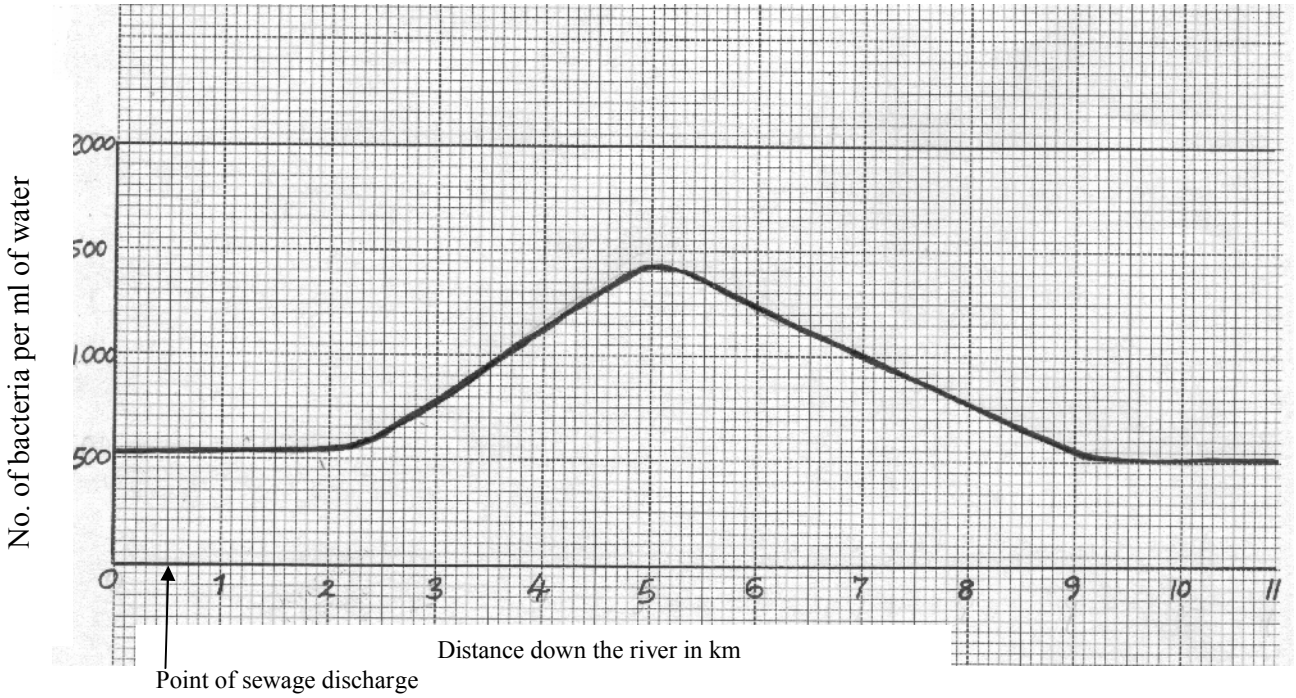
231/1
Paper 1
Answer all the questions in the spaces provided.

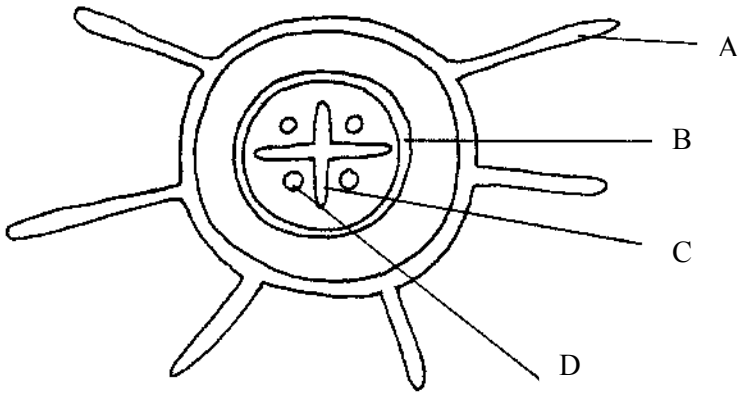
1. What is active transport? (2mks) *BND*
2. What is meant by the terms
   (i) Hypogynous flower (1mk) *BND*
   (ii) Pistillate flower (1mk) *BND*
3. Distinguish between analogous and homologous structures. (2mks) *BND*
4. (a) State the function of co-factors in cell metabolism. (1mk) *BND*
   (b) Give one example of a metallic co-factor. (1mk) *BND*
5. Suggest three measures that can be taken to control infection of man by protozoan parasites. (3mks) *BND*
6. Explain what would happen to onion epidermal cells if they were placed in distilled water. (5mks) *BND*
7. State the characteristics that can separate the following organisms into respective classes – millipedes, Tsetse fly and spider. (3mks) *BND*
8. Which type of a joint is found at the articulation of
   a) Pelvic girdle and femur. (1mk) *BND*
   b) Humerous and ulna (1mk) *BND*
9. Name the blood vessel that transports blood from
   (i) heart to the lungs. (1mk) *BND*
   (ii) Small intestine to the liver (1mk) *BND*
10. State three ways that the tracheole system in insect is adapted for gaseous exchange. (3mks) *BND*
11. a) State the role of light in the process of photosynthesis. (1mk) *BND*
    b) Name one of the end products of dark reaction in photosynthesis. (1mk) *BND*
12. State the role of the following hormones in the human body.
    a) Insulin (1mk) *BND*
    b) Antidiuretic hormone (1mk) *BND*
13. a) What happens to excess fatty acids and glycerol in the body? (2mks) *BND*
    b) State two functions of muscles found in the alimentary canal of mammals. (2mks) *BND*
14. a) Name the tissue that is responsible for secondary thickening in plants. (1mk) *BND*
    b) What is the role of water in a germinating seed? (2mks) *BND*
15. a) State two functions of synovial fluid in a joint in a mammalian skeleton (2mks) *BND*
    b) Name the three types of muscles found in a mammal. (3mks) *BND*
16. What is the function of the following cells in the retina of the human eye? (2mks) *BND*
    a) Cones
    b) Rods
17. Name three types of chromosomal mutations. (3mks) *BND*

18. The graph below shows the effects of sewage on the population of a species of bacteria in a certain river.



Account for the changes in population of bacteria between 2 and 10 Kilometres down the river. (2mks) *BND*

19. Explain how tendrils of climbing plants coil around a support (3mks) *BND*
20. Name the spore producing structures in
    a) Bryophytes. (1mk) *BND*
    b) Pteridophytes (1mk) *BND*
21. a) During which phase of meiosis does crossing over occur. (1mk) *BND*
    b) How do identical and fraternal twins arise? (4mks) *BND*
    (i) Identical twins
    (ii) Fraternal twins
22. a) Account for the loss in dry weight of cotyledons in a germinating bean seed. (1mk) *BND*
    b) State three effects of gibberellins on shoots of plants. (3mks) *BND*
23. Which one of the cell organelles would be more numerous in;
    a) An enzyme secreting cell. (1mk) *BND*
    b) A rapidly respiring cell in comparison to other cells in the same organism? (1mk) *BND*
24. The figure below represents a transverse section of a young root.



a) Identify parts labelled A and B. (2mks) *BND*

b) State the function of the parts labelled A, C and D. (3mks) *BND*

25. Give reasons for each of the following;
    a) Constant body temperature maintained in mammals. (3mks) *BND*
    b) Low blood sugar level is harmful to the body. (3mks) *BND*
26. State two ways by which leaves of plants are adapted to gaseous exchange. (2mks) *BND*
27. Other than Energy,, name the other products of anaerobic respiration in plants. (2mks) *BND*

END