

INDIAN SCHOOL MUSCAT

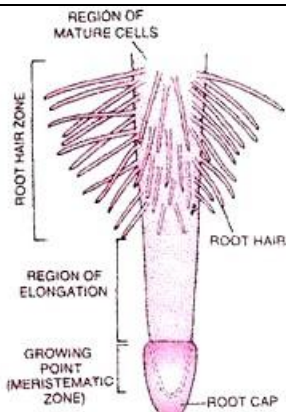
FIRST TERM EXAMINATION

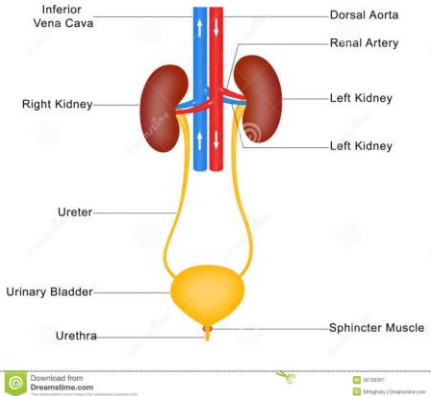
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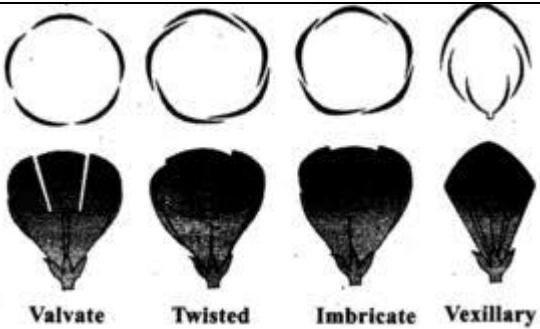
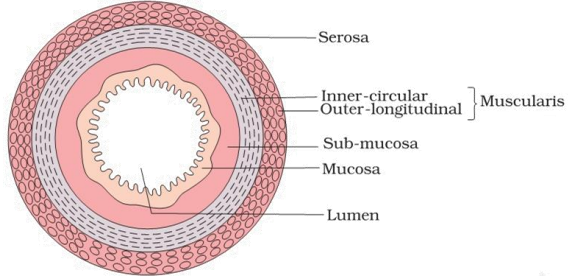
CLASS XI

Marking Scheme – BIOLOGY [THEORY]

SET B

Q.NO.	Answers	Marks (with split up)
1	Bilirubin and bilivirdin	$\frac{1}{2} + \frac{1}{2}$
2	They contain plenty of mitochondria and high myoglobin content.	1
3	Hormones secreted by adrenal medulla.	1
4	Mode of arrangement of leaves on a stem	1
5	It has two articulation surfaces on its dorsal end.	
6	Spirometer. It helps in clinical assessment of pulmonary functions.	1+1
7	Erythroblastosis foetalis. It can be avoided by administering anti-Rh antibodies, immediately after first delivery.	
8	Those animals which excrete their nitrogenous wastes mainly in the form of ammonia . eg., bodyfishes, aquatic invertebrates etc.	1+1
9	The three tiny bones in the middle ear. Malleus, incus, stapes OR The ribs which are attached dorsally to the respective thoracic vertebrae and ventrally to the sternum with the help of hyaline cartilage are true ribs. There are 7 pairs.	$\frac{1}{2} \times 4$ 1+1
10	The resting membrane is impermeable to the negatively charged proteins of the axoplasm. For every two potassium ions coming in, three sodium actively pumped out.	1+1
11	Pars distalis and pars intermedia. Any two hormones .	$\frac{1}{2} \times 4$
12	Reticulate- veinlets form a network Parallel- veins are parallel to each other.	1+1
13		$\frac{1}{2} \times 5$ $\frac{1}{2}$ - NEATNESS

