



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**  
**FACULTY OF SCIENCES**  
**DEPARTMENT OF PURE AND APPLIED SCIENCE**  
**OCTOBER/NOVEMBER, 2019 EXAMINATIONS**

**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**

**Question One (25 marks)**

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|--|---------|
| 1. a. Define Osmotic pressure  | 2 Marks |
| b. Write notes on excretory products of plant                                    | 3 Marks |
| c. Osmoregulation is important in the life of an animal. Discuss.                | 4 Marks |
| d. Discuss osmotic responses of freshwater invertebrates                         | 6 Marks |
| e. Highlight the factors affecting evaporative water loss in terrestrial animals | 5 Marks |
| f. Enumerate five significance of osmosis  | 5 Marks |

**Question Two (15 marks)**

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|---|---------|
| 2. a. What is the name and function of the hormone secreted by the placenta of human? | 2 Marks |
| b. State the functions of the trophic hormones  | 5 Marks |
| c. Highlight the significance of diffusion  | 4 Marks |
| d. List four (4) examples each of simple reflex and conditional reflex action.        | 4 Marks |

**Question Three (15 marks)**

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|--|---------|
| 3. a. Give an example of a blood cell                              | 1 Mark  |
| b Briefly enumerate the major components of the circulatory system | 3 Marks |
| c. Describe homeostatic imbalance                                  | 5 Marks |
| d. State the factors that affect the rate of diffusion             | 6 Marks |

**Question Four (15 marks)**

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|---|---------|
| 4. a. Define imbibition   | 1 Mark  |
| b. Outline (4) factors that affect the rate of imbibition                     | 2 Marks |
| c. Highlight any four (4) factors affecting Evaporative Water Loss in Animals | 4 Marks |
| d. Give an account of transport of materials in plants                        | 8 Marks |

**Question Five (15 marks)**

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|----|--|---------|
| 5. | a. Describe the anatomy of root in relation to absorption of water | 6 Marks |
|    | b. Highlight the functions of cerebral cortex                      | 3 Marks |
|    | c. Explain how freshwater fish overcome reabsorption challenges?   | 4 Marks |
|    | d. What are semi-permeable membranes?                              | 2 Marks |