

TRT - 2012
Category of Post: School Assistant - Biological Science - VI -
Special Schools
Syllabus

Part - I

GENERAL KNOWLEDGE AND CURRENT AFFAIRS (Marks: 10)

Part - II

PERSPECTIVES IN EDUCATION (Marks: 10)

1. History of Education : Principles of Education and Special Education and Inclusive Education, Aims and objectives and Functions of Special Education and Inclusive Education, Overview of Commissions - University Education Commission 1948-49, Secondary Education commission 1952-53, Indian Education Commission 1964-66, NPE-1986, POA-1992.
2. Educational Concerns in Contemporary India: Functional Literacy, Continuous and Life long Education, Community based Rehabilitation including Education, Open Learning, Distance Education with reference to General and Special Education and Inclusive Education, Democracy, Socialism and Secularism, Equalization of Education opportunities, Education and human Resource Development, Environmental Education, Liberalization, Privatization and Globalization, Value Education, Sarva Siksha Abhiyan(SSA), National Programme for Education of Girls at Elementary Level (NPEGEL), Mid-day-meals, Rashtriya Madhyamika Siksha Abhiyan(RMSA), Kasturibha Gandhi Balika Vidyalayas (KGBVs) and IEDSS.
3. Emerging Trends in Special and inclusive Education: Concept of impairment, Disability and Types of Disabilities, Concept and Principles of inclusion, Inclusive Education a rights based model, Community linkages and partnership of inclusion, Role of Special Schools and Special Teachers / Educators in facilitating Inclusive Education.
4. Educational Agencies, Acts and Policies: Role of Government agencies in general and Special Education. Such as - NCERT, SCERT, RCI, NCTE, International Organizations, National institutes for handicapped, UN Organizations and International Non - Government Organizations (INGOs) such as UNICEF, UNESCO, WHO, UNDP, Action Aid and CBM, Resource Mobilization through funding agencies and concessions / facilities for the disabled, Right of Children to Free and Compulsory Education Act, 2009, Persons with Disability Act 1995, National Trust Act 1999, Biwako Millennium - Framework and their implications to Special Education, Child Rights, Human Rights.

Part - III

LEARNING STRATEGIES FOR VISUAL IMPAIRED (Marks: 10)

1. Introduction: Anatomy and Physiology of the Eye, Nature of Visual Impairment, Social Disposition to Visual Impairment.

2. Perspective: Historical perspective of education of Visually Impaired Children, Education of Low Vision Children, Curricular Adaptation.
3. Strategies: Need for various approaches in teaching Visually Impaired Children, teaching plus curricular skills, methodology of teaching languages.

Part - IV

CONTENT (Marks: 34)

1. Biological Sciences : Its importance and human welfare, Branches of Biology, Biologists, Reputed Biological Institutions in India
2. Living World : Life and its Characteristics, Classification of Living Organisms
3. Microbial World : Virus, Bacteria, Algae, Fungi and Protozoan, Useful and Harmful Micro-organisms
4. Cell & Tissues : Cell - Structural and Functional unit of life. Prokaryotic and Eukaryotic Cell, Structure of Eukaryotic Cell, Cell Organelles, Differences between Plant Cell and Animal Cell, Cell Division - Mitosis and Meiosis, Tissues - Structure, Functions and Types of Plant and Animal tissues.
5. Plant World : Morphology of a Typical Plant - Root, Stem, Leaf, Flower, Inflorescence, Fruit - their Structure, Types and Functions, Parts of a Flower, Modifications of Root, Stem and Leaf, Photosynthesis, Transpiration, Transportation (Ascent of Sap), Respiration, Excretion and Reproduction in Plants, Plant Hormones, Economic importance of Plants, Wild and Cultivated Plants, Agricultural Operations, Crop diseases and Control measures, Improvement in Crop yield, Storage, Preservation and Protection of Food and Plant Products
6. Animal World :
Organs and Organ Systems including man - Their Structure and Functions Digestive, Respiratory, Circulatory, Excretory, Nervous, Control and Co-ordination and Reproductive, Sense Organs: Structure and Functions of Eye, Ear, Nose, Tongue and Skin. Nutrition in man - Nutrients and their functions, Balanced Diet, Deficiency diseases, Tropical diseases, Skin diseases, Blindness in man: Causes, Prevention and Control, Health agencies, First Aid - Bites: Insect, Scorpion and Snakes, Fractures, Accidents, Life skills, Wild and Domesticated animals, Economic Importance of Animals, Animal Husbandry - Pisciculture, Sericulture, Poultry, Breeding of Cows and Buffaloes
7. Our Environment : Abiotic and Biotic factors and Ecosystems, Natural Resources - Classification, Judicial use of Renewable, Non-renewable and Alternative Resources, Wild Life - Conservation, Sanctuaries, National Parks in India, Bio-Geochemical Cycles, Pollution - Air, Water, Soil and Sound

Global Environmental issues – Global Warming (Green House Effect), Acid Rains and Depletion of Ozone layer

8. World of Energy : Work and Energy, Energy transformation, Need for Energy in living organisms, Basal Metabolic Rate (BMR), Energy relations in Ecosystems, Bio-mass and Bio-fuels, Non-Conventional Energy sources
9. Recent Trends in Biology : Hybridization, Genetic Engineering, Gene Bank, Gene Therapy, Tissue Culture and Bio-Technology

Part - V

Teaching Methodology (Marks: 16)

1. The Nature & Scope of Science: Nature and Scope, Role of biological science in human welfare, biological sciences and environment, Development of scientific attitude – intellectual, utilitarian, Vocational, Moral, Aesthetics, cultural, Disciplinary, Creative, training in scientific method, Utilitarian of Leisure Time, Basic of better living.
2. Objectives of Teaching Biological Sciences: Importance of Objectives of Teaching Biological Sciences, Bloom’s Taxonomy of Educational Objectives and limitations, Writing Instructional Objectives and Specifications
3. Approaches and Methods of Teaching Biological Sciences: Inductive Approach and Deductive Approach, Methods of Teaching 1. Lecture Method, 2. Lecture cum Demonstration Method, 3. Heuristic Method, 4. Project Method, 5. Experimental Method, 6. Laboratory Method, teacher centered, pupil centered approaches to science teaching, Competencies of Biological science teacher.
4. Planning for effective Instruction: Year Plan, Unit Plan, Lesson Plan – Herbartian.
5. Bloom’s Approach, Criteria for Evaluation of Lesson Plan. Self Evaluation and Peer Evaluation, Learning experiences – Characteristics, Classification, Sources and Relevance, Teaching – Learning Material and Resources in Biological Sciences.
6. Science Laboratories: Importance of Practical work in Biological Sciences, Planning Science Laboratory, Procurement, Care and Maintenance of Laboratory Equipment, Maintenance of different Registers, Safety and First aid, Development of Improved Apparatus
7. Science Curriculum: Principles of Curriculum Construction, Defects in the existing School Science Curriculum, Correlation of Biological Sciences with other School Subjects, Qualities of a good Biological Science Text-book.
8. Evaluation: Concept and process of Measurement and Evaluation, Continuous Comprehensive Evaluation, Tools of Evaluation, Preparation of Scholastic Achievement Test(SAT), Analysis and interpretation of scores.