

SARASWATI



HEAD OFFICE

208, CD, LOCAL SHOPPING CENTER
AGGARWAL SHOPPING PLAZA,

BRANCH -1

AYODHYA CHOWK SEC -3
ROHINI

BRANCH -2

DC CHOWK SEC- 9, ROHINI

9TH & 10TH MATHS / SCIENCE
11TH & 12TH – PHYSICS / CHEMISTRY / MATHS / BIOLOGY
EXCLUSIVE BATCH FOR NEET / JEE ASPIRANTS
Ph no. 9696 500 500 / 9696 400 400

Ch- 9 Biomolecules

1. Draw the structure of amino acid, alanine.

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2. Why do amino acids change their structure in different pHs?

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3. Nucleotides are phosphorylated nucleosides.

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4. Proteins are polymers of amino acids. Name the bond which link two amino acids.

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5. Give an example of quaternary structure of protein.

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6. Why is cellulose considered as a homopolymer?

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7. Name the polysaccharide which constitutes the exoskeleton of arthropods.

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8. Why is living state a non-equilibrium steady state?

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9. Why does an enzyme catalyse only one kind of a reaction?

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10. How do you testify that cofactors play a vital role in enzyme functioning?

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11. What is amino acids?

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12. Write the formula of palmitic acid.

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13. Name one lectin and one essential oil in plants.

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14. Name the vitamin component of coenzyme, NAD.

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2 marks

15. Amino acids are substituted methanes. Justify. Why are they called α -amino acids?

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16. How is trihydroxy propane commonly called? Write its structural formula.

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17. Explain the composition of triglyceride.

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18. What are macromolecules? Give examples.

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19. Given below are the pairs of some proteins and their functions. Which out of these is not a matching pair and why?

Protein	Function
(a) Collagen	- Intercellular ground substance
(b) Antibody	- Fight infectious agents
(c) Insulin	- Enzyme
(d) GLUT – 4	- Enable glucose transport into cells

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20. Can you describe what happens when milk is converted into curd or yogurt, from your Understanding of proteins.

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21. Starch, Cellulose, Glycogen and Chitin are polysaccharides found among the following. Choose the one appropriate and write against each:

- (a) Cotton fibres.....
- (b) Exoskeleton of cockroach.....
- (c) Liver.....
- (d) Peeled potato.....

22. Who proposed the double-helical model of DNA? Why are the two strands of DNA described as antiparallel?

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23. Illustrate the nature of bonds linking monomers to make polymer in case of polysaccharides and proteins.

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24. Select an appropriate chemical bond among ester bond, glycosidic bond, peptide bond and hydrogen bond and write against each of the following:

- (a) Polysaccharide.....
- (b) Protein.....
- (c) Fat.....
- (d) Water.....

25. Living state and metabolism are synonyms. Justify.

Or

Without metabolism, there cannot be living state. Justify.

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26. Name the group of organisms whose enzymes show thermal stability upto 80°-90°C. Where do they live?

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27. (a) What is the function of carbonate anhydrase?

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(b) How many times does carbonic anhydrase accelerate the reaction?

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28. The concentration of a substrate is allowed to increase continuously. Explain the effect of this rise on the rate of enzymatic reaction.

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29. What is meant by tertiary structure of proteins?

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30. Illustrate a glycosidic, a peptide and a phosphodiester bond.

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5 marks

31. 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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32. Explain the structure of DNA. Write any three major differences between DNA and RNA.

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33. Describe the important properties of enzymes.

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38. Proteins are polypeptides or linear chains of amino acids linked by peptide bonds; there are twenty different amino acids that go to form proteins.

(a) Why are proteins called heteropolymers and not homopolymers?

(b) Why are essential amino acids to be taken in our diet?

(c) What value is exhibited by the different functions carried out by different proteins?

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