BIOLOGY

BOOKS - PRADEEP BIOLOGY (HINGLISH)

BIOMOLECULES

Curiosity Questions

1. Why do the arctic and antarctic fishes have abundant unsaturated fatty acids ?

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2. Why do animals usually store energy as fat and plants as starch ?

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3. How can an amino acid be basic or neutral in nature ?

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4. What are enkephalins ?

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5. Why is large amount of energy needed to form the higher nucleotides ?

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6. What is the molecular basis of differences between human siblings ?

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7. What determines the number and sequence of amino acids in a polypeptide chain ?

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8. Why does cooking change the texture of an egg ?

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9. Which features of DNA double helix provide basis for its precise replication ?

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10. How do enzymes act in waste disposal ?

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11. What chemical activities the enzymes are known to cause in their substrates ?

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12. Which is the fastest known enzyme ?

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13. How are the genes that code for enzymes regulated ?

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Notable Question

1. Cholesterol is a crucial molecule in animals. Why ?

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2. What assists protein molecules to fold in a complex way ?

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3. What are ribozymes ?

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Ncert Exercises

1. What are macromolecules ? Give examples.

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2. Illustrate a glycosidic, peptide and a phosphodiester 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 happenswhen milk is converted into curdsor youghust 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.

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15. Discuss the properties of enzymes.

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Additional Questions Very Short Answer Questions

1. Name the inorganic compounds found in cells.

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2. Which classes of organic compounds occur in cells ?

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3. Mention the four major elements of life.

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4. What are macronutrients ?

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5. Which mineral occurs in haemoglobin ?

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6. Name the monosaccharides found in nucleic acids.

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7. Which lipid can cause heart ailments ?

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8. Name the simplest amino acid.

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9. What are peptides ?

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10. Which is the most common energy carrier in the cell ?

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11. What is cohesion ?

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12. Define imbibition.

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13. Name the oily material secreted by oil glands of mammalia skin.

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14. What do NAD and FMN stand for ?

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15. Name a lipid that changes to vitamin D on activation by UV light.

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16. What is imbibition of water due to ?

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17. What are higher nucleotides ?

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18. How does sweat cool our body ?

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19. Name the organisms which can synthesise essential amino acids and fatty acids.

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20. What are rare amino acids ?

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21. Name two common homopolysaccharides.

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22. Which is the most abundant carbohydrate in nature ?

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23. Mention two heteropolysaccharides.

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24. Name one fibrous and one globular protein.

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25. What is the role of myoglobin ?

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26. To which class of macromolecules does the snake venom belong ?

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27. What do DNA and RNA stand for ?

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28. Mention the two main types of DNA.

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29. Are the two strands of DNA molecule identical ?

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30. Name the 3 kinds of RNAs and a self-reproducing component of chromosomes.

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31. Where is the store of glycogen found in the body ?

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32. How are the glycans named ?

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33. Which organisms store carbohydrates as glycogen ?

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34. Why is cellulose not used as a nutrient in the human gut ?

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35. What provides roughage (fibre) in out diet ?

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36. Name the organisma which produce the enzyme cellulase.

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37. What are monomeric and oligomeric proteins ?

Watch Video Solution

38. What is fibroin ?

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39. Why are the nucleic acids so named ?

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40. Give alternative names for mRNA.

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41. What are enzymes ?

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42. What is the enzyme that works only in the presence of a cofactor or coenzyme called ?

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43. What is a holoenzyme ?

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44. Give the term used for the enzymes having slightly different molecular structure but simillar catalutic action.

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45. What are proenzymes (zymogens) ?

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46. Chemicals that stop or slow down the function of an enzyme are called inhibitors. Is it correct ?

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47. How are enzymes named these days ?

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48. Name the class of enzymes which split large molecules into smaller ones.

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49. What are ligases ?

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50. Name the principle on which the enzymes work.

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51. Pepsin is an intracellular/extracellular enzyme. Which is correct?

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52. Which structural level enables the proteins to function as enzymes ?

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53. What basis is generally used in enzyme classification?

