MOKASA EXAMINATION
231/1/BIOLOGY
MARKING SCHEME

1. Drought;
   Conservation of resources;
   Pollution;
   Food shortage;
   Poor health;
   Any 2 X 1 mark
2. (i) Crustacea; must begin with capital letter-(1 mark)
   (ii) Two pairs of antennae;
   (iii) Presence of carapace;
Any 2 X 1 mark
3. In aerobic respiration glucose is completely oxidized; releasing large amount of energy; while in anaerobic respiration, glucose is partially oxidized; releasing less energy.(3 marks)

4. (a) hydrophyte; (1 mark)
   (b) Broad leaves provide large surface area for loss of excess water;
   Flowers are raised above the water to allow pollination;
   Leaves have chloroplasts that photosynthesize under low light intensity;3 x 1mark;
5. A-stores salt and sugars/maintains shape of cell;
   B-enclose cell contents/entry of substances;
   C-site for chemical reactions;
6. (a) suffocation;
   (b) Vaseline blocks the spiracles; no inhalation;
7. (a) (i) B-Nitrification (ii) C-Denitrification
   (b) Root nodules;
   (c) Removes nitrates that are useful to plants from the soil;
8. (i) formation of ATP;
   (ii) Production of hydrogen atoms;
9. (a) blood entering lungs;
   (b) Blood entering the lungs has released oxygen to tissues and carbon (iv) oxide formed is added; blood leaving lungs has received oxygen and released carbon (iv) oxide;

10. (i) specimen bottle;
    (ii) Attract and trap rodents;
11. (a) *Vibrio chlolerae;*
    (b) Plasmodium species;
12. Cells are large;
    Cells are actively dividing;
13(a) to demonstrate that heat is produced during anaerobic respiration;
   (b) Rise in temperature; anaerobic respiration releases energy;

14.(a) capture recapture method;

(b) $P=\frac{FM \times SC}{MR}$; $\frac{35 \times 2}{7}$ 200;

(c) Beetles may migrate;
Released beetles may not mix freely due to mark;
Beetles may move in;
Released beetles may not have enough time to mix; any 2

15(i) hot water killed the fish;
Organic matter in sewage is decomposed; oxygen is depleted causing suffocation and death;

16.(i) lowers the body tube through longer distances to bring the image into focus;
(ii) concentrates light onto the stage;

17.(i) parietal;
(ii) Marginal;

18.(a) negative;
(b) Glucagon;

19. (i) Petals are free:
(ii) Male flower;

20.(a) (i) mRNA;
(ii) Presence of uracil;
(iii) Single stranded; any 1
(b).Gene mutation/insertion;

21. Starch/carbohydrates/glucose; fatty acids; amino acids; vitamins; any 3

22. Co-dominance;

23.(i) position that an organism occupies in a habitat and its role;
(ii) Dry weight of a living organisms at a particular trophic level;

24.(a) i 0/3 c 0/1 pm 3/3 m3/3;
(b) Herbivorous;
(c) Absence of upper incisors;
Absence of upper canines;

25.(a) umbilical vein;
(b) Exchange of substances;
Secrete oestrogen and progesterone;

26.(i) carnassial tooth;
(ii) Slice through flesh and crush bones;

27. Secrete lytic enzymes that digest the vitelline membrane;
Forms fine filament that penetrates the egg any two; any 2

28.(i) cytology is the study of cells while entomology is the study of insects;

(ii) Botany is the study of plants while zoology is the study of animals;

29(i) stimulates synthesis of sperms;

(ii) stimulates the interstitial cells to release male hormones;

30. Period between conception and birth;

31.(i) allows light to pass through making cell components to be visible;

(ii) Enable the section to be smooth preventing distortion of cells;

32. Has green pigment chlorophyll; that traps light energy;

33. (a) Animal;

(b) Hook like structures that stick onto fur/hair of animals;