9.0 BIOLOGY (231)

9.1 Biology Paper 1 (231/1)

1. (i) Nephritis; (ii) kidney stones; (2 marks)

2. (a) $i\frac{2}{2}$ $c\frac{1}{1}$ $pm\frac{2}{2}$ $m\frac{3}{3}$; (1 mark)

   (b) Dental carries;
   Periodontal/gingivitis/pyorhoea; (2 marks)

3. (i) Identify similarities and differences between organisms;
   (ii) Organize scientific knowledge in an orderly system;
   (iii) Monitor emergence, presence and disappearance of organisms in and from the earth;
   (iv) Grouping organisms for easy study;
   (3 marks)

4. (a) Sucking small insects/animals; (1 mark)
   (b) A trap into which small animals fall and get trapped; (1 mark)

5. (a) Grass ⟶ Grasshopper ⟶ Lizards; (1 mark)

   (b) (i) Chicken;
   (ii) Grass; (2 marks)

6. (a) This is the study of the inter-relationship between organisms and their environment; (1 mark)

   (b) The maximum population of a species than a particular habitat can support; without depletion of resources. (1 mark)

7. Water was hypotonic to cell sap of adjacent cells;
   and these cells absorbed water through osmosis;
   and their cell sap became less concentrated than those of the next cells;
   The process was repeated until water reached the sugar solution; (4 mark)

8. Fused head and thorax/cephalothorax often protected by a carapace;
   Gaseous exchange through gills;
   Two pairs of antennae;
   Five to twenty pairs of limbs;
   A pair of compound eyes;
   Three pairs of mouth parts (consisting of mandibles, maxillary, palp and labium) a pair of mandibles and 2 pairs of maxillae.
   First 3 (3 marks)

9. (a) Dicotyledonae; (1 mark)
   (b) Monocotyledonae; (1 mark)

10. (a) (i) Lactic acid in animals while in plants it is ethanol/alcohol;
(ii) No carbon IV oxide produced in anaerobic respiration in animals while anaerobic respiration in plants produces carbon IV oxide; (2 marks)

(b) Cytoplasm; (1 mark)

11. Moves the body tube through smaller distances to bring the image/specimen/object into sharper focus;
Platform where specimen (on slide) is placed; (2 marks)

12. Chordata; Aves; (2 marks)

13. Source of energy; Storage materials; (2 marks)

14. (a) Dry/Arid/Semi-arid/Desert; (1 mark)
(b) Succulent/fleshy stem; reduced leaves/
leaves reduced into thorns/leaves modified into spines/spikes; (2 marks)

15. (a) To reduce layers of cells to allow light to pass through; (1 mark)
(b) To make the cells turgid/prevent drying up; (1 mark)
(c) To protect the lens on the objective; (1 mark)

16. (a) Weakened/defective valves in veins; causing blood/body fluid to accumulate; leading to swelling. (2 marks)
(b) When exposed to air they disintegrate/rupture/burst; releasing thromboplastin; thrombokinase (2 marks)

17. (a) L - Duodenum;
M - Pancreas; (2 marks)

(b) (i) Bile;
(ii) Emulsification/emulsifies fats;
(iii) Provides alkalinic medium for enzyme action.
(iv) Neutralizes acidic chyme. (2 marks)

18. (a) Sublingual gland; submaxillary gland; parotid gland; submandibular
First one (1 mark)
(b) Lubricating food; digestion of starch; moisten food; provide alkaline medium;
First two (2 marks)

19. (a) (i) Skin; (ii) buccal cavity/mouth cavity (2 marks)
(b) Glucose + Oxygen $\xrightarrow{\text{(enzyme)}}$ Carbon IV oxide + water + energy;

$C_6H_{12}O6 + 6O_2 \xrightarrow{\text{(enzyme)}} 6CO_2 + 6H_2O + ATP$ (1 mark)

20. (a) X; (1 mark)
(b) X has fewer stomata; most stomata in leaf X are concentrated on the lower side;
Any one (1 mark)

21. (a) Where different structures evolve to perform the same function (e.g. wings of insects and birds are different in structure but are used for flying);
(1 mark)

(b) Missing links;
Distortion of parts during sedimentation/earthquakes/putrefication;
Destruction of fossils by geological activities/faulting/folding;
First two (2 marks)

22. Air that enters lungs has a higher content of oxygen than air that leaves the lungs;
Air that enters the lungs has lower content of carbon (IV) oxide than air that leaves the lungs;
(2 marks)

23. (a) (i) Ovule; (1 mark)
(ii) Axile placentation; (1 mark)

(b) Orange or any correctly named citrus plant; (1 mark)

24. (a) (i) Dominant gene expresses itself phenotypically in both its homozygous and heterozygous states while recessive gene can only express itself phenotypically in the homozygous state; (1 mark)
(ii) Continuous variation is a characteristic for which there is a continuum or range while discontinuous variation is a characteristic for which there are discrete categories or units; (1 mark)

(b) Either all offspring show the dominant characteristics;
or half offspring show the recessive while the other half show the dominant characteristics; (2 marks)

25. (a) Softening of leather; (1 mark)
(b) Treatment of malaria/manufacture of antimalaria drugs.; (1 mark)
(c) Stimulant used in beverages; (1 mark)

26. egg/ovum/ova; (1 mark)

27. (a) Ligament; (1 mark)
(b) Secretes synovial fluid; contains/holds the synovial fluid in place;
any one (1 mark)

28. (a) It is a growth movement in plants in response to a unidirectional stimulus;
(1 mark)

(b) Accelerates growth of shoots;
Can inhibit growth of roots;
(2 marks)

29. Activate enzymes; provides a medium for enzymatic activities to break down stored food to soluble form; Hydrolyses; dissolves food materials; is a medium of transportation of dissolved food substances to growing regions of radicle and plumule;
Softens seed coat to facilitate emergence of radicle; First four (4 marks)