



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
APRIL/MAY, 2019 EXAMINATIONS

BIO 306 GENERAL PHYSIOLOGY 11- 2 UNITS

INSTRUCTION: ANSWER QUESTIONS 1 AND ANY OTHER THREE.

TIME ALLOWED - 2 HOURS.

- 1 (a) What do you understand by (i) *osmoregulators* (ii) *osmoconformers*? (2 marks)
- (b) On the basis of the kind of nitrogenous waste excreted from the body, explain the different patterns of excretion, giving an example in each case. (15 marks)
- (c) In what ways do terrestrial animals (i) lose and (ii) gain water? (4 marks)
- (d) List the factors affecting the rate of transpiration in plants (4 marks)
2. With the aid of a diagram, describe the structure of the mammalian kidney (15 marks)
- 3 (a) What are the functions of blood? (4 marks)
- (b) Describe the open circulatory system in the grasshopper (11 marks)
- 4 (a) Describe the term 'Plasmolysis,' and illustrate the process using a single plant cell.
(11 marks)
- (b) Of what value is osmosis to plants? (4 marks)
- 5 (a) What is a reflex action? (1 mark)
- (b) Mention the types of reflex action, giving two examples in each case. (6 marks)
- (c) Name three physical processes involved in the movement of molecules in plants. (3 marks)
- (d) Briefly explain how water is transported to the stems and leaves in a plant. (5 marks)