

Biology - II
Part - A - Structured Essay
Answer all Questions in this paper.
(Ten marks are allocated for each question)

(01). (A). (i) What are the elements found in trace amounts in plants, but large amounts in animals?

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(ii) Briefly describe the activity of amylase on Starch.

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(iii) What is a Lipid?

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(iv) Mention three varieties of Lipids occur in organisms except Fats and Oils.

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(v) What is known as the Quaternary Structure of a Protein? Name one example for it.

Quaternary Structure

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example.....

(vi) State the main function of Proteins given below.

Protein	Function
a. Keratin
b. Albumin
c. Myoglobin
d. Insulin
e. Actin

c. Conversion of fats to carbohydrates

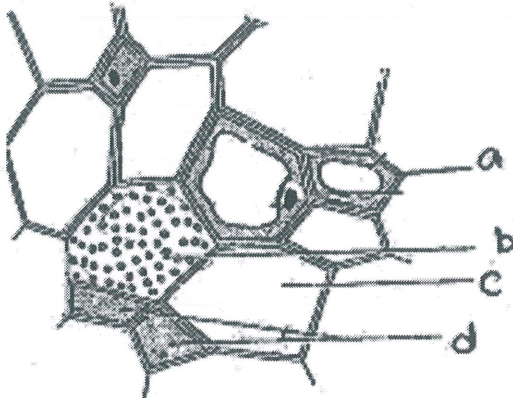
(v). a. What is called a Cytoskeleton?

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b. Mention three functions of it.

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(C)



(i) Name the above diagram

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(ii) Name the parts a, b, c, d.

- a.
- b.
- c.
- d.

(iii) State the type of Connective tissue found in given places.

- a. Inter Vertebral disc
- b. Rib Cartilages
- c. Dermis
- d. Epiglottis

(iii) Name a class of animals with these features. Open circulatory System, respiratory Pigments and Antenna.

(iv) Write one specific excretory structure that can be seen among given groups of animals.

Animal group	Special Excretory Structure
(a) Polycheta
(b) Turbellaria
(c) Arachnida
(d) Amphibia
(e) Crustacea

(C). (i) A list of Organisms and some important features that can be seen among them are given below.

List of Names

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|------------------------|--------------------------|---------------------------|
| (1) <i>Obelia</i> | (6) <i>Paramecium</i> | (11) <i>Sargassam</i> |
| (2) <i>Bipalium</i> | (7) <i>Penicillium</i> | (12) <i>Gelidium</i> |
| (3) <i>Allomyces</i> | (8) <i>Saccharomyces</i> | (13) <i>Pinus</i> |
| (4) <i>Selaginella</i> | (9) <i>Anabaena</i> | (14) <i>Necartor</i> |
| (5) <i>Clostridium</i> | (10) <i>Ulva</i> | (15) <i>Nephrolepis</i> |
| | | (16) <i>Chlamydomonas</i> |

Select the corresponding organism to each characteristic from the list and write correct number of the relevant organism.

eg :- A Protista with Pseudopods

.....16.....

Features

Number

- | | |
|--|-------|
| 1. A heterotroph which fixes Nitrogen. | ..... |
| 2. Having a branched Conidiophore. | ..... |
| 3. An autotroph without Chloroplasts. | ..... |
| 4. A diploblastic marine organism. | ..... |
| 5. Display Homogenous alternation of Generation | ..... |
| 6. A freelifving triptoplactic Aceoelomate | ..... |
| 7. A ciliate with contractile vacuoles. | ..... |
| 8. An aquatic fungal variety, which produces motile gametes. | ..... |
| 9. Seedless palnt with Heterospory | ..... |
| 10. A monoecious gametophyte. | ..... |
| 11. Pathogenic Nematode | ..... |
| 12. Heterosporic plant with naked seeds | ..... |
| 13. Unicellular organism which reproduce through budding. | ..... |
| 14. Photosynthetic Organism with Chlorophyll C pigment. | ..... |
| 15. A marine Rhodophyta. | |

(b) Name three factors affect on "Resting Potential" of a Neuron.

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(v) What are the factors, which affect the speed of transmission of nerve impulse.

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(B) (i) Different types of Nervous systems are found among Animal Phyla. Name one phylum suits with given describing Nervous Systems.

(a) Nervecord with well modified eyes and ganglion.

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(b) Having a Nerve net with multi-polar neurons and synapses without Nerve cord.

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(c) Having giant nerves in Double Ventral Solid Nerve cord.

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(d) A pair of lateral longitudinal nerve cord with cerebral ganglion.

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(e) Single Dorsal Tubular Nerve cord.

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(ii) Draw a labelled diagram of a Vertebrate Motorneuron to illustrate the structure in given space below.

(iii) Main parts of the Human brain are given below in brackets.

Hormone

Main Function

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(iv) Name three endocrine glands, which synthesize, steroid hormones in Human body.

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(v) State the main growth substances which stimulate these activities in plants.

(a) Breaking seed dormancy

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(b) Induce Cell division

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(c) Apical Dominance

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(d) delaying of leaf aging

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(e) Ripening of fruits

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(f) Inhibit Leaf fall

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(4) (A) Natural resources should be used sustainably.

(i) What is meant by the term "Natural resources".

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(ii) Soil is a Natural Resource. What are the Pollutants which affect Soil Pollution.

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(iii) (a) Name three Solid Wastes.

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(b) State four environmental issues caused due to heaping of Solid Wastes on soil surface exposed to environment.

(C) (i) What do you understand by the terms given below.

(a) **Eco System**

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(b) **Environmental Niche**

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(ii) (a) When was said to be the origin of the earth occurred?

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(b) When did the origin of the modern man occur?

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(iii) (a) Write the names of five gases said to be found in the Primordial atmosphere.

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(b) Name four main air pollutants which pollutes the atmosphere.

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(iv) (a) Name the Scientist, who introduced the theory of Biochemical evolution first?

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(b) Mention the nutrition method and respiration method of organism originated first on earth.

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(v) Name the period of Archaeozoic that gave rise to the origin of these organisms.

(a) Bacteria

(b) First Amphibian

(c) Dinosaurs