14		$\frac{1}{2} \times 6$									
15	Pivot fibrous cartilagenous	1+1+1									
16	<p>synaptic knob of axon terminals, neuro transmitters, stimulate post synaptic membrane to conduct the action potential.</p> <p style="text-align: center;">OR</p> <p>Pons, medulla and cerebellum.</p>	1+1+1									
17	<p>Roots that vertically grow in marshy plants.</p> <p>Helps in respiration.</p> <p>Rhizophora</p>	1+1+1									
18	<p>Non nutrient chemicals that act as intercellular messengers and are secreted in small quantities.</p> <p><u>Mammalian hormones</u></p> <p>• Name the difference between the endocrine and exocrine glands</p> <table border="1" data-bbox="321 1024 646 1234"> <thead> <tr> <th>Property</th><th>Endocrine gland</th><th>Exocrine gland</th></tr> </thead> <tbody> <tr> <td>Secretion process</td><td>Directly into the blood</td><td>Into duct glands</td></tr> <tr> <td>Secretes</td><td>Secretes hormones</td><td>Secretes enzymes</td></tr> </tbody> </table>	Property	Endocrine gland	Exocrine gland	Secretion process	Directly into the blood	Into duct glands	Secretes	Secretes hormones	Secretes enzymes	1+1+1
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19	<p>a) The thoracic chamber is formed dorsally by the vertebral column, ventrally by sternum, laterally by the ribs and on the lower side by the dome-shaped diaphragm.</p> <p>b) It is necessary because any change in the volume of thoracic cavity will be reflected in the pulmonary cavity.</p>	2+1									
20	Rachis, Midrib, compound/pinnately compound	1+1+1									
21	<p>Flow of deoxygenated blood from the right ventricle to the lungs and the flow of oxygenated blood from the lungs to the left atrium is pulmonary circulation.</p> <p>systemic circulation is the flow of oxygenated blood from the left ventricle to all parts of the body except lungs and the flow of deoxygenated blood from all parts of the body to the right atrium.</p> <p>left ventricle pumps blood to all parts of the body while right ventricle pumps it only to the lungs, which are nearer to it, left ventricle has to exert more pressure and has thicker walls than right ventricle.</p>	1+1+1									
22	Parathormone. It increases calcium level in blood. TCT	1+1+1									
23	<p>peptic or chief cells which secrete the proenzyme pepsinogen</p> <p>parietal or oxyntic cells which secrete HCl and intrinsic factor.</p>	1+1+1									

24	 <p style="text-align: center;">Valvate Twisted Imbricate Vexillary</p>	1+1+1
25	<p>sclerosa, muscularis, sub mucosa and mucosa.</p>  <p>Lacteal</p> <p style="text-align: center;">OR</p> <p>High pO₂, Low pCO₂, Low H⁺ ion concentration and low temperature. Sigmoid curve obtained by plotting percentage saturation of haemoglobin with pO₂.</p>	2+2+1
26	<ul style="list-style-type: none"> ➤ Muscle contraction is initiated by a signal sent by the central nervous system via a motor neuron. ➤ A neural signal reaching the neuromuscular junction releases a neurotransmitter (Acetyl choline) which generates an action potential in the sarcolemma. ➤ This spreads through the muscle fibre and causes the release of calcium ions into the sarcoplasm. ➤ Increase in Ca⁺⁺ level leads to the binding of calcium with a subunit of troponin on actin filaments and thereby remove the masking of active sites for myosin. ➤ By utilizing the energy from ATP hydrolysis, the myosin head binds to the exposed active sites on actin to form a cross bridge. ➤ The head of each myosin molecule contains an enzyme myosin ATPase, ➤ In the presence of myosin ATPase, Ca⁺⁺ and Mg⁺⁺ ions, ATP breaks down into ADP and Pi, releasing energy in the head. ➤ ATP ----- ADP + Pi + Energy ➤ Energy from ATP causes energized myosin cross bridges to bind to actin. ➤ This pulls the attached actin filaments towards the centre of A-band. 	10 X ½

	<ul style="list-style-type: none"> ➤ The I-line attached to these actins are also pulled inwards, thereby causing a shortening of the sarcomeres. That is Contraction. ➤ The ADP and Pi released from myosin goes back to its relaxed state. ➤ Now a new ATP binds and the cross bridge is broken. ➤ The ATP is again hydrolysed by the myosin head and the cycle of cross bridge formation and breakage is repeated causing further sliding. The process continues till the Ca^{++} ions are pumped back to the sarcoplasmic cisternae resulting in the masking of actin filaments. ➤ This causes the return of Z-lines back to their original position , Relaxation. <p style="text-align: center;">OR</p> <p>Unipolar – embryonic stage, bipolar - retina and multipolar-CNS Electrical and chemical which has a synaptic cleft.</p>	3+2
27	<p>Flower is a modified shoot. Sepals, petals, stamens and carpels with explanation.</p> <p style="text-align: center;">OR</p> <p>Leaf, Petiole, stilt roots, rhizome, leaf</p>	5 X 1