



NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Sciences
Department of Pure and Applied Sciences
2021_1 EXAMINATION 1234

COURSE CODE: BIO306

COURSE TITLE: GENERAL PHYSIOLOGY II

CREDIT: 2 units

TIME ALLOWED: 2 Hours

INTRUCTION: Answer question ONE (1) and any other THREE (3) questions

1. a. In a tabular form, mention the excretory organs/structures for each of the following organisms
(i) *Amoeba* (ii) *Sycon* (iii) *Ascaris lumbricoides* (iv) *Periplanata americana* (v) *Taenia* sp **5 Marks**
b. Draw a diagram 6-8 cm of an opened stoma and label fully **6 Marks**
c. Use an arrow ONLY to indicate how water reaches the xylem of plant from the soil. **6 Marks**
d. Explain the mode of circulation of materials in earthworm **5 Marks**
e. State three differences between osmosis and diffusion . **3 Marks**

2. a. Succinctly explain the term Guttation **6 Marks**
b. Highlight five (5) significance of osmosis **5 Marks**
c. Explain how sharks have solved the problem of osmotic pressure **4 Marks**

3. a. Explain the functional characteristics of cerebrum **5 Marks**
b. In a tabular form, mention five (5) differences between transpiration and evaporation **5 Marks**
c. With annotated diagram, explain the mechanism by which NaCl is extruded from Chloride Cells in the marine teleosts. **5 Marks**

4. a. Explain the concept of perception of body balance during motion **5 Marks**
b. List and explain the factors that affect evaporative water loss in terrestrial animals **5 Marks**
c. How did *Tilapia* fish overcome reabsorption challenges? **5 Marks**

5. a. Why are transport system in plants and animals needed? **4 Marks**
b. Enumerte the mode of excretion in a named Protozoa **5 Marks**
c. State and explain the factors that affect the rate of diffusion **6 Marks**