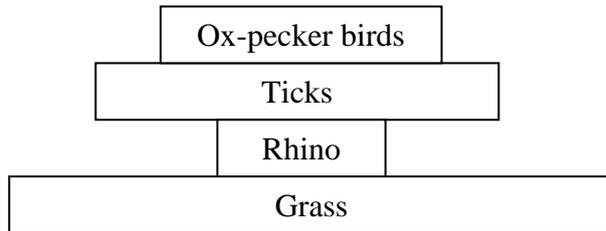


BIOLOGY FORM 4 PAPER 1 JOINT EVALUATION-T1-2017

MARKING SCHEME

1. Does not easily dissociate; thereby reduces capacity of haemoglobin to transport oxygen to body tissues.
2. The surface area to volume ratio is higher in calves than adults; hence adults retain more heat than calves/calves loose more heat than adults hence adults have to flap ears more to cool the body.
3. a) Mitochondria (Rej mitochondrion) b) Chloroplasts c) Golgi body
4. a) To keep the cells turgid/prevent drying/maintain shape of cells
b) Colour for proper visibility/clarity of parts/enhance visibility.
c) Allow light to pass through the section/faster diffusion of stain.
5. i) Where basic structural forms of organs with same embryonic origin are modified to serve different functions because of exploiting different ecological niches.
ii) Where different structures of organs with different embryonic origin are modified to perform same functions due to exploiting same ecological niche.
6. a) Glucose + Fructose b) i) Y-Condensation ii) X-Glycosidic bond
7. a) Is a condition in which an individual is homozygous for the defective gene that directs the synthesis of defective haemoglobin.
b) Blockage of blood capillaries by sickle shaped RBCs
c) Experience oxygen shortage in tissues
8. i) Gynoecium/pistil ii) Androecium/stamen
9. A, B and rhesus antigen (A, B must be in capital)
10. i) Sweep net ii) Pooter
11. a) Hypogeal b) Coleoptile c) Absorption of water and mineral salts
d) Thin cell wall/Small sized/lacks cell vacuole/dense cytoplasm/actively dividing

12. Excretion, respiration, egestion
13. Cytoplasmic filaments
14. a) Antidiuretic hormone (Rej ADH)/vasopressin b) Aldosterone
15. –Presence of chloroplasts
- Uneven walls (thin outer, thicker inner walls)
 - Bean/sausage shaped
16. Xylem, Sclerenchyma, cholenchyma (any 2)
17. i) C-G-G-A-T-C-T-A-G-T-G ii) C-G-G-A-U-C-U-A-G-U-G
- 18.



19. In high altitude the oxygen tension is low; hence the body responds by increasing the total number of RBCs and the haemoglobin in them; This increases the oxygen carrying capacity of the RBCs which is useful during competition;

20.

Artery	veins
1. Thicker, muscular, elastic walls	1.Thin, less muscular, inelastic wall
2. No valves	2.Has valves
3. Narrow lumen	3.Wide lumen

21. 1mm=1,000µm thus 5mm=5,000µm (diameter field of view).

$$\text{Size/diameter of one cell} = \frac{\text{diameter of field of view}}{\text{Number of cells across diameter}}$$

$$= 5,000/20 = 250\mu\text{m (penalize if u is used instead of } \mu \text{)}$$

22. a) A-Bubbles B- Forms white precipitate (Rej milky, cloudy)
- b) Carbon(IV)oxide/CO₂ c) Anaerobic respiration

23. -Number of limbs - Number of body parts – Presence of number of antennae

24. After the 4th month, placenta takes over; secretion of progesterone hormone thus maintains pregnancy/inhibit contraction of uterus myometrium;
25. –Unprotected Sexual intercourse with infected person.
- Blood transfusion from infected donor.
 - Infected mother to baby at birth and through breast milk.
 - Sharing and using sharp instruments with infected people.
26. A – spore (Rej spores) B – Sporangiphore C – Rhizoids
27. a) i) The genetic makeup of an organism for a specific characteristic/Sum total of genes inherited.
- ii) Physical and physiological characteristic of an organism resulting from genotype and environment.
- b) Characteristics of organism is determined by genes which occur in pairs; of such a pair only one gene is represented in a single gamete.
28. a) Are observable or physical/physiological and non observable differences among organisms
- b) Continuous variation – These are variations that shows a wide range of differences of same characteristics from one extreme and to the other with many intermediates
- Discontinuous variation – Type of variation where there is definite/distinct group of organisms with no intermediates.
29. Hcl - NaHCO₃ - Benedict's solution (should have capital B and apostrophe)
30. a) Synthesis of vit-K - Absorption of water (Rej-Reabsorption)
- b) Lipase - peptidase
- Maltase
 - Sucrase
 - Lactase