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Code Number 44/



INDIAN SCHOOL MUSCAT
SECOND TERM EXAMINATION
SUBJECT : BIOLOGY

CLASS: XI
29.11.2017

Sub. Code: 044

Time Allotted: 3 Hrs.
Max. Marks: 70

General Instructions:

- (i) There are a total of 26 questions and five sections in the question paper. All questions are compulsory.
- (ii) Section A contains questions number 1 to 5, Very Short Answer type questions of 1 mark each.
- (iii) Section B contains questions number 6 to 10, Short Answer type I questions of 2 marks each.
- (iv) Section C contains questions number 11 to 22, Short Answer type II questions of 3 marks each.
- (v) Section D contains question number 23, Value Based Question of 4 marks.
- (vi) Section E contains questions number 24 to 26, Long Answer type questions of 5 marks each.
- (vii) There is no overall choice in the question paper, however, an internal choice is provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks. In these questions, an examinee is to attempt any one of the two given alternatives.

SECTION A

- 1 Brain is the controlling centre of the body. Different parts of the brain carry out different functions. Give the technical term of the canal that passes through the midbrain.
- 2 Roots obtain oxygen from air in the soil for respiration. In the absence or deficiency of oxygen, root growth is restricted or completely stopped. How do plants growing in marshlands or swamps obtain their oxygen required for root respiration?
- 3 Amino acids can be classified based on their variable group, nature etc. Give two examples of aromatic amino acids.
- 4 Calcium is an important ion needed for muscular contractions. Name the store house of calcium ions in skeletal muscles.
- 5 Alexander Fleming discovered antibiotics which are chemicals that can prevent bacterial growth. Identify the structure in a bacterial cell that helps bacteria to possess antibiotic resistance.

SECTION B

- 6 You have heard about several insectivorous plants that feed on insects. Nepenthes or pitcher plant is one usually grows on shallow water or in marshlands. What part of the plant is modified into a 'pitcher'. How does this modification help the plant for nutrition even though it can photosynthesize like any other green plant?

- 7 Different compounds in our body should be present in precise amounts. Increase or decrease in their level can lead to different disease conditions. Differentiate between glycosuria and ketonuria.

OR

Our kidney is a wonderful organ with vital functions. Kidney regulation is done by our body using different means. What is JGA? Write its significance in kidney function.

- 8 Name the following related to a cell:
- Non membraneous organelle only found in animal cell.
 - Substance that makes up middle lamella
 - Starch storing plastid
 - Outermost layer of bacterial envelope.
- 9 Vascular Bundles are important in conducting various substances in plant body. What are the characteristic differences found in the vascular tissue of gymnosperms and angiosperms.
- 10 Our heart is the main pumping organ of our body. Define stroke volume. What is its volume?

SECTION C

- 11
- Tendrils of grapevines are homologous to the tendrils of pumpkins but are analogous to that of pea. Justify the above statement.
 - What do you mean by radial arrangement of vascular bundle.
- 12
- What are phospholipids? Give one example.
 - Write two secondary metabolites of plants.
- 13 Give examples of the following
- Quarternary structure of protein.
 - Homopolysaccharide
 - Polysaccharide that forms the exoskeleton of arthropod
- 14 Distinguish between
- Exarch and Endarch condition of xylem
 - Interfascicular cambium and intrafascicular cambium
 - Open and closed vascular bundles
- 15 Complete the following statements:
- In Cockroach grinding of food particles is formed by _____.
 - Malpighian tubules help in removal of _____.
 - Hindgut of cockroach is differentiated into _____.
- 16 Our body is has thoracic and abdominal cavities. Explain how thoracic chamber is a closed chamber. Why is such a set up necessary?

- 17 Green plants are the producers of the environment. They have chloroplast to help in photosynthesis. Describe the structure of chloroplast with the help of a labeled diagram.

OR

In the body of living organisms every reaction is catalysed by enzymes. What is activation energy? What effect does an enzyme have on activation energy?

- 18 Cell is the basic structural and functional unit of life. Contribution of different scientists at different times gave us the details of a cell. Who discovered the ribosomes? Differentiate between the ribosomes of eukaryotes and prokaryotes.
- 19 Digestion is a breaking down process involving various hydrolyzing enzymes at different stages. Briefly describe starch digestion in human body till it forms monosaccharides.
- 20 Human body is made up of different types of tissues. List various functions of epithelial tissue.
- 21 What are cell junctions? Name the different types of cell junctions.
- 22 Khadeeja was wondering how the doctor s can interpret about the functioning of heart by looking at a graph. Her friend Keerthana, being a medical student explained her about ECG. Draw a standard ECG and explain the different segments in it.

SECTION D

- 23 Sanjay was reading that the pairing of homologous chromosomes at zygotene of meiosisI is called 'Synapse'. His mother being a biology teacher corrected him and explained the terminologies related to Prophase I of cell division.
- What was the correction done by Sanjay's mother?
 - At what stage crossing over takes place?
 - What happens during diplotene stage?
 - What value is shown by Sanjay's mother?

SECTION E

- 24
- List main differences between mitosis and meiosis.
 - Write the significance of mitosis.
 - What is interkinesis?

OR

Enlist the 4 steps involved in the catalytic action of an enzyme. Give examples of a co enzyme and prosthetic group.

- 25 Draw a neat labeled diagram of human ear and label 10 parts in it.

OR

How many vertebrae in all, do we have? Categorize them on the basis of their location and give the specific number in each category.

- 26 Explain the process of secondary growth in the stems of woody angiosperms with the help of schematic diagrams. What is its significance?

OR

Describe the internal structure of dorsio-ventral leaf with the help of labeled diagram.

End of the Question Paper