

## Syllabus for written examination for TGT Science, Advt. No. 2/2023

### **1. ENVIRONMENTAL AWARENESS**

**(Weightage 10%)**

**Introduction:** Basics of ecology, eco system- concept, and sustainable development, Sources, advantages, disadvantages of renewable and non-renewable energy, Rain water harvesting, Deforestation – its effects & control measures.

**Air and Noise Pollution:** Air Pollution: Source of air pollution. Effect of air pollution on human health, economy, Air pollution control methods, Noise Pollution: Source of noise pollution, Unit of noise, Effect of noise pollution, Acceptable noise level, Different method of minimizing noise pollution.

**Water and Soil Pollution:** Water Pollution: Impurities in water, Cause of water pollution, Source of water pollution. Effect of water pollution on human health, Concept of DO, BOD, COD. Prevention of water pollution- Water treatment processes, Sewage treatment. Water quality standard, Soil Pollution: Sources of soil pollution, Effects and Control of soil pollution, Types of Solid waste- House hold, Industrial, Agricultural, Biomedical, Disposal of solid waste, Solid waste management E-waste, E – waste management.

**Impact of Energy Usage on Environment:** Global Warming, Green House Effect, Depletion of Ozone Layer, Acid Rain. Eco-friendly Material, Recycling of Material, Concept of Green Buildings, Concept of Carbon Credit & Carbon footprint.

### **2. Haryana General Knowledge and Welfare schemes of Haryana Government.**

**(Weightage 20%)**

Haryana history, current affairs, literature, Geography, Civics, Environment, Culture etc. and Welfare schemes run by state Government of Haryana and provisions there-in.

### **3. Road Safety Awareness**

**(Weightage 5%)**

Traffic Rules, importance of traffic rules, authority to implement traffic rules, punishment for violating traffic rules, authority to issue driving license, procedure to get driving license, classification of vehicles, traffic signs, knowledge of safety measures in vehicles.

### **4. Perspectives on Education and Leadership**

**(Weightage 15%)**

#### **(a) Understanding the Learner**

Concept of growth, maturation and development, principles and debates of development, development tasks and challenges, Domains of Development: Physical, Cognitive, Socio-emotional, Moral etc., deviations in development and its implications, Understanding Adolescence: Needs, challenges and implications for designing institutional support, Role of Primary and Secondary Socialization agencies. Ensuring Home school continuity.

#### **(b) Understanding Teaching Learning**

Theoretical perspectives on Learning -Behaviorism, Cognitivism and Constructivism with special reference to their implications for: (i) The role of teacher (ii) The role of learner (iii) Nature of teacher-student relationship (iv) Choice of teaching methods (v) Classroom environment (vi) Understanding of discipline, power etc.

Factors affecting learning and their implications for: (i) Designing classroom instructions, (ii) Planning student activities and, (iii) Creating learning spaces in school.

Planning and Organization of Teaching-Learning;e-Perspectives in Education, NEP-2020: Early Childhood Care and Education: The Foundation of Learning; Foundational Literacy and Numeracy; Curriculum and Pedagogy in Schools: Holistic & Integrated Learning; Equitable and Inclusive Education: Learning for All; Competency based learning and Education. Guiding Principles for Child Rights, Protecting and provisioning for rights of children to safe and secure school environment, Right of Children to free and

Compulsory Education Act, 2009, Historically studying the National Policies in education with special reference to school education;

School Curriculum Principles: Perspective, Learning and Knowledge, Curricular Areas, School Stages — Pedagogy & Assessment, (i) Concept of Syllabus and Curriculum, Overt and Hidden Curriculum (ii) Foundational Literacy and Numeracy, Early Childhood Care and Education (iii) Competency based Education, Experiential learning, etc. (iv) Instructional Plans: -Year Plan, Unit Plan, Lesson Plan (v) Instructional material and resources (vi) Information and Communication Technology (ICT) for teaching-learning (vii) Assessment of learning, for learning and as learning: Meaning, purpose and considerations in planning each. Enhancing Teaching Learning processes: Classroom Observation and Feedback, Reflections and Dialogues as a means of constructivist teaching.

