

# SENIOR TWO BIOLOGY HOLIDAY PACKAGE

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Time allowed: 3 hours

Total Marks: 100

Instructions: Answer all questions in all three sections.

## SECTION A: Multiple Choice, Matching and Short Answers (55 Marks)

### A1. Multiple Choice Questions (10 × 2 = 20 marks)

1. Which feature is common to all organisms in Phylum Chordata?

- A. Exoskeleton
- B. Compound eyes
- C. Notochord
- D. Wings

2. Which of the following animals undergo external fertilization?

- A. Humans
- B. Frogs
- C. Birds
- D. Lizards

3. Which organelle is responsible for respiration in plant and animal cells?

- A. Nucleus
- B. Chloroplast
- C. Ribosome
- D. Mitochondrion

4. Which test is used to identify proteins in food?

- A. Iodine
- B. Benedict's
- C. Biuret
- D. Sudan III

5. Which of the following is an adaptation of fish to aquatic life?

- A. Hollow bones
- B. Gills
- C. Fur
- D. Dry skin

6. What is the main role of stomata in leaves?

- A. Photosynthesis
- B. Water absorption

- C. Gas exchange
- D. Transport of food

7. Which part of the brain controls involuntary actions like breathing?

- A. Cerebrum
- B. Cerebellum
- C. Medulla oblongata
- D. Hypothalamus

8. What is osmosis?

- A. Movement of solutes from low to high concentration
- B. Diffusion of gases in blood
- C. Movement of water across a selectively permeable membrane
- D. Absorption of nutrients

9. What class does a scorpion belong to?

- A. Insecta
- B. Crustacea
- C. Arachnida
- D. Diplopoda

10. Which is an example of a non-living abiotic factor in an ecosystem?

- A. Bacteria
- B. Fungus
- C. Soil pH
- D. Herbivores

## A2. Matching Items (5 × 2 = 10 marks)

Match the parts of plants to their functions.

Column A		Column B
1. Xylem		A. Transport of water
2. Phloem		B. Photosynthesis
3. Stomata		C. Gas exchange
4. Chloroplast		D. Transport of sugars
5. Root hairs		E. Absorption of water and minerals

## A3. Short Answer Questions (5 × 5 = 25 marks)

1. List five external features used to classify arthropods. (5 marks)
2. Describe five ways in which birds are adapted to flight. (5 marks)
3. State five factors that affect the rate of photosynthesis. (5 marks)
4. Explain five differences between osmosis and diffusion. (5 marks)

5. State the role of each of the following enzymes: amylase, protease, lipase, catalase, and sucrase. (5 marks)

### **SECTION B: Structured Questions (4 × 7.5 = 30 Marks)**

1. (a) Describe the structure and function of the human urinary system.  
(b) State three practices that promote a healthy urinary system. (7.5 marks)
2. (a) With the help of a diagram, describe the internal structure of a leaf.  
(b) Explain how this structure helps in photosynthesis. (7.5 marks)
3. (a) Explain the differences between active transport and passive transport.  
(b) Describe how root hair cells absorb water and minerals from the soil. (7.5 marks)
4. (a) Describe how a fish is adapted to live in water.  
(b) List three features that distinguish fish from amphibians. (7.5 marks)

### **SECTION C: Practical/Application Tasks (15 Marks)**

Answer any two questions from this section. Each question carries 15 marks.

1. You are provided with three food samples A, B and C. Design an experiment to test the presence of starch, reducing sugars and proteins in them. Mention:
  - The reagent used
  - Procedure
  - Expected observation
  - Conclusion(15 marks)
2. Your class is assigned to classify animals found around your school compound. Describe how you would:
  - Collect and handle specimens safely
  - Identify and group the specimens
  - Record and report the observations(15 marks)

**SCIENTIA AD VICENDAS TENEBRAS!!**