Class 11 Biology Sample Question Paper – Set 3

TIME ALLOWED **3 Hours** MAXIMUM MARKS **70 Marks**

General Instructions:

1. All questions are compulsory, except internal choices.
2. The paper consists of five sections: A, B, C, D and E.
3. Draw neat and labelled diagrams wherever required.
4. Write answers in clear and scientific language.
5. Marks are indicated against each question.

Section A – Multiple Choice Questions 16 × 1 = 16 Marks

Q1. Which taxonomic category has the highest number of common characteristics among its members?

(a) Class (b) Order (c) Species (d) Kingdom

Q2. Which of the following is a characteristic feature of archaebacteria?

(a) Cellulose cell wall (b) Peptidoglycan cell wall (c) Unique cell wall composition (d) Chloroplast

Q3. Which algae is commonly known as sea lettuce?

(a) Chlamydomonas (b) Ulva (c) Spirogyra (d) Volvox

Q4. Which of the following animals is diploblastic?

(a) Earthworm (b) Hydra (c) Cockroach (d) Starfish

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Q5. The floral formula of a typical Fabaceae flower includes:

(a) Actinomorphic symmetry (b) Zygomorphic symmetry (c) Trimerous flowers (d) Inferior ovary

Q6. Casparian strips are found in:

(a) Epidermis (b) Endodermis (c) Pericycle (d) Cortex

Q7. Which type of muscle is involuntary and striated?

(a) Smooth muscle (b) Skeletal muscle (c) Cardiac muscle (d) Voluntary muscle

Q8. Which organelle contains hydrolytic enzymes?

(a) Lysosome (b) Ribosome (c) Nucleolus (d) Centrosome

Q9. Which of the following is a reducing sugar?

(a) Sucrose (b) Maltose (c) Cellulose (d) Starch

Q10. The separation of homologous chromosomes occurs during:

(a) Anaphase I (b) Anaphase II (c) Metaphase I (d) Telophase II

Q11. The enzyme responsible for carbon fixation in the Calvin cycle is:

(a) PEP carboxylase (b) RuBisCO (c) ATP synthase (d) Amylase

Q12. The respiratory pathway common to both aerobic and anaerobic respiration is:

(a) Krebs cycle (b) Electron transport chain (c) Glycolysis (d) Oxidative phosphorylation

Q13. Which hormone is associated with seed dormancy?

(a) Gibberellin (b) Cytokinin (c) Abscisic acid (d) Auxin

Q14. Which respiratory volume cannot be measured by a simple spirometer?

(a) Tidal volume (b) Inspiratory reserve volume (c) Expiratory reserve volume (d) Residual volume

Q15. Which plasma protein is mainly responsible for maintaining osmotic balance?

(a) Globulin (b) Albumin (c) Fibrinogen (d) Haemoglobin

Q16. Which part of the brain maintains posture and balance?

(a) Cerebrum (b) Cerebellum (c) Hypothalamus (d) Thalamus

Section B – Very Short Answer Questions 5 × 2 = 10 Marks

Q17. What is a taxonomic key? Explain the meaning of couplet and lead.

Q18. Differentiate between heterospory and homospory with one example each.

Q19. What are microtubules? Mention any two functions.

Q20. Define photoperiodism. Name the plant that was used in the classic study of photoperiodism by Garner and Allard.

Q21. What is the Bohr effect? State its importance in oxygen transport.

Section C – Short Answer Questions 7 × 3 = 21 Marks

Q22. Explain the different types of inflorescence with suitable examples.

Q23. Describe the internal structure of a dorsiventral leaf with a neat labelled diagram.

Q24. Explain the structure and functions of the Golgi apparatus.

Q25. Differentiate between mitosis and meiosis on any three points.

Q26. Explain photorespiration. Why is it considered a wasteful process?

Q27. Describe the role of ADH in the regulation of urine formation.

Q28. Explain the functions of thyroid hormones and mention the disorders caused by their deficiency.

Section D – Case-Based Questions 2 × 4 = 8 Marks

Q29. Read the passage and answer the questions.

Plant growth is an irreversible increase in size, mass or volume. It involves cell division, cell enlargement and cell differentiation. Plant growth regulators influence different developmental processes. Auxins promote cell elongation, while gibberellins stimulate stem elongation and seed germination. Abscisic acid generally inhibits growth and promotes dormancy.

(a) Name the plant hormone responsible for apical dominance. (1)

(b) Which hormone promotes seed dormancy? (1)

(c) Name the hormone that promotes cell division. (1)

(d) Which plant hormone is responsible for fruit ripening? (1)

Q30. Read the passage and answer the questions.

The human excretory system consists of a pair of kidneys, ureters, urinary bladder and urethra. Kidneys filter blood and remove nitrogenous wastes. The functional units of kidneys are nephrons. The kidneys also help regulate water balance, electrolyte concentration and blood pH.

(a) What is the functional unit of the kidney? (1)

(b) Name the nitrogenous waste mainly excreted by humans. (1)

(c) Which hormone increases water reabsorption in the kidneys? (1)

(d) Name the structure that carries urine from the kidney to the urinary bladder. (1)

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Section E – Long Answer Questions 3 × 5 = 15 Marks

Q31. Explain the distinguishing characteristics of the five major groups of vertebrates with suitable examples.

OR

Describe the characteristic features and life cycle of a pteridophyte with a suitable diagram.

Q32. Explain the different types of RNA and describe their roles in protein synthesis.

OR

Describe the structure and functions of the nucleus with a neat labelled diagram.

Q33. Explain the mechanism of blood clotting in humans. Mention the role of platelets and clotting factors.

OR

Describe the structure and functions of the human eye. Explain the mechanism of image formation.