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54. Mention the chemical nature of enzyme.

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55. How many enzymes are involved in changing glucose to lactic acid ?

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56. Which enzyme the rennet tablets contain ? Give its source also.

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57. What are optimum temperature and pH for the enzymes to act best ?

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58. How does radiation inactivates the enzymes ?

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59. What is autocatalysis ?

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60. What is the name given to that part of the enzyme where catalytic work is carried out ?

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61. What is the main role of vitamins.

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Additional Questions Short Answer Questions

1. Which is the most abundant component of living matter and why ?

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2. Name the metal ions found in the chloroplasts. Also mention the O_2-carrying and O_2-storing

pigments.

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3. What is grape sugar ? Give its utillity in cells.

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4. How does souring of milk occur ?

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5. Name the essential fatty acids. Why are they so called ?

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6. What is the starting point in the production of food and why ?

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7. What is an amphipathic lipid ? Cite an example.

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8. At which positions does nitrogen occur in purines and pyrimidines ?

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9. How much energy is released by hydrolysis of ATP ?

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10. Name the processes by which macromolecules form/breakdown from/into micromolecule

monomers. List the common macromolecules.

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11. Write a few words on animal cellulose.

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12. How can you known that wheat flour is mixed with maize flour ?

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13. Name two different kinds of helical maccromolecules. Give the number of monomers per turn of the helix.

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14. Mention a protein having quaternary structure. Name its polypeptide chains also.

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15. Name the RNA having the shape of a clover leaf. Mention its various regions.

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16. Mention two structural features of prokaryotic DNA.

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17. Give the two main types of eukaryotic DNA. Also mention their locations.

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18. What are the two types of mRNAs ? How do they differ ?

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19. Where is the starch stored in the plant cells ?

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20. What is animal cellulose ?

Watch Video Solution

Watch Video Solution

21. How do the prokaryotic DNA and eukaryotic organeller DNA resemble ?

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22. Give the role of genetic code.

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23. Name the most abundant organic compound in nature. Who explained the chemical structure of

DNA ?

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24. Who coined the terms 'ferment' and 'enzyme' ? How do they differ ?

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25. Can a chemical reaction occur without an enzyme ? Explain your answer.

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26. Give two similarities and two differences between inorganic catalysts and biocatalysts.

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27. What is the role of temperature in the preservation of food ?

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28. What is a zymogen ?

Watch Video Solution

29. What is the contribution of IUB to enzymology ?

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30. Which enzymes are synthesized under the directions of many genes ?

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31. What is the turnover number of an enzyme ?

Watch Video Solution

32. What are enzyme inhibitors ?

Watch Video Solution

33. When does a cofactor becomes a prosthetic group ?

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34. Name the two types of control mechanisms that regulate enzyme action.

Watch Video Solution

35. State the Beadle and Tatum theory.

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36. Fill in the blanks :

(i)A certain amount of _____ is needed to initiate any _____ reaction.

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37. Fill in the blanks :

(ii)Many enzymes contain cetain ___ substances

associated with them. There substances are called

____

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38. Fill in the blanks :

(iii)The fastest known enzyme is ____ found in red blood cells. It hydrates 36 millions molecules of CO_2 to ___ and ___ in just a minute.

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39. Fill in the blanks :

(iv)The enzymes which work only in the presence of cofactors are called ___ and a working combination of the two is called _____

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40. Fill in the blanks :

(v)Certain chemicals also limit or prevent the function of an enzyme . There are called _____

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41. Match the items given in column I with appropriate items (one or more) of Column II.

Column I	Column II
(*i*) Ribozymes	(*a*) Simple metal ions
(*ii*) Cofactors	(*b*) RNA molecules
(*iii*) Apoenzyme + cofactor	(*c*) Holoenzyme
(*iv*) Modulators	(*d*) Allosteric inhibition
	(*e*) Complex organic compounds

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42. Fill in blank with the help of given words below :

Monera , Active, Passive, Dinucleoside uridine, SER, Deoxythymine, Glycoprotin, RER, Glyceride, Glycerol, Animal , Plant, Animalia, Allosteric enzyme, Competitive feed back, Leying cell, sertoli cell, Glycogen, Triacylycerides, Protista.

