, Banawali and Dholavira (In India)

### **Unit III**

**Arts of the Mauryan Period** (Pillars, Sculptures and rock cut architectures, Lion Capital, Sarnath, Didargunj Yakshini)

### **Practical**

1. Drawing from Nature (Medium- Pencil/ Monochrome color)
2. Study of Lettering of Roman Scripts
3. Study of Lettering of Devnagri Scripts

## **AUGUST**

### **Unit IV**

#### **Post Mauryan Trends in Indian Art and Architecture**

1. General Introduction to Bharhut, Sanchi, Mathura, Sarnath and Gandhara schools
2. Buddhist Monuments of South India
3. Cave tradition in Western India
4. Stylistic trends of the sculptures in North India during the 5th and 6th centuries.

### **Unit V**

#### **Later Mural Traditions**

1. Murals under the Pallava, Pandava and Chola Kings
2. Vijayanagara Murals
3. Kerala Murals
4. Features of Badami cave paintings

### **Practical**

1. Layout with lettering

## **SEPTEMBER**

Revision and Half-yearly Examination

## **OCTOBER**

### **Unit VI**

#### **Temple Architecture and Sculpture**

1. Early temples
2. The basic form of hindu temple
3. Sculpture, Iconography and Ornamentation
4. The Nagara or North Indian Temple style
5. Central India, West India, East India temples
6. The Dravida or South Indian Temple style

#### **Practical**

Folk Art Painting

## **NOVEMBER**

### **Unit VI Cont.**

Architecture in Deccan

Buddhist and Jain Architectural Developments

### **Unit VII**

#### **Indian Bronze Sculpture**

1. The Lost Wax Process
2. Nataraja
3. Bronze casting techniques
4. Chola Bronze sculptures

#### **Practical**

1. Identification of some typefaces and their sizes
2. Illustrations (Medium- Watercolors)

## **DECEMBER**

### **Unit VIII**

#### **Some aspects of Indo Islamic Architecture**

1. Typologies of Sculptures
2. Categories of Styles
3. Architectural Influences
4. Decorative Forms
5. Materials for construction
6. Forts, Minars, Tombs, Sarais

#### **Practical**

Poster Design (Medium- Watercolors and Digital)

## JANUARY

1. Study and appreciation of following architectures:
  - a. Qutub Minar, Delhi
  - b. Gol Gumbaz, Bijapur

### Practical

Book Cover Design ( Medium- Watercolors/Poster colors and Digital)  
Advertisement Design (Medium- Watercolors/Poster colors and Digital)

## FEBRUARY – MARCH

Revision and Final Examination

### Practical

Compiling Portfolio

### Syllabus for Examination

<b>Unit Test- I</b>	Unit I a. Art- An Introduction b. Six Limbs of Indian Art c. Prehistoric Rock Paintings  Unit II Arts of Indus Valley
<b>Half- Yearly Examination</b>	Unit I Prehistoric Rock Paintings  Unit II Arts of Indus Valley  Unit III Arts of the Mauryan Period  Unit IV Post- Mauryan Trends in Indian Art and Architecture  Unit V Later Mural Traditions
<b>Unit Test- II</b>	Unit VI Temple Architecture and Sculpture  Unit VII Indian Bronze Sculpture  Unit VIII Some Aspects of Indo- Islamic Architecture
<b>Final Examination (Theory) (30)</b>	Complete Syllabus
<b>Final Examination (Practical) (70)</b>	<b>Drawing from Still Life and Nature</b>  <b>Lettering and Layout</b>  <b>Portfolio Assessment</b>