TELANGANA STATE – SSC (CLASS 10) MODEL PAPER

GENERAL SCIENCE – Model Paper 1

Class X | Physical Science & Biological Science — Time: 1½ Hrs each | Max. Marks: 40 + 40

Instructions: Each paper: Part A 30 marks, Part B 10 marks. Draw neat diagrams where asked.

PAPER I – PHYSICAL SCIENCE (40 marks)

Section I (5 × 2 = 10)

1. Balance the equation: $Fe + H_2O \rightarrow Fe_3O_4 + H_2$
2. Why does the sky appear blue?
3. State Ohm's law.
4. Write two properties of ionic compounds.
5. Define the power of a lens. Give its SI unit.

Section II (3 × 4 = 12)

1. Write four differences between metals and non-metals.
2. Draw a ray diagram for the image formed by a convex lens when the object is placed beyond 2F. State the nature of the image.
3. Three resistors of 2 Ω, 3 Ω and 6 Ω are connected in parallel across a 6 V battery. Find the equivalent resistance and the total current.

Section III (1 × 8 = 8)

1. Explain how atomic size and metallic character vary across a period and down a group in the periodic table, giving reasons.

Part B (10 × 1 = 10)

1. pH of a neutral solution is
   (a) 0 (b) 7 (c) 10 (d) 14
2. Chemical formula of washing soda is
   (a) $Na_2CO_3 \cdot 10H_2O$ (b) $NaHCO_3$ (c) NaCl (d) $CaCO_3$
3. SI unit of resistivity is
   (a) Ω (b) Ω m (c) Ω/m (d) A
4. Lens used to correct myopia is
   (a) convex (b) concave (c) cylindrical (d) bifocal
5. Most reactive metal among Cu, Zn, K, Fe is
   (a) Cu (b) Zn (c) K (d) Fe
6. Colour of light scattered most in the atmosphere is
   (a) red (b) yellow (c) blue (d) orange
7. Gas released when a metal reacts with dilute acid is
   (a) oxygen (b) hydrogen (c) carbon dioxide (d) nitrogen
8. Number of valence electrons in carbon is
   (a) 2 (b) 3 (c) 4 (d) 6
9. Speed of light in vacuum is
   (a) 3×10^6 m/s (b) 3×10^8 m/s (c) 3×10^{10} m/s (d) 300 m/s
10. SI unit of electric power is
    (a) joule (b) volt (c) watt (d) ampere

PAPER II – BIOLOGICAL SCIENCE (40 marks)

Section I (5 × 2 = 10)

1. What is transpiration?
2. Which hormone makes shoots bend towards light?
3. Define reflex action.
4. What are vestigial organs? Give one example.
5. What is a food chain? Give an example.

Section II (3 × 4 = 12)

1. Explain double circulation in human beings.
2. Write four differences between aerobic and anaerobic respiration.
3. A tall pea plant (TT) is crossed with a dwarf plant (tt). Show F_1 and F_2 generations with a Punnett square and give the phenotypic ratio.

Section III (1 × 8 = 8)

1. Describe the structure of a nephron and explain how urine is formed.

Part B (10 × 1 = 10)

1. Photosynthesis takes place in
   (a) mitochondria (b) chloroplast (c) nucleus (d) ribosome
2. Insulin is secreted by the
   (a) liver (b) pancreas (c) kidney (d) stomach
3. Unit of heredity is
   (a) cell (b) gene (c) tissue (d) organ
4. Universal blood donor group is
   (a) A (b) B (c) AB (d) O
5. Functional unit of the kidney is
   (a) neuron (b) nephron (c) alveolus (d) villus
6. Anaerobic respiration in yeast produces
   (a) lactic acid (b) ethanol and CO_2 (c) only water (d) glucose
7. The part of the brain that controls balance is
   (a) cerebrum (b) cerebellum (c) medulla (d) hypothalamus
8. Which is NOT a plant hormone?
   (a) auxin (b) gibberellin (c) insulin (d) cytokinin
9. The ozone layer protects us from
   (a) infrared (b) ultraviolet rays (c) radio waves (d) sound
10. Amoeba reproduces by
    (a) budding (b) spore formation (c) binary fission (d) fragmentation

Answer Key – Part B
Paper I: 1-b 2-a 3-b 4-b 5-c 6-c 7-b 8-c 9-b 10-c
Paper II: 1-b 2-b 3-b 4-d 5-b 6-b 7-b 8-c 9-b 10-c
Hints: PS Q6 – 1Ω, 6 A. BS Q8 – 3 tall : 1 dwarf.

Answer Key – Part B

Original practice paper prepared in the SCERT Telangana SSC pattern. Not an official Board paper.