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**INDIAN SCHOOL SALALAH**  
**FINAL EXAMINATION, FEBRUARY 2025 (AY 2024-25)**



**Class: XI**

**BIOLOGY (044)**

**Date: 6.2.25**

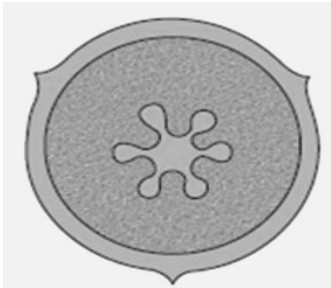
**Time: 3 Hrs.**

**Maximum Marks: 70**

**General Instructions:**

1. This question paper has five sections and 33 questions.
2. Section A has 16 questions of 1 mark each
3. Section B has 5 questions of 2 marks each
4. Section C has 7 questions of 3 marks each
5. Section D has 2 case-based questions of 4 marks each.
6. Section E has 3 questions of 5 marks each.
7. All questions are compulsory. There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
8. Wherever necessary, neat and properly labeled diagrams should be drawn.

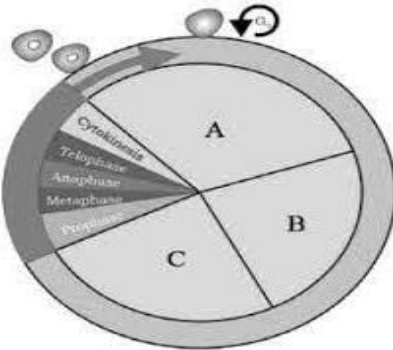
SECTION A		
1.	Smallest taxon of classification is _____.  a) Kingdom b) Family c) Variety d) Species	1
2,	First plants to inhabit the land  a) Angiosperms b) Bryophytes c) Gymnosperms d) Pteridophytes	1

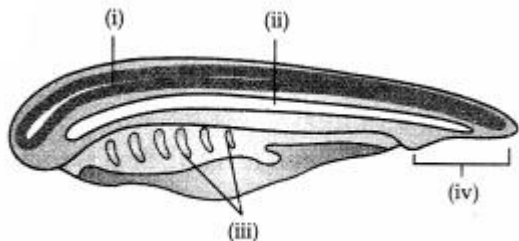
3.	<p>Which of the following statements is incorrect about sea walnuts</p> <ul style="list-style-type: none"> <li>a) They are diploblastic animals</li> <li>b) They exhibit tissue level of organization</li> <li>c) They undergo indirect development</li> <li>d) Fertilisation is internal</li> </ul>	1
4.	<p>Identify the type of placentation in the image given below:</p>  <ul style="list-style-type: none"> <li>a) Axile</li> <li>b) Parietal</li> <li>c) Marginal</li> <li>d) Free central.</li> </ul>	1
5.	<p>Vascular bundles in dicot stem are</p> <ul style="list-style-type: none"> <li>a) Closed, conjoint, endarch</li> <li>b) Open, conjoint, endarch</li> <li>c) Closed, conjoint, exarch</li> <li>d) Open, conjoint, exarch</li> </ul>	1
6.	<p>Trichomes are -----and occur in -----.</p> <ul style="list-style-type: none"> <li>a) Unicellular /root.</li> <li>b) Multicellular/ stem.</li> <li>c) Prominent / leaf.</li> <li>d) Rudimentary / stem.</li> </ul>	1
7.	<p>A compound formed of a sugar and a nitrogen base is called a</p> <ul style="list-style-type: none"> <li>a) Nucleoside</li> <li>b) Nucleotide</li> <li>c) Disaccharide</li> <li>d) Nucleic acid</li> </ul>	1

