FORM ONE BIOLOGY
MARKING SCHEME

1. Field of science that deals with the study of living things;
2. Measuring; observing; calculation; identification, recording. (Any two)=2 marks)
3. a) Species;
   b) Used in botanical gardens; museum; animal orphanage in a zoo(any one) (1 mark)
4. Enlarges the image of the specimen
5. Botany and zoology
6. (a)Ecology
   This is the branch of biology that deals with the study of inter relationships between organisms and their environment.
   (b)Anatomy
   This is the branch of biology that deals with the study of structures of living things/ internal structures of living things.

7. (a) Reproduction
   (b) Sensitivity/Irritability
   (c) Gaseous exchange
8. a) Cellulose;
   b) Store sugars, salt and food; carry out osmoregulation by inducing osmotic gradient that bring about water movement; maintain the shape of the cell;
   c) Cell wall; and chloroplast;
9. a) Ability to distinguish two close points
   b) Specimen is placed in a vacuum hence it will die.
10. Science of classification;
11. Enable the taxonomists to place origin in their correct group for reference;
    Help us understand the evolutionary relationship between different organisms;
    Help to arrange information about living things in orderly manner;
    Grouping bring together living organisms with similar characteristics but separate those with different;
12. (a) Growth is an irreversible increase in size and mass while development is irreversible change in complexity of the structure of the living things.
    (b) In order to attain maximum size and mass which are essential for their body function;
13. Length of a cell = field of view in microns / no of cell
    (3 marks)

    no. of cells = 8 x 1000/8 =100**µm** ;

14(i) a) It is the study of insects.
    (1 mark)
    b) Bait trap
    (1 mark)
(ii) To attract and trap small animals;accept examples like rats

15. a. Bidens
    b. Pilosa
16. Magnification = objective lens x eye piece lens;

= 25 x 40
= X1000;

17 a)Prokaryotic cells lack nuclear membrane while eukaryotic cell has nuclear membrane
b)i Rough endoplasmic reticulum
ii Protein synthesis; transportation of proteins

18(a)i The resultant energy is used for various metabolic(life sustaining)sustaining activities of the organism
ii) provide the oxygen needed for respiration and expels the resultant carbon IV oxide from body tissues
iii)It is essential for continued existence of species and growth of populations
(b) movement ; nutrition; excretion; growth and development ; irritability

19. a)To allow light to penetrate (pass through) the sections in order for magnification to be Possible.
b) This also avoids (prevents) overlapping of tissues.

c)-To avoid destruction (distortion) of tissues hence obtain intact tissues of specimens.
d)To maintain turgidity and shapes of the cells and hence avoid desiccation (drying up) which may cause death of tissues.

e)To create contrast and make different structures of the specimen more distinct for better view;

20. Magnification= $\frac{\text{drawing length}}{\text{object length}} = \frac{3.0}{0.9} = X3$

21. (a) The genus name was not started with a capital letter and species name is started with capital letter
(b) No because they don't belong to the same species.
(c) Plasmodium falciparum

22(a)X20 X X10 = X200 (Rej. 200)
(b) Bigger – Higher magnification

23(a)Chloroplast
(b) Site for photosynthesis
(c) J – Lamella (Rej. Lamellae); L – Granum (Rej. Grana)

24.monera; proctoctista;fungi; plantae; animalia

25. a. A: eyepiece lens; B: coarse adjustment knob; C: fine adjustment knob; D: objective lens; E: condenser lens; F: diaphragm; G: mirror;

b..E: concentrates and directs light onto the field of view;
F: regulates the amount of light entering the condenser (part E)

(i) part A; part D;
(ii) part C;

The objective lens (part D) was not clicked into position;
-The diaphragm (part F) was completely closed;

26. a. i. An electron microscope;
ii. Organelles are visible;
b. i. An animal cell;
ii. Absence of chloroplast; sap vacuole; and chloroplasts;
A: Golgi bodies; B: centrioles; C: nucleolus; D: nucleus; E: smooth endeplasmic reticulum;
F: micropinocytotic veside; G: ribosomes; H: mitochondrion;
d. A: Packing and transport in vesicles of materials such as enzymes, glycoproteins etc.
- Secretion of synthesized proteins and carbohydrates.
- modification of materials eg. It adds sugars to proteins to make glycoproteins.
- processing of cisternae.
- Are often involved in lysosomes formation.

B: - Formation of spindle fibres that facilitate cell division;
- Formation of celia and flagella in cells where they occur;

C: Synthesis of ribosomes;

D: Controls all cellular activities.

E: Synthesis and transport of lipids;

F: Pinocytosis; ie. engulfing and digesting liquid food particles;

H: Site for respiration;

27 . Being autotrophic green plants make their own food using sunlight energy;
They respond to external stimuli by limited movements; such as tropism and nastism;