

JOINT EXAMINATION
BIOLOGY PP1 FORM 3 TERM 3 2023
MARKING SCHEME

1. The formation of (plant) enzymes; The formation of pigments /chlorophyll; The formation of (plant) hormones / Auxins; The formation of tissues; stored as food reserves

(3marks)

2. (a) Mitochondrion re] mitochondria; (1mk)
(b) Cristae; (1mk)
(c) Site where respiration occur;
harbors respiratory enzymes] (any one) (1mk)

(1mark)

3. System of naming where an organism is assigned two scientific names i.e genus and the specific name.

4. Reducing competition; preventing inbreeding; reducing the spread of epidemics; /diseases; avoid over crowding. (2marks)

5. Light energy is prevented from reaching seedling; they die before they can photosynthesize as they use up all food reserves;

(2marks)

6. Skeletal muscles contract to press the blood in veins; the valves prevent the blood from being drawn backwards; (2marks)

7. It catalyzes /speeds up the breakdown of hydrogen peroxide; to harmless/less toxic water and oxygen. (2marks)

8. It brings about gene mixing / variation and so improves hybrid vigour /survival value (1mark)

- b) Undesirable traits are transferred to progeny reducing the capacity to survive adversity. (1mark)

9. Photolysis of water/Split water molecules; to produce hydrogen ions needed in carbon (IV) oxide fixation; Helps in formation of ATP;

(2marks)

10. It provides camouflage; it provides the animals with a definitive pigment; (1mark)

11. Agglutinins clump bacteria for phagocytosis; Opsonins adheres on the surface of the pathogens; Lysins digests the cell membrane of the pathogen for the phagocytes to engulf

(3marks)

12. They are highly branched for rapid transmission of impulse;

- The have intercalated disc for rapid transmission. They do not fatigue / do not form lactic acid

13.

- a) Resolving power is the ability to distinguish two close parts as separate entities; (1mk)

- (b) Diameter of field of view = 3mm
No of cells 20 cells

$$1\text{mm} = 1000\mu\text{m}$$

$$3\text{mm} = 3000\mu\text{m};$$

$$\text{Size of 1 cell} = \frac{3000}{20} = 150\mu\text{m}; \quad (3\text{mks})$$

20

14. The amount of air taken in or exchanged in one breath.
(1mark)
15. The rhythmic contraction of alimentary canal muscles; it moves food along (the lumen of) the canal (2marks)
16. (a) X – Guard cell;
W – Stoma; rej. Stomata
17. It secretes bile; which is needed in the emulsification of lipids; and neutralizing of Hydrochloric acid; (2marks)
18. They provide surface for cytoplasmic streaming in the translocation of nutrients.
(1mark)
19. population density; dispersion;
20. forms the basis for asexual reproduction; involved in repair of worn out tissues/ cells; involved in growth and development;
21.
(a) - Have thin film of moisture to dissolve gases for efficient diffusion;
- Have a thin epithelium for faster diffusion of gases;
- Have a large surface area for maximum gaseous exchange;
- Have a network of blood capillaries for transportation of respiratory gases;
(any three) (3mks)
- (b) Red blood cell; (1mk)
22. The availability of oxygen for respiration/energy production; A concentration gradient of salt ions in the soil; (2marks)
23.
(a) Aquatic ecosystem; acc terrestrial with a suitable example.
(b) The shorter the food chain; the more energy can be derived from it; hence the larger the population it can support;

24. lack/limited/insufficient production of insulin by pancreas; injury to the proximal convoluted tubule hindering reabsorption of glucose;
(2marks)

25. Dissolved carbon (iv) oxide in water

Respiration in plants

b) Aquatic plants use carbon (iv) oxide for photosynthesis

Regulation of PH in water for survival of aquatic organism

26. (a) Gas produced during anaerobic respiration

(b) Glucose → Ethanol + Carbon (IV) oxide + Energy

(c) To remove O₂; cooling to provide suitable temperature for enzymatic reactions/ avoid destroying/killing yeast

(1mark)

27. Prevents excessive loss of water by plant . It reflects more light hence control the temperature inside the leaf.

Protects the inner tissues from infections

28. Support;

Storage of water and food;

29. Large surface area to volume ratio

Moist to dissolution of respiratory gases

Thin epithelium to reduce diffusion distance

Highly vascularized to maintain steep concentration gradient (any two)

30. (i) crossing over

(ii) Exchange of genetic materials ; leading to variation;

31. To carry the blood from the heart which is flowing under very high pressure
(2marks)

32. The trachea is ciliated to trap the dust particles and other foreign materials
(2marks)

33. liver (2marks)

34. photolysis, conversion of light energy into chemical energy(ATP)

(2marks)

35. (a) Osmosis

(b) The amount of sucrose solution increase; the sucrose solution has higher osmotic pressure hence passes into the potato cavity.

(c) There would be no movement of water; because the protoplasm is killed by boiling, hence the semi-permeable membrane.

(1marks)

36. (i) Plasmodium sp

(ii) Schistosoma sp