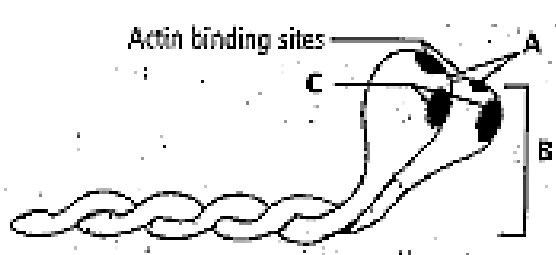
8.	<p>What is the significance of meiosis?</p> <ul style="list-style-type: none"> <li>a) It produces genetically identical daughter cells.</li> <li>b). It ensures genetic diversity in offspring.</li> <li>c). It occurs only in somatic cells.</li> <li>d) It is responsible for cell repair.</li> </ul>	1
9.	<p>Which among the following, regarding the enzyme inhibition is true?</p> <ul style="list-style-type: none"> <li>a) Competitive inhibition is seen when a substrate competes with an enzyme for binding to an inhibitor protein.</li> <li>b) Non-competitive inhibitors often bind to the enzyme irreversibly.</li> <li>c) Competitive inhibition is seen when the substrate and the inhibitor compete for the active site on the enzyme.</li> <li>d) Non-competitive inhibition of an enzyme can be overcome by adding a large amount of substrate.</li> </ul>	1
10	<p>Which of the following are products of light-dependent reactions?</p> <ul style="list-style-type: none"> <li>a) ATP and glyceraldehyde 3-phosphate</li> <li>b) Glyceraldehyde 3-phosphate and NADPH</li> <li>c) Carbohydrates</li> <li>d) ATP and NADPH</li> </ul>	1
11.	<p>Pyruvic acid enters TCA cycle in the form of</p> <ul style="list-style-type: none"> <li>a) Acetyl Co A</li> <li>b) Succinyl Co A</li> <li>c) Citric acid</li> <li>d) Malic acid</li> </ul>	1
12.	<p>When CO<sub>2</sub> is added to PEP, the first stable product synthesis is:</p> <ul style="list-style-type: none"> <li>a) Pyruvate</li> <li>b) Glyceraldehyde-3-phosphate</li> <li>c) Phosphoglycerate</li> <li>d) Oxaloacetate.</li> </ul>	1
	<p><b>Question No.13 to 16 consist of two statements- Assertion (A) and reason (R). Answer these questions selecting the appropriate options given below.</b></p> <p>A. Both A and R are true and R is the correct explanation of A</p>	

	<p>B. Both A and R are true and R is not the correct explanation of A</p> <p>C. A is true but R is false</p> <p>D. A is false but R is true.</p>	
13.	<p><b>Assertion (A)</b> : Abdominal muscle is related with respiration in animals.</p> <p><b>Reason (R)</b> : Relaxation of abdominal muscles draws in air.</p>	1
14.	<p><b>Assertion (A)</b> : Glucagon is known as a hyperglycemic hormone.</p> <p><b>Reason (R)</b>: Glucagon stimulates the liver to convert stored glycogen into glucose and increases the level of blood glucose.</p>	1
15.	<p><b>Assertion (A)</b>: Pulmonary artery carries impure blood to the lungs.</p> <p><b>Reason (R)</b>: Pulmonary vein carries impure blood from lungs to the heart.</p>	1
16.	<p><b>Assertion (A)</b>: The chemical stored in the synaptic vesicles are termed as neurotransmitters.</p> <p><b>Reason (R)</b>: Synaptic vesicles release these chemicals in the synaptic cleft.</p>	1
<b>SECTION B</b>		
17.	<p>Provide appropriate technical term in the space provided.</p> <p>a. Blood-filled cavity in arthropods _____</p> <p>b. Free-floating form of cnidaria _____</p> <p>c. Stinging organ of jelly fishes _____</p> <p>d. Lateral appendages in aquatic annelids _____</p>	2
18.	<p>State the role of the following:</p> <p>a) ANF    b) CCK    c) GIP    d) Gastrin</p>	2
19.	<p>What is alternation of generation? How is it exhibited by plants?</p>	2
20.	<p>a) What is photorespiration? What is its disadvantage?</p> <p>b) Comment on the process which helps to overcome the above process.</p>	2
21.	<p>a) Identify the terms karyokinesis and cytokinesis.</p> <p>b) How does cytokinesis in plant cells differ from animal cells?</p> <p style="text-align: center;"><b>OR</b></p> <p>a) Enzymes are not always purely proteins. Justify.</p> <p>b) The power of enzymes in catalysing reactions is incredible. Give an example.</p>	2

	SECTION C	
22.	<div data-bbox="581 205 1055 661" data-label="Image"> </div> <p data-bbox="277 703 1268 810">a) Identify the phylum to which the above organisms belong to giving reason. b) Mention the salient features of the phylum.</p>	3
23.	<p data-bbox="277 850 1141 884">Give a comparative account of the different types of algae based on</p> <p data-bbox="326 905 979 938">a) pigments    b) common name    c) food stored.</p>	3
24.	<p data-bbox="277 982 1323 1016">a) What type of flowers are that of peas and shoeflower based on their symmetry?</p> <div data-bbox="678 1087 938 1381" data-label="Image"> </div> <p data-bbox="277 1451 1359 1539">b) Identify the above mode of arrangement of floral parts with reference to the ovary and comment on it.</p>	3

