INDIAN SCHOOL MUSCAT

FIRST TERM EXAMINATION

SEPTEMBER 2018

CLASS XI

Marking Scheme – BIOLOGY [THEORY]

30/09/2018

SET A

Q.NO.	Answers	Marks (with split up)
1.	Pepsinogen	1
2.	Atlas	1
3.	Due to the presence of red coloured oxygen storing pigment called myoglobin.	1
4.	Somatostatin	1
5.	Scutellum	1
6.	Any two relevant differences	1+1
7.	i)The volume of blood pumped out by each ventricle per minute. ii) Cardiac output = Heart rate x stroke volume	1+1
8.	Cortical nephrons and medullary nephrons. Cortical nephrons- When the Malpighian corpuscle, PCT and DCT of the nephron are situated in the cortical region of the kidney and *loop of Henle is very short and extends only very little into the medulla.* Medullary nephrons- *In this the loop of henle runs deep into the medulla.*	1+ ½ + ½
9.	Diagram- any four correct labels . OR i) Bone has hard matrix due to calcium salts and cartilage has slightly pliable matrix chondrotin salts. ii) Pubis, Acetabulum	(½ +½ +½ +½) OR 1+ (½ +½)
10.	i) Ear ossicles increase the efficiency of transmission of sound waves to the inner ear. ii) Eustachian tube helps in equalising the pressures on either sides of the ear drum.	1+1
11.	i) Gland-Thymus, Hormone- Thymosins ii) As her thymus gland was non functional so her immune system was very week.	1+1
12.	i) Staminode ii) Epipetalous	1+1
13.	i) If secreted in active form, they will act on the proteins of the cellular components and cause damage to the intestinal wall. ii) Glisson's capsule iii) It helps in lubrication / Protection from excoriation by the highly concentrated HCL.	1+1+1
14.	i) Sigmoid ii) 30 mmHg	(½ + ½ +

	iii) Partial pressure of CO_2, hydrogen ion concentration and temperature. iv) Tissues	½ +½ +½ +½)
15.	i) ECG is the graphical representation of the electrical activity of the heart during a cardiac cycle. ii) QRS complex represents depolarisation of the ventricles which initiates ventricular contraction. The contraction starts shortly after Q and marks the beginning of the systole. T wave represents the return of the ventricles from exited to normal state (repolarisation).The end of the T wave marks the end of the systole.	1+ 1+ 1
16.	i) GFR: The amount of the filtrate formed by the kidneys per minute. ii) Glomerulus and Bowman's capsule. iii) The efferent arteriole emerging from the glomerulus forms a fine capillary network around the renal tubule called peritubular capillaries.	1+ (½ +½) +1
17.	i) Diagram with four correct labels. ii) Heavy meromyosin and Light meromyosin	(½ +½ +½ +½) (½+½)
18.	i) Any two relevant differences. ii) Only the cones are densely packed here. It is the point where the visual activity (resolution) is the greatest. OR i) Corpus callosum ii) Regulation of sexual behaviour, expression of emotional reactions and motivation. iii) Outer layer- dura matter , middle layer- arachnoid, inner layer- pia mater.	(1+1) (½ +½) OR (½)+ 1+ (½ +½+½)
19.	i) It stimulates resorption of water and electrolytes by the distal tubules and there by reduces loss of water through urine. ii) Hormone- Melatonin , Gland – Pineal iii) Leydig cells – Testosterone / Androgens , Corpus luteum- Progesterone.	1+ (½ +½) + (½ +½)
20.	i) Diabetes mellitus ii) Stunted growth(cretinism), mental retardation, low intelligence quotient, abnormal skin, deaf mutism. (any two) iii) CCK- Cholecystokinin , GIP- Gastric inhibitory peptide	1+ (½ +½) + (½ +½)
21.	i) Any relevant difference. ii) Phyllotaxy is the pattern of arrangement of leaves on the stem or branch. Alternate-China rose / mustard/ sun flower , Opposite- Calotropis / guava	1+ 1+ (½ +½)
22.	Any three types of aestivation (page 74 , 2nd para)	1+1+1
23.	i) Diagram- Four correct labels. ii) Testa and Tegmen	(½ +½ +½ +½) (½ +½)

24.	i) They develop from the monocarpellary superior ovaries. Mango- fleshy edible mesocarp, Coconut – fibrous mesocarp ii) If a fruit is formed without the fertilization of the ovary it is called a parthenocarpic fruit.	1+ ½ +½ +1
25.	Five disorders-Page no. 265&266 OR • The sinoatrial (S-A) node, also called the pacemaker, is a group of specialized cells in the wall of the right atrium that initiates cardiac cycles and regulates regular rhythmic contractions of the heart. Cardiac impulses travel from the S-A node into atria causing atrial contraction. • The cardiac impulse then travels along fibers to the atrioventricular (A-V) node which is specialized muscle tissue localized in the floor of the right atrium. • Junctional fibers conducting impulses from the S-A node into the A-V node have small diameters , so as to allow the atria to empty into the ventricles. • From the A-V node, cardiac impulses travel into a group of large fibers(A-V bundle, bundle of his) then runs down the interventricular septum. • Towards the apex of the heart, the A-V bundle divides into right and left branches that give rise to Purkinje fibers which are widely distributed throughout the cardiac muscle and when stimulated causes ventricular contraction. Note: If students will write about the role of (SA) Node, (AV) Node, Bundle of His (AV Bundle), Right and Left Bundle Branches and Purkinje Fibers and the points are correct award marks.	1+1+1+1+1 OR 1+1+1+1+1
26.	i) Inflammation of glomeruli of kidney. Stone or insoluble mass of crystallized salts (oxalates) formed within the body. ii) The counter current mechanism helps to maintain a concentration gradient in the medullary interstitium. Presence of such interstitial gradient helps in an easy passage of water from the collecting tubule thereby concentrating the filtrate-urine. iii) Sterols, hydrocarbons and waxes through sebum. OR Note: The answer should contain the explanation on - resting state , depolarization, repolarisation, transmission across synapse and refractory period.	1+ 1+ 2+ OR 1+1+1+1+1
27.	i) Page 73 – first para. (description about hypogynous, perigynous and epigynous flowers) ii) $\oplus$ ♀ $K_{(5)}\ C_5\ A_5\ \underline{G}_{(2)}$ (Distribute marks for each part- (¼ +¼ +¼ +¼ +¼ +¼) + ¼ [for parenthesis/ses used for showing fused condition] + ¼ [for showing superior ovary]) OR Page no. 75 last paragraph- five types of placentation.	1+1+1 + 2 OR 1+1+1+1+1
	Note: If diagrams are drawn by the students to support the statements, for any answers (In which it is not mentioned to represent the answers with the help of	

	diagrams) distribute the marks for the diagrams also.	