

BIOLOGY

231/1

PAPER 1 MARKING SCHEME.

Q1.	a. Entomology; b. Genetics;	1 mk 1 mk
Q2.(a)	a. Left ventricle pump blood longer distance/ to all parts of the body while right ventricle pump blood shorter distance/ to the lungs; Has thicker wall to generate higher pressure. b) i) Hepatic portal vein; ii) Pulmonary artery;	2 mks 1 mk
3. (a)	(i) Quinine; (ii) Rubber;	1 mk 1 mk
(b)	(i) Ultra-filtration; (ii) Selective reabsorption;	1 mk 1 mk
4. (a)	(a) - Not suitable for large organisms; accept plants/ animals. - Not suitable for fast moving animals;	2 mks
5.	a. Resolution: Ability of the microscope to distinguish between two close structures as distinct entities; Magnification is the ratio of an object image to its real size b., (i) Connective tissue; (ii) Blood (tissue);	1 mk 1 mk 1 mk 1 mk
6.	a, - Results in adaptations that enable organisms to exploit different ecological niches; - Leads to formation of new species;	1 mk 2 mks
	bi) Structures that have ceased to function over long period over long period of time and hence reduced in size; ii) Cecum/appendix/ caecum/ ear muscles/ nictitating membrane;	1
7.(a)	(i) Insect; (ii) Epigynous; (iii) Heterostyly; stigma positioned above anthesis Pollen grains from anthers unable to reach the stigma; hindering self pollination;	1 mk
(b)	- Replication of chromosomes; - Synthesis of new organelles; - Build up of energy reserves to be used during cell division.	2 mk
8a)	Visking is semi-permeable; hence allows small glucose molecules to pass into the beaker;	2 mks
b)	- The cell cytoplasm is hypotonic to the salt solution/ salt solution is hypertonic to the cytoplasm cell shrinks/becomes crenated;	3 mks
9. ai)	R smooth muscles; rej involuntary/visceral	
ii)	Movement / locomotion;	

iii)	Blood vessels/ urinary tract/ Reproductive/digestive system	1mk
bi)	Fits into the neural canal of atlas to form a joint That allows rotation/ turning head from side to side	1mk
ii)	Passage of blood vessels;	1mk
10. a	Process through which algae bloom/ prolifera; Due to presence of nitrates and phosphates in water bodies;	1mk
b	- Reduces oxygen concentration in water; Leading to suffocation/ death of aquatic organisms; Reduces light penetration limiting photosynthesis;	2mk
11.	(a)Dark stage ; (b) at night plants carry out respiration and oxygen is used ;while carbon iv oxide is produced; increase in CO ₂ produced may lead to suffocation (of people in the house);	Max 3 total 2mks
12. a	When they interbreed freely; and produce a fertile offspring;	2mks
b	Pooter; rej wrong spelling	1mk
13. a	Moulting/ecdylisis; -formation of larval cuticle; - inhibits moulting;	1mk 1mk 1mk
b.(i)	Apical dominance; Auxin;	1mk 1mk
14. a.	Homodont having teeth of the same type and shapes	1mk
b.	Heterodont having teeth of different size and shape;	1mk
c.	Shearing/slicing/crushing/chopping; $i_3^0, c_1^0, pm_3^3, m_3^3$;	1mk 1mk
15.a	$\frac{64}{2}, \frac{62}{2}, =32+31=63$ chromosomes;	2mks
b.	Absence of pairing of chromosomes during meiosis due to odd number of chromosomes;	
16.a	Lignified/thickened to prevent collapsing; Hollow/ absence of cross walls for passage of water; Narrow lumen to facilitate capillarity;	1mk
b	- High temperature; - Low humidity; - Low atmosphere; - Wind; - High light intensity;	2mks
17.a	Q remained straight; L bend towards right;	Any 1 mk
b	Q source of auxins removed; L lateral migration of auxins from lit side to darker side; faster/rapid growth/elongation on darker side;	
18.	(a) Stoma; rej stomata (b) presence of chloroplasts for photosynthesis; Thicker outer wall and thinner inner wall to enhance bulging during opening of stoma';	
19.	Excess amino acids are deaminated/amino group is removed; amino group is converted to ammonia; which combines with	

	carbon(IV) oxide to form urea.; carbohydrates group is converted to glucose and respired; converted to glycogen for storage;	
20.	(i) To keep air passage/ trachea open; (ii) Dissolves gases; (iii) Trap dust particles;	
21.	(i) Semi circular canals; (ii) Cochlea;	
22.	Ethanol; Carbon(IV) oxide.;	
23.	(g) Monera; (b) Prokaryotic/ nuclear material not surrounded by nuclear Membrane; (c) Unicellular; (d) Smaller in size; (e) Lack most organelles/ have few organelles.;	2mks)
24.	To supply more oxygen to tissues; oxygen is used to oxidize lactic acid (into carbon (IV)oxide water and energy.);	
25.	<i>Schistosoma haemotobium</i> <i>Schistosoma japonicum</i> <i>Schistosoma mansoni</i>	Acc <i>Schistosoma</i> species Rej. If the first name starts with small s if underlined with one line