25.	 <p>a) Label A, B and C phases of the cell cycle.</p> <p>b) It is commonly called the resting phase though it's not. Explain.</p>	3
26.	<p>(a) Pyruvic acid is the end product of glycolysis. What are the three metabolic fates of pyruvic acid under aerobic and anaerobic conditions.</p> <p>(b) Calculate the ATP molecules produced during the process of glycolysis.</p>	3
27.	<p>List the location in the cell where the following reactions take place during the process of photosynthesis.</p> <p>a) Synthesis of NADPH and ATP</p> <p>b) Photolysis of water</p> <p>c) CO<sub>2</sub> fixation</p> <p>d) Synthesis of only ATP</p> <p>e) Absorption of lights of different wavelength.</p>	3
28.	<p>Give reason:</p> <p>a) Insulin is called a hypoglycemic hormone.</p> <p>b) PTH is a hyperglycemic hormone.</p> <p>c) Vasopressin is an antidiuretic hormone.</p> <p style="text-align: center;"><b>OR</b></p> <p>a) What is GFR? What is the GFR in a healthy person?</p> <p>b) What is the process of release of urine called as? Explain the role of CNS in its regulation.</p> <p>c) What are the abnormal constituents of urine.</p>	3

	<div>SECTION D</div>																					
29.	<div>Animals belonging to the phylum Chordata possess three characteristic features.</div> <div>(a) What are the three fundamental features of chordates?</div> <div>Why are hemichordates called so?</div> <div>OR</div> <div>Give an example of Urochordata and Cephalochordata?</div> <div>(b) Identify the labelling (i), (ii), (iii), (iv).</div> <div>(c) What is the position of the heart in chordates?</div> <div></div>	4																				
30.	<div>The pituitary gland is located in a bony cavity and is attached to the hypothalamus by a stalk. It is divided anatomically into an adenohypophysis and a neurohypophysis. Adenohypophysis consists of two portions, pars distalis and pars intermedia. Neurohypophysis (pars nervosa) is also known as posterior pituitary.</div> <div>a) What are the adverse effects of over-secretion of Growth hormone?</div> <div>b) List out the various hormones of adenohypophysis and their role.</div> <div>c) The posterior lobe is called neurohypophysis. Why?</div> <div>OR</div> <div>c) What are the two hormones of the posterior lobe? State their role.</div>	4																				
	<div>SECTION E</div>																					
31.	<div>a) What is cardiac cycle and cardiac output?</div> <table><tr><th>BLOOD GROUP</th><th>ANTIGENS</th><th>ANTIBODIES</th><th>DONOR GROUP</th></tr><tr><td>A</td><td></td><td></td><td></td></tr><tr><td>B</td><td></td><td></td><td></td></tr><tr><td>AB</td><td></td><td></td><td></td></tr><tr><td>O</td><td></td><td></td><td></td></tr></table> <div>b) Complete the given table to show the donors compatibility.</div> <div>c) What is evident from the above table? Comment.</div> <div>OR</div>	BLOOD GROUP	ANTIGENS	ANTIBODIES	DONOR GROUP	A				B				AB				O				5
BLOOD GROUP	ANTIGENS	ANTIBODIES	DONOR GROUP																			
A																						
B																						
AB																						
O																						

	<p>a) Differentiate between True ribs and False ribs.</p> <p>b) Explain sliding filament theory of muscle contraction with neat sketches.</p> <p>c) Identify the image given below and replace the letters A, B and C with correct terms.</p> 	
32.	<p>a) What is aestivation?</p> <p>b) Classify the 4 major types with one example for each.</p> <p>c) Give suitable figures.</p> <p style="text-align: center;"><b>OR</b></p> <p>a) Differentiate dicot root and dicot stem based on their epidermis, cortex and vascular bundle.</p> <p>b) Identify the terms i) Bulliform cells    ii) Casparian strip</p>	5
33.	<p>Give a schematic representation showing the classification of Kingdom Animalia with one example for each.</p> <p style="text-align: center;"><b>OR</b></p> <p>a) Starch, Cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against each.</p> <p>Cotton fibre _____</p> <p>Exoskeleton of Cockroach _____</p> <p>Liver _____</p> <p>Peeled potato _____</p> <p>b) What is a peptide bond? Illustrate the formation of the bond in a dipeptide.</p> <p>c) What is competitive inhibition? Give an example of a natural type of inhibition in humans.</p>	5