



NATIONAL OPEN UNIVERSITY OF NIGERIA
UNIVERSITY VILLAGE, PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE
EXPRESS WAY, JABI - ABUJA.
FACULTY OF SCIENCE
Department of Biological Sciences
2025_2 EXAMINATIONS

BIO 306: General Physiology

Time: 2 Hours

Credit Units: 2

Instruction: Attempt Three (3) questions only. QUESTION 1 is compulsory.

- 1a. i. What do you understand by Osmoregulation in animals? (4 marks)
ii. Why is osmoregulation necessary in animals? (3 marks)
- b. Explain the following terms:
i. Osmoconformer (5 marks)
ii. Osmoregulators (5 marks)
- c. i. State five factors that influence evaporative water loss in animals (5 marks)
ii. Account for the importance of water in the body (8 marks)

Total Marks = (30 marks)

- 2a. i. What is Excretion? (5 marks)
ii. How do plants carry out excretion? (5 marks)
- b. i. List the types of excretory organs found in arthropods (5 marks)
ii. Describe excretion in protozoans (5 marks)

Total Marks = (20 marks)

- 3a.i. Define the term Nephrogenesis (2 marks)
ii. State three successive phases during the development of Kidney (3 marks)
iii. What is renal capsule in Kidney? (2 marks)
- b. i. Outline the functions of the Kidney (5marks)
ii. Describe how Kidney carries out homoestatic function of acid-base balance (8 marks)

Total Marks = (20 marks)

- 4a.i. Highlight the reasons for the need of transport system in plants and animals. (5 marks)
ii. Describe the mechanism of movement of molecules in cells. (5 marks)
- b. Account for the transportation of water and food molecules in plants. (10 marks)

Total Marks = (20 marks)

- 5a.i. Outline the main functions of the circulatory system in animals. (5 marks)
ii. List the major constituents of the cardiovascular system. (5 marks)
- b. Write short note on;
i. arteries (5 marks)
ii. capillaries (5 marks)

Total Marks = (20 marks)