### **c) Creating Conducive Learning Environment**

The concepts of Diversity, disability and Inclusion, implications of disability as social construct, types of disabilities-their identification and interventions, Concept of School Mental Health, addressing the curative, preventive and promotive dimensions of mental health for all students and staff. Provisioning for guidance and counselling, Developing School, and community as a learning resource.

### **(d) School Organization and Leadership**

Leader as reflective practitioner, team builder, initiator, coach, and mentor, Perspectives on School Leadership: instructional, distributed, and transformative, Vision building, goal setting and creating a School development Plan, Using School Processes and forums for strengthening teaching learning-Annual Calendar, time-tabling, parent teacher forums, school assembly, teacher development forums, using achievement data for improving teaching —learning, School Self-Assessment, and Improvement, Creating partnerships with community, industry and other neighboring schools and Higher Education Institutes — forming learning communities.

### **(e) Perspectives in Education**

NEP-2020: Early Childhood Care and Education: The Foundation of Learning; Foundational Literacy and Numeracy; Curriculum and Pedagogy in Schools: Holistic & Integrated Learning; Equitable and Inclusive Education: Learning for All; Competency based learning and Education, Guiding Principles for Child Rights, Protecting and provisioning for rights of children to safe and secure school environment, Right of Children to free and Compulsory Education Act, 2009, Historically studying the National Policies in education with special reference to school education; School Curriculum Principles: Perspective, Learning and Knowledge, Curricular Areas, School Stages — Pedagogy & Assessment

## **SCIENCE**

**(Weightage 50%)**

### **CHEMISTRY**

#### **Physical chemistry**

1. Atomic structure 2. States of matter 3. Solutions 4. Electro chemistry

#### **Inorganic chemistry**

1. Periodic table and properties 2. Chemical bonding 3. Coordination compound 4. Hydrogen

5. S, P, D, F block elements 6. Environmental chemistry

#### **Organic chemistry**

1. General organic chemistry basic concept 2. Alcohols, phenols, ethers 3. Stereo chemistry of organic compound 4. Aldehydes and ketones 5. Mechanism of organic reactions 6. Functional groups 7. Bio molecules

## **Physics**

1. Motion, force, and work 2. Gravitation 3. Sound 4. Work energy and power 5. Ray and wave optics 6. Current electricity 7. Electronic device 8. Magnetism 9. Units and measurement 10. Source and energy 11. Properties of matter 12. Nuclear physics 13. Modern physics 14. Rotational motion 15. Kinematics 16. Thermodynamics and kinetic theory of gases 17. Oscillations and waves

## **BOTANY**

1. Plant Tissues 2. Improvement in Food Resources 3. Genetics, Heredity & Evolution 4. Plant Reproduction 5. Plant Kingdom 6. Plant Physiology 7. Transport in Plants, Photosynthesis in Higher Plants 8. Plant Growth & Development 9. Morphology of Flowering Plants 10. Anatomy of Flowering Plants 11. Respiration in Plants (Glycolysis, TLA cycle, Electron Transport (system, Respiratory quotient) 12. Plant Growth & Development 13. Plant Regulators 14. Biodiversity & conservation 15. Ecosystem 16. Biotechnology (Principles, Processes & Applications)

## **ZOOLOGY**

1. Environmental Biology 2. Evolution and development Biology 3. Animal Kingdom, Phylum, protozoa to Hemichordate 4. Phylum Euro-chordate, Cephalochordate 5. Life and diversity of Co-orderates 6. Diversity of microbes 7. Genetics 8. Cell Biology 9. Reproduction of organism 10. Human Reproduction 11. Reproduction Health 12. Human Health and diseases 13. Tissue in Animal 14. Digestion and absorption 15. Breathing and Respiration 16. Body Fluid and Circulation 17. Excretory products and elimination 18. Locomotion and movement in human 19. Control and Coordination in human

**Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.**