

GULF SAHODAYA EXAMINATION (SAUDI CHAPTER)

2014-2015

BIOLOGY-CLASS XI

Time: 3 Hours

Max. Marks: 70

SET-A

General Instruction:

- I. All questions are compulsory.
- II. The question paper consists of five sections A, B, C, D and E. Section A contains 5 questions of 1 mark each, Section B is of 5 questions of 2 marks each, Section C has 12 questions of 3 marks each whereas Section D is of 1 question of 4 marks and section E is of 3 questions of 5 marks each including 2 OTBA questions.
- 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 one 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. Name the scientist who discovered and described the nucleus in a eukaryotic cell. 1
2. State the two functions of Parietal or Oxyntic cells found in the mucosa of our stomach. 1
3. What is Plasmolysis? 1
4. What is residual volume in our lungs? What is the average residual volume for healthy humans? 1
5. Select an organism from the given list that has an open circulatory system.
Earthworm, Cockroach, Fish, Frog 1

SECTION-B

6. Mention the difference between a nucleoside and a nucleotide with any one example of each.

OR

Lipids are micro molecules (800 Da) but why they are found along with macromolecules in the acid-soluble fraction of tissue homogenate. 2

7. What are joints? What type of joints are there between:
i. Atlas and Axis vertebrae 2
ii. The remaining vertebrae in our backbone 2
8. What is hydroponics? How it is useful in studying mineral requirements of plants? 2
9. Our gastro-intestinal tract secrete four major hormones, one of them is CCK. Expand CCK and write two of its functions. 2
10. On the basis of origin and development, structure and form the sclerenchyma in plants may be either fibres or sclereids. Differentiate between fibres and sclereids. 2

SECTION-C

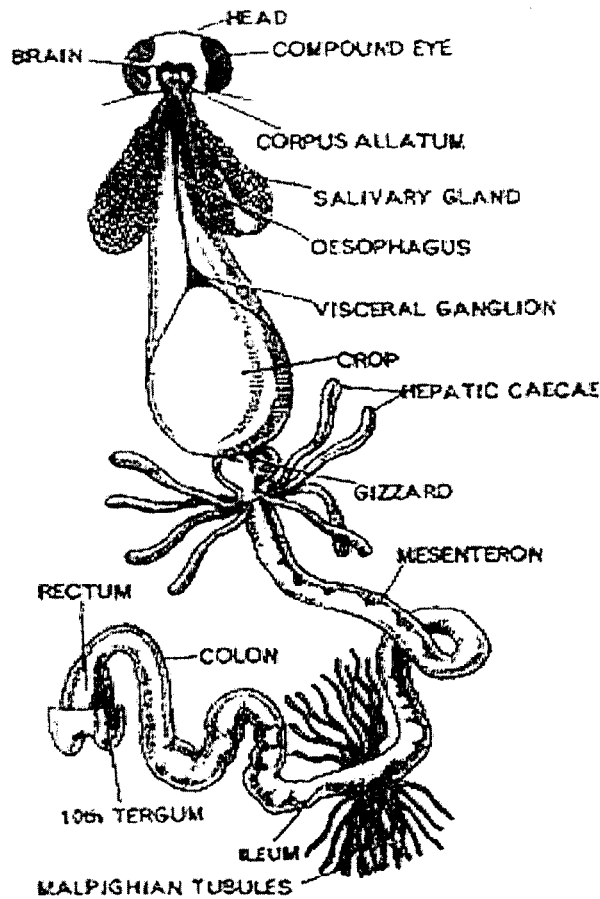
11. Draw a neat and labeled diagram of a mitochondrion.

OR

Draw a neat and labeled diagram of a chloroplast. 3

12. What is aestivation in flowers? Describe imbricate and vexillary aestivation with one example each. 3
13. Usually the wound stop bleeding within 3-7 minutes to prevent loss of blood. Describe the mechanism of blood clotting. 3
14. Define the Arithmetic growth rate and Geometric growth rate. Draw the graph that describes the growth of an organism or their parts in a natural environment. 3
15. Describe the passive and active transport of substances across the cell membrane with the help of any one suitable example. 3

16. Observe the given figure and answer the questions that follow. 3



Alimentary canal of cockroach

- Give the scientific name of cockroach.
- Name the hexagonal structures that constitute the compound eyes.
- Mention one function each of Crop, Gizzard, and Hepatic caecae.
- Write the two functions of Malpighian tubules.

- Give the schematic representation of non-cyclic photophosphorylation occur in the chloroplast during light reactions of photosynthesis. 3
- Draw a neat and labeled diagram of human eye showing its internal parts. 3
- What is placentation in flowering plants? Describe the parietal and basal type of placentation with an example. 3

20. What are enzymes? How is an enzyme activity affected by temperature and concentration of substrate? 3
21. Auxins, Gibberellins, Cytokinins, Ethylene and Abscisic acid are the plant growth regulators or plant hormones. Which one of the plant growth regulators would you use if you are asked to:
- Induce root formation in stem cuttings. -----
 - Quickly ripen fruits. -----
 - Promote nutrient mobilization to delay leaf senescence. -----
 - Elongate internodes prior to flowering (bolting) in cabbage. ----
 - Stimulate the closure of stomata in leaves. -----
 - Promote development of female flowers in Cucumber thereby increasing yield.----- 3
22. (a) Mention how the cell division Mitosis maintains the same number of chromosomes in all the cells of a multicellular organism.
- (b) Mention any two significances of the cell division Meiosis. 3

SECTION-D

23. Kenneth while returning from the school saw a man suddenly fell down at the bus stop. With the help of some passerby he quickly takes the man to a nearby hospital. Doctors examined the man, administered glucose intravenously and took an ECG, later reported that the person is out of danger with normal ECG and asked Kenneth to go home.
- What values are depicted by Kenneth?
 - Draw the normal ECG (Electrocardiogram) and explain what each part of the wave indicates. 4

SECTION-E

24. In C_4 plants like Maize and Sorghum photorespiration does not occur and have greater productivity and yield. Explain this referring to their special type of leaf anatomy and biochemical pathway (C_4 cycle).

OR

Give the schematic representation of Glycolysis highlighting the steps where NADH+H and ATP are formed.

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Section: Open Text- Based Assessment (OTBA) Questions

Class XI

Subject – Biology (Code: 044)

Instructions for Students:

01. These questions are based on one of the themes provided to you by the Board.

02. Please ensure that you get a copy of the relevant themes from the school to refer while answering the questions.

03. Each Question carries 5 marks.

04. The suggested word limit for the questions is 100-120 words. However depending on the question, your answer could be shorter/ longer. It is important to present your views, arguments and conclusions logically, coherently in your own language; based on the concepts learnt during teaching learning sessions till class XI, their applicability with respect to the open text material and your own awareness of the given theme.

25. You must have observed that there are more urinals for males and less for female all over the city. Discuss the issue. **(5 MARKS)**

26. There are several open urinals for males. List three disadvantages of having these and suggest a design to overcome the problems associated. **(5 MARKS)**