

# MARKING SCHEME

## BIOLOGY

### FORM 1

#### MID TERM 2 2024

1.
  - a. Have chlorophyll and hence photosynthesize, lack chlorophyll hence feed on readymade food
  - b. Plants respond slowly to changes in the environment, while animals respond rapidly to changes in the environment
  - c. Plants do not move about while animals move about in search of food and shelter
  - d. Growth takes place at the meristemic tissues only while in animals growth occurs all over the body
2. Gaseous exchange
3.
  - a. Cell- the basic unit of structure and functions in the organism
  - b. Tissue- a collection of cells of similar type that are specialized to perform the same function
  - c. Organ- a group of tissues that are specialized to perform one or more functions
  - d. Organ system- several organs whose functions are coordinated and synchronized to bring about an effective action in a living organism.
4. Differences between a light and an electron microscope.

Light

Electron

a) Uses light to illuminate the specimen	Uses a beam of electrons to illuminate the specimen
b) Uses glass lenses for magnification	Uses electromagnetic lenses for magnification
c) Has low resolving power	Has very high resolving power
d) Has low magnification power	Has very high magnification power
e) Specimen under view can be dead or alive	Specimen under view are dead

5.
  - a) A- Eye piece lens
  - b) B- Coarse Adjustment knob
  - c) C- Fine Adjustment knob
  - d) D- Stage
  - e) E- Diaphragm
  - f) F- Objective lens

6.

- a) Ribosomes – Form site for protein synthesis.
  - b) Golgi Apparatus – Package and transport of glycoprotein / Transport of synthesized materials out of the cell / Formation of enzymes / Secretion of synthesized proteins and carbohydrates.
  - c) Lysosomes – Contain lytic enzyme which destroy worn out cells and organelles.
  - d) Nucleus – Controls all the activities of the cell
  - e) Cell membrane – Allows selective movement of substances in and out of the cell.
- 7.
- a) Diffusion Gradient – The greater the concentration gradient between two points the higher the rate of diffusion and vice versa.
  - b) Thickness of tissues – The thicker the membranes or tissues the lower the rate of diffusion and vice versa.
  - c) Temperature – An increase in temperature increases the energy content in molecules and this causes them to move faster and vice versa.
8. Observation, Identifying, Drawing, Recording, Measuring, Classifying, Analyzing and Evaluation. (ANY 5= 5 Marks)
9. Five rules to be observed when handling a light microscope.
- i. Do not place the microscope near the edge of a bench.
  - ii. While carrying the microscope, hold its arm with one hand and support its base with the other hand.
  - iii. The stage should be kept dry and clean.
  - iv. Do not touch the mirror and the lenses with your fingers.
  - v. Clean dirty lenses using lens tissue paper.
  - vi. The low power objective lens should click into position before and after use.
  - vii. Keep the microscope free from dust.
- (Any 5 = 5 marks).
10. Diffusion is the movement of molecules from a region of high concentration to a region of low concentration through a concentration gradient while Osmosis is the movement of solvent molecules (water molecules) from a region of high concentration to a region of low concentration across a semi-permeable membrane. (2 marks)
- 11.
- a) Nutrition is the process by which organisms obtain and utilize nutrients. (2 marks)
  - b) Autotrophism is the mode of nutrition in which living organism manufacture their own complex food substances from simple substances while heterotrophism is the mode of nutrition that involves taking in of readymade complex food materials. (2 marks)
12. Role of Osmosis.
- a) Absorption of water from the soil.
  - b) Support
  - c) Opening and closing of stomata.
  - d) Feeding in insectivorous plants.
  - e) Osmoregulation

13. Magnification = Length of the Drawing / Length of the Object

Actual Length = Drawing Length / Magnification

$$= 4/2$$

$$= 2 \text{ cm}$$

14. Genus

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