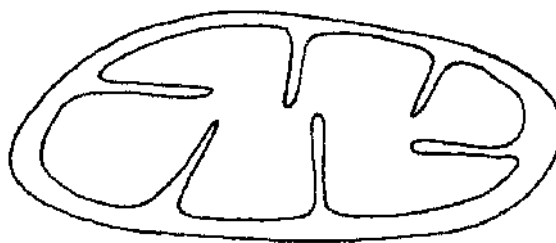


BIOLOGY

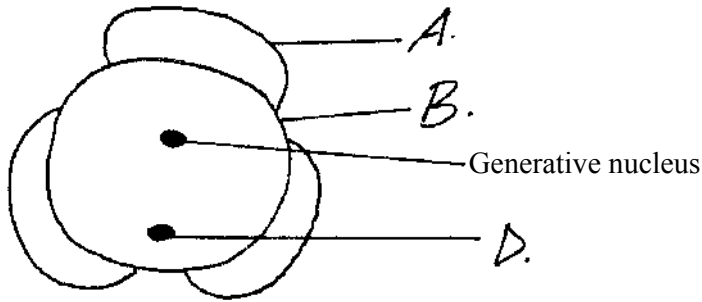
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1. List any two distinguishing features of class Arachnida. 2mks
2. a) What is the importance of Adenosine triphosphate (ATP) in mammals. 1mk
 b) State 2 functions of respiratory Quotient (R.Q) 2mks
3. List 2 differences between dicotyledon stem and dicotyledon root 2mks
4. Sometimes back, Quinine was an effective drug in malaria treatment. Recently and currently quinine drug has been established to be ineffective in treatment of malaria.
 - i) Name the protozoa which causes malaria 1mk
 - ii) Name the biological process which occurred to the protozoa named in (i) above to become ineffective in malaria treatment. 1mk
 - (iii) What is the resultant effect of the biological process named in (i) above after long period of time. 2mks
5. a) State two ways by which plants remove their waste products 2mks
 b) What causes accumulation of lactic acid involved in vigorous exercises. 2mks
6. a)(i) Name the hormone responsible for moulting in insects. 1mk
 (ii) Where is the hormone named in (i) above secreted. 1mk
 b) Explain why Iodine is necessary for complete development of tadpole into adult 1mk
7. In an experiment, it was found that when maggots are exposed to light, they move to dark areas.
 - (i) Name the type of response. 1mk
 - (ii) Give the advantages of this type of response 2mks
8. a) Name the class of food that provides energy to the body under extreme starvation 1mk
 b) What is the function of the following parts in the mammalian stomach.
 - (i) Goblet cells 1mk
 - (ii) Chief (peptic) cells 1mk
9. Give two functions of vacuole 2mks
10. Give the function for the following process when preparing temporary slides. 2mks
 - i) Sectioning
 - ii) Fixation
11. Name any two types of Polysaccharides found in plants. 2mks
12. In what ways has man contributed to faster growth of water plants. 2mks
13. State the effect of chlorofluoro carbons (CFCs) in the atmosphere. 2mks
14. a) Why is the mammalian trachea have it's cartilage rings being incomplete or 'C' shaped. 1mk
 b) List the surfaces used for gaseous exchange in amphibians. 3mks
15. (a) Name the part of female reproductive system where fertilization occur. 1mk
 b) State how male sex cells (sperm cells) are adapted tot their function.
 c) What is the role of sertoli cells. 1mk
16. a) Identify the organelle below



- 1mk
- b) How is it adapted to its function. 2mks
17. Give two function of exoskeleton found in insects. 2mks
18. Name four environmental causes of mutation. 2mks
19. The 'dolf' is an offspring from a dog and a wolf. This animal is however infertile. Give a reason for this infertility. 1mk

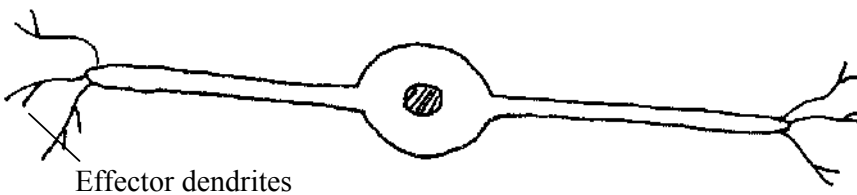
20. Name the type of joints found at the articulation of the following bones. 1mk
 a) Pelvic girdle and femur. 1mk
 b) Humerus and the ulna 1mk
21. a) What are the main end product of photosynthesis. 2mks
 b) What raw material are required in dark stage of photosynthesis. 2mks
22. Identify parts of the flower where meiosis takes place. 2mks
23. The diagram below shows a pollen grain. Study and answer the question that follows.



- a) Label parts A and B 2mks
 b) What is the function of parts labeled D 1mk
24. The table below shows blood composition of Hirji, Rose and Okumu

Person	Hirji	Rose	Okumu
Red blood cells (mm ³)	7,900	6,000	2,100
White blood cells (mm ³)	60	7,000	6,000
Platelets	260,000	270,000	600

- a) Which person is likely to live at high altitudes 1mk
 Reason 1mk
- b) Which person's blood is likely to have an iron deficiency in his diet. 1mk
 Reason 1mk
25. Explain the effect of an enzyme inhibitor e.g. cyanide in the translocation of manufactured food from the leaves to other parts of the plant. 2mks
26. a) What is nitrogen fixation. 1mk
 b) In what form do plants take up nitrogen. 1mk
27. What is the function of Eustachian tube that links the middle ear with the throat. 1mk
28. Name the part of the renal tubule where
 (i) Glucose and amino acids are reabsorbed. 1mk
 (ii) Sodium ions are reabsorbed. 1mk
 (iii) State one structural modification of nephrons found in desert animals. 1mk
29. a) Identify the type of neuron drawn below



- 1mk
 b) State the function of the neuron named above. 1mk
 c) Using an arrow on the diagram show the direction of movement of nerve impulse 1mk
30. List 2 factors affecting osmosis. 2mks
31. Give the name of photochemical pigment present in Rods. 1mk