BIOLOGY

NCERT - FULL MARKS BIOLOGY(TAMIL)

BIOMOLECULES

Question

1. What are macromolecules? Give example.

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2. Illustrate a glycosidic, peptide and a phospho-diester bond.

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3. What is meant by tertiary structure of proteins?

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4. Find and write down structures of 10 interesting small molecular weight biomolecules. Find if there is any industry which manufactures the compounds by isolation. Find out who are the buyers.

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5. Proteins have primary structure. If you are given a method to know which amino acid is at either of the two termini (ends) of a protein,

can you connect this information to purity or homogeneity of a protein?

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6. Find out and make a list of proteins used as therapeutic agents. Find other applications of proteins (e.g., cosmetics, etc.)

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7. Explain the composition of triglyceride.

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8. Can you describe what happens when milk is converted into curd or yoghurt from your understanding of proteins?

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9. Can you attempt building models of biomolecules using commercially available atomic models (Ball and Stick models).

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10. Attempt titrating an amino acid against a weak base and discover the number of dissociating (ionizable) functional groups in the amino acid.

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11. Draw the structure of the amino acid, alanine.

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12. What are gums made of? Is Fevicol different?

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13. Find out a qualitative test for proteins, fats and oils, amino acids and test any fruit juice, saliva, sweat and urine for them.

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14. Find out how much cellulose is made by all the plants in the biosphere and compare it with how much of paper is manufactured by man and hence what is the consumption of plant material by man annually. What a loss of vegetation!

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15. Write down the properties of enzymes.

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Evaluation

1. The most basic amino acid is

A. Arginine

B. Histidine

C. Glycine

D. Glutamine

Answer:

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2. An example of feedback inhibition is

A. Cyanide action on cytochrome

B. Sulpha drug on folic acid synthesiser bacteria

C. Allosteric inhibition of hexokinase by glucose-6-phosphate

D. The inhibition of succinic dehydrogenase by malonate

Answer:

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3. Enzymes that catalyse interconversion of optical, geometrical or positional isomers are

A. Ligases

B. Lyases

C. Hydrolases

D. Isomerases

Answer:

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4. Proteins perform many physiological functions. For example some functions as enzymes. One of the following represents an additional function that some proteins discharge :

A. Antibiotics

B. Pigment conferring colour to skin

C. Pigments making colours of flowers

D. Hormone

Answer:

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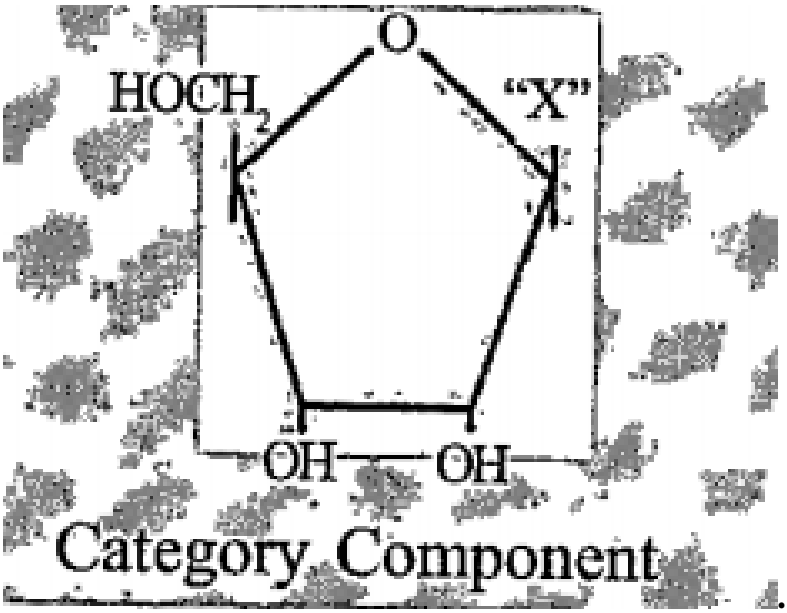
5. Given below is the diagrammatic representation of one of the categories of small molecular, weight organic compounds in the living tissues.Identify the categor shown

and the one blank component 'X' in it:



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6. Distinguish between nitrogenous base and a base found in inorganic chemistry.

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7. What are the factors affecting the rate of enzyme reaction?

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8. Briefly outline the classification of enzymes.

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9. Write the characteristic features of DNA.

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10. Explain the structure and function of different types of RNA.

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