

BIRLA VIDYAMANDIR, NAINITAL
Syllabus for Annual Examination – 2017
Class – 11

ENGLISH

1. Notice writing
2. Letter to editor writing
3. Article writing
4. Childhood
5. Father To Son
6. The Ailing Planet
7. Discovering Tut: The Saga Continues
8. Albert Einstein At School
9. Birth
10. The Tale Of Melon City
11. The Canterville Ghost

MATHEMATICS

1. Set, Relation and Function
2. Trigonometry
3. Principle of Mathematical Induction
4. Complex Numbers
5. Linear Inequality
6. Permutation and combination
7. Binomial Theorem
8. Sequence and series
9. Straight line
10. Conic section
11. Three dimensional coordinate geometry
12. Limits and derivatives
13. Statistics
14. Probability

PHYSICS

1. Physical world
2. Units and measurements
3. Motion in a straight line
4. Motion in a plane
5. Laws of motion
6. Work, energy and power
7. System of particles and rotational motion
8. Gravitation
9. Mechanical properties of solids
10. Mechanical properties of fluids
11. Thermal properties of matter
12. Thermodynamics
13. Kinetic theory
14. Oscillations
15. Waves

CHEMISTRY

1. Some Basic Concepts of Chemistry
2. Structure of Atom
3. Classification of Elements and Periodicity in Properties
4. Chemical Bonding and Molecular Structure
5. States of Matter : Gases and Liquids
6. Thermodynamics
7. Equilibrium
8. Redox Reactions

9. Hydrogen
10. s- Block Elements
11. Some p- Block Elements
12. Organic Chemistry- Some Basic Principles and Technique
13. Hydrocarbons
14. Environmental Chemistry

BIOLOGY

Unit I: Diversity of Living Organism

1. The living World:

What is living? biodiversity; need for classification; three domains of life; taxonomy & systematics; concept of species and taxonomical hierarchy; binomial nomenclature; tools for study of taxonomy-museums, zoological parks, herbaria, botanical gardens.

2. Biological Classification:

Five kingdom classification; salient features and classification of Monera, Protista and Fungi into major groups: Lichens, Viruses and Vroids.

3. Plant Kingdom:

Salient features and classification of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnosperm and Angiosperm (three to five salient and distinguishing features and at least two examples of each category); Angiosperms - classification up to class, characteristic features and examples.

4. Animal Kingdom:

Salient features and classification of animals non chordates up to phyla level and chordates up to classes level (three to five salient features and at least two examples).

Unit II: Structural Organisation in Animals and Plants

5. Morphology of Flowering Plants:

Morphology and modifications; tissues

6 Anatomy of Flowering Plants:

anatomy and functions of different parts of flowering plants: root, stem, leaf, inflorescence; cymose and racemose, flower, fruit and seed (to be dealt along with the relevant practical of the Practical Syllabus).

7. Structural Organisation in Animals:

Animal tissues; morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach). (a brief account only)

Unit III: Cell Structure and Function

8. Cell-The Unit of Life

Cell theory and cell as the basic unit of life; structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles - structure and function; endomembrane system, endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus, nuclear membrane, chromatin, nucleolus.

9. Biomolecules

Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids, enzymes, types, properties, enzyme action.

10. Cell Cycle and Cell division: cell cycle, mitosis, meiosis and their significance.

Unit IV: Plant Physiology

11. Transport in plants; movement of water, gases and nutrients; cell to cell transport, Diffusion, facilitated diffusion, active transport; plant-water relations, Imbibition, water potential, osmosis, plasmolysis; long distance transport of water - Absorption, apoplast, symplast, transpiration pull, root pressure and guttation; transpiration, opening and closing of stomata; Uptake and translocation of mineral nutrients - Transport of food, phloem transport, mass flow hypothesis; diffusion of gases.

12. Mineral nutrition: Essential minerals, macro and micronutrients and their role; deficiency symptoms; mineral toxicity; elementary idea of hydroponics as a method to study mineral nutrition; nitrogen metabolism, nitrogen cycle, biological nitrogen fixation.

13. Photosynthesis in Higher Plants: photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C₃ and C₄ pathways; factors affecting photosynthesis.

14. Respiration in Plants: exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

15. Plant growth and Development: seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA; seed dormancy; vernalisation; photoperiodism.

Unit V: Human Physiology

16. Digestion and absorption: alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; calorific values of proteins, carbohydrates and fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.

17. Breathing and Exchange of Gases: Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

18. Body fluids and circulation: composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

19. Excretory products and their elimination: modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system - structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uraemia, renal failure, renal calculi, nephritis; dialysis and artificial kidney.

