

INTERNATIONAL INDIAN SCHOOL- DAMMAM

I TERMINAL EXAMINATION

2012-2013

XI BIOLOGY

Time- 3 Hours

Max. Marks-70

SET-A

General Instructions:

- I. All questions are compulsory.
- II. The question paper consists of four sections A,B,C,&D. Section A contains 8 questions of 1 mark each, Section B is of 10 questions of 2 marks each, Section C has 9 questions of 3 marks each whereas Section D is of 3 questions of 5 marks each.
- III. There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks, and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.
- IV. Wherever necessary, the diagrams drawn should be neat and properly labeled.

SECTION-A

1. Following are the taxonomic categories. Give their hierarchical arrangement in ascending order.
Order, Genus, Family, Class, Species, Phylum 1
2. What are co-enzymes? Give an example. 1
3. Name the cells in the gastric glands that secrete HCl. 1
4. What are essential amino acids? 1
5. In which phase of cell cycle DNA replication takes place? 1
6. What are prokaryotic cells? 1
7. Give the balanced over all equation of photosynthesis. 1
8. Name the respiratory centre found in Pons that is responsible for increasing the breathing rate. 1

SECTION-B

9. In what ways the active transportation is different from passive transportation. 2
10. Give the schematic representation of cyclic photophosphorylation. 2
11. Both cellulose and starch are polymers of glucose. Starch gives blue colour with iodine but the cellulose does not give blue color with iodine. Give reason. 2
12. Describe the process of digestion of protein in our stomach. 2
13. What is the significance of cell division-Meiosis? 2
14. What is binomial nomenclature? Who proposed it? Give the scientific name of House fly. 2
15. Draw a neat and labeled diagram of the sectional view of Mitochondrion. 2
- OR
- Draw a neat and labeled diagram of the sectional view of Chloroplast. 2
16. What are Ribosomes? With respect to density and size what is the difference in the ribosomes of prokaryotic and eukaryotic cells? 2
17. Few gaps are left in the following table indicating the action of pancreatic juice on food in the small intestine. Fill the gaps A, B, C, and D. 2
- | Substrate | Enzyme | Product |
|----------------------|------------------|---------------|
| Polysaccharides | A | Disaccharides |
| Fats | Lipase | B |
| DNA and RNA | C | Nucleotides |
| Peptones & Proteoses | Carboxypeptidase | D |
18. Discuss the role of Haemoglobin in the transportation of O₂ and CO₂. 2

SECTION-C

19. What are taxonomical aids? Discuss the role of museum as a taxonomical aid. 3
20. What is a mesosome in a bacterium? Mention the functions that it performs. 3
21. What is metabolism? Differentiate between anabolic and catabolic pathways. 3

22. What are the major transport mechanisms for CO_2 ? Explain. 3
23. How does cytokinesis in plant cells differ from that in animal cells? 3
24. What are accessory photosynthetic pigments? How they are organized in the Grana? Mention their two functions. 3
25. Give the identifying features of sub-metacentric, acrocentric and telocentric chromosomes with the help of labeled diagrams. 3
26. Differentiate between nucleoside and nucleotide. Give one example of each. 3
27. What are the major events take place during anaphase of cell division mitosis?
OR
What are the major events take place in the anaphase I of cell division meiosis? 3

SECTION-D

28. What is Photorespiration? Describe both the anatomical and biochemical adaptations of C_4 plants that help them to avoid photorespiration.
OR
(a) Describe C_3 pathway or Calvin cycle with the help of diagrammatic representation.
(b) Explain how CO_2 concentration influences C_3 plants at high light intensities. 5
29. (a) Draw a neat and labeled diagram of human respiratory system.
(b) Describe the mechanism of normal breathing.
OR
(a) Draw a neat and labeled diagram to show the duct system of Liver, Gall bladder and Pancreas.
(b) Bile juice contains no digestive enzymes, yet it is important for digestion. Why? 5
30. What are proteins? Describe the primary, secondary, tertiary and quaternary structure of proteins.
OR
What are enzymes? Describe the mechanism of enzyme action. In what way the Enzyme catalysts are different from inorganic catalysts? 5

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SECTION-A

1. Following are the taxonomic categories. Give their hierarchical arrangement in ascending order.
Order, Genus, Family, Class, Species, Phylum 1
2. What is the role of Mg^{2+} in the following reaction?

$$\text{Pyruvic acid} + \text{CoA} + \text{NAD}^+ \xrightarrow[\text{Pyruvate dehydrogenase}]{Mg^{2+}} \text{Acetyl CoA} + \text{CO}_2 + \text{NADH} + \text{H}^+$$
1
3. Name the cells in the intestinal mucosa that secrete mucous. 1
4. What are non-essential amino acids? 1
5. In which phase of cell cycle DNA replication takes place? 1
6. What are eukaryotic cells? 1
7. Give the balanced over all equation of photosynthesis. 1
8. Name the respiratory centre found in Medulla oblongata that is responsible for increasing the breathing rate. 1

SECTION-B

9. What is binomial nomenclature? Who proposed it? Give the scientific name of Mango plant. 2
10. Give the schematic representation of cyclic photophosphorylation. 2
11. What is the significance of cell division-Meiosis? 2
12. Both cellulose and starch are polymers of glucose. Starch gives blue colour with iodine but the cellulose does not give blue color with iodine. Give reason. 2
13. Describe the process of digestion of protein in our stomach. 2
14. In what ways the active transportation is different from passive transportation. 2
15. Discuss the role of Haemoglobin in the transportation of O_2 and CO_2 . 2
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| Peptones & Proteoses | Carboxypeptidase | D |
18. What are Ribosomes? With respect to density and size what is the difference in the ribosomes of prokaryotic and eukaryotic cells? 2

SECTION-C

19. What are taxonomical aids? Discuss the role of Zoo Park as a taxonomical aid. 3
20. Differentiate between nucleoside and nucleotide. Give one example of each. 3
21. What are the major transport mechanisms for CO_2 ? Explain. 3

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