20. Locomotion and movement: types of movement - ciliary, flagellar, muscular; skeletal muscle - contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal system - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

21. Neural control and coordination: neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse; reflex action; sensory perception; sense organs; elementary structure and function of eye and ear.

22. Chemical coordination and Integration: endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads. Mechanism of hormone action (elementary idea); role of hormone as messengers and regulators, hypo and hyperactivity and related disorders; dwarfism, acromegaly; cretinism; goiter; exophthalmic goiter, diabetes, Addison's disease.

INFORMATICS PRACTICES

Unit 1: Introduction To Computer Systems

Hardware Concepts

Computer organization, Input devices, Output Devices, Secondary Storage Devices, Memory Units, Encoding scheme, E-waste disposal.

Security of computer system

Malware, Computer security – digital certificate, digital signature, firewall, password, file access permissions

Types of Software

System Software – Operating systems, Language Processors, Utility Software, Application Software

Unit 2: Introduction To Programming

Getting started with Programming using IDE

RAD using Netbeans IDE

Basic GUI components – Frame, Dialog, OptionPane, Panel, ScrollPane, Label, TextField, TextArea, Button, Checkbox, Radio Button, PasswordField, List, ComboBox.

Basic component handling methods and properties – setText(), getText(), isSelected(), setSelected()

Programming Fundamentals

Data Types, Variables, parse methods, Control Structures - Decision Structures, Looping Structures

Programming Guidelines:

Modular approach, Stylistic Guidelines, Running and debugging programs, Problem Solving Methodology.

Unit 3: Relational Database Management System

Database Management System

Database concepts, Data Types, Keys

SQL Commands

DML - SELECT, INSERT, UPDATE, DELETE; DDL - CREATE, DROP, ALTER; Clauses - USE, DESC, NULL, ALL, DISTINCT, WHERE, ORDER BY, BETWEEN, IN, LIKE; Operators – Arithmetic, Relational, Logical.

MySQL Functions

String Functions, Mathematical Functions, Date & Time Functions.

Unit 4: IT Applications

e-Governance, e-Business, e-Learning, Impact of ICT on society, Infomania

Based on Q. No. 1 to 7 of the Model Question Paper

PHYSICAL EDUCATION

- Unit 1. Changing Trends & Career In Physical Education
- Unit 2. Olympic Movement
- Unit 3. Physical Fitness, Wellness & Lifestyle
- Unit 4. Physical Education & Sports for Differently- Abled
- Unit 5. Yoga
- Unit 6. Physical Activity & Leadership Training
- Unit 7. Test, Measurement & Evaluation
- Unit 8. Fundamentals of Anatomy & Physiology
- Unit 9. Kinesiology, Biomechanics & Sports
- Unit 10. Psychology & Sports
- Unit 11. Training In Sports
- Unit 12. Doping

ACCOUNTANCY

Part A Financial Accounting – I

- 1. Theoretical Framework
- 2. Accounting Process

Part B Financial Accounting – II

- 3. Financial Statements of Sole Proprietorship
- 4. Financial Statements of Non-Profits
- 5. Computers in Accounting

BUSINESS STUDIES

- Unit 1. Nature & Purpose of Business
- Unit 2. Forms of Business Organizations
- Unit 3. Private, Public & Global Enterprises
- Unit 4. Business Services
- Unit 5. Emerging Modes of Business
- Unit 6. Social Responsibility of Business & Business Ethics
- Unit 7. Sources of Business Finance
- Unit 8. Small Business
- Unit 9. Internal Trade
- Unit 10. International Business
- Unit 11. Project Work

ECONOMICS

SECTION 'A'

- Unit 1. Introduction
- Unit 2. Collection, Organisation and Presentation of Data.
- Unit 3. Statistical tools and Interpretation.
- Unit 4. Developing projects in Economics.

SECTION 'B' (Indian Economic Development)

Unit 5. Indian Economy 1950-1990

Unit 6. Economic Reform since 1991.

Unit 7. Liberalisation Privatisation and Globalisation.

Unit 8. Current challenges facing the Indian Economy

(i) Poverty

(ii) Human Capital Formation in India.

(iii) Rural Development.

(iv) Employment: Growth Informalisation and other issues.

(v) Infrastructure.

(vi) Environment and Sustainable Development.

Unit 9. Development Experience of India : A comparison with neighbours.

ENTREPRENEURSHIP

1. Entrepreneurship What. Why and How
2. An Entrepreneur
3. Entrepreneurial Journey
4. Entrepreneurship as Innovation and Problem Solving
5. Understanding the Market
6. Business Arithmetic
7. Resource Mobilization
8. PROJECT WORK