1. FAD and NAD enzyme cofactor are formed of .....

2. The maximum fat stored inour body is in the form of .....

3. Thymidine in DNA is replaced by ..... in RNA.

4. The activity of enzyme inhibited when modulators bind to its is known as ..... inhibition.

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43. 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) Protin . . . . . .

(c) Fat . . . . . .

(d) Water . . . . . .

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44. Write the name of any one amino acid, sugar nucleotide and fatty acid.

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45. How are proshetic groups different from cofactors ?

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46. Where are the following found ?

Glycosidic bonds, Ester bonds, Peptide bonds, Energy-rich bonds, Double bonds.

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47. List the classes of monosaccharides. Give one example of each.

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48. Explain the term polyunsaturates.

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49. How is a peptide bond formed ?

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50. Name the chemical constituents of nucleotides.

Watch Video Solution

51. Define a chemical element or compound.

Watch Video Solution

52. What are polyunsaturates ?

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53. Give general chemical formulae for monosaccharides, disaccharides and amino acids.

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54. Arrange the following carbohydrates in the order of incereasing complexity of chemical structure : fructose, starch, oligosaccharides, maltose, triose.

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55. List the natural source and the constituent units of (a) sucrose, (b) lactose, (c) ATP, and (d) fat

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56. Oil does not dissolve in water. Give a scientiffic explanation.

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57. Give the number of (a) chemical in the cellular pool, (b) phosphate groups in energy carriers, and (C) amino acids in the proteins.

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58. Mention one example each of basic, acidic and neutral amino acids.

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59. Give a brief account of starch grains.

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60. List the properties of polysaccharides or protiens.

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61. Describe the Waston-Crick model of DNA.

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62. Give the role of DNA.

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63. The two strands of DNA molecule are antiparallel. Explain.

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64. Where do you find the following -in DNA, RNA, or both ?

(a) Ribose , (b) Deoxyribose , (c) Adenine , (d) Uracil , (e) Guanine.

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65. Name one element invariably found in protiens but not in all carbohydrates and lipids. Name another element which is generally found in protiens but not in all carbohydrates.

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66. Why are starch and glycogen molecules suitable as storage products ?

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67. Proteins have been called 'biological polymers'. Explain.

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68. Although all protiens are made of the same amino acids, explain how your proteins are different

from those of a dog.

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69. What are jumping genes ?

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70. Why is processing of RNAs necessary ?

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71. Distinguish between the terms glycogenesis and glycogenolysis. Where and why do they occur ?

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72. Draw a labelled figure of mRNA molecule.

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73. Give the importance of tertiary structure of protein molecules.

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74. Mention practical applications of protein specificity.

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75. What features of DNA help in identifying its source and in classification ?

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76. Give various dimensions of DNA.

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77. Name the various forms of DNA. Which is the most common ?

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78. What is the utility of enzymes in a cell ?

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79. Give the chemical nature of enzymes.

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80. What are holoenzymes ? How are they formed ? How do they work ?

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81. Write a note on enzyme specificity.

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82. Give the realtionship between cofactor, coenzyme, apoenzyme and holoenzyme.

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83. Describe the competitive inhibition of enzyme action.

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84. Why are the enzymes called biocatalysts ?

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85. Give a brief account of allosteric inhibition of enzyme action.

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86. List 3 important properties of enzymes. or

What does an enzyme do in terms of energy requirement of a reaction ? What would happen if the enzyme did not play this role ?

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87. What kind of reaction does each of the following groups of enzymes catalyse ?

(a) Hydrolases (b) Dehydrogenases (c) Lyases and (d) Transferases

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88. Discuss the properties of enzymes.

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89. How does the heat increase rate of enzyme action?

Watch Video Solution

90. Distinguish between a simple enzyme and an enzyme system.

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91. Name the various types of enzyme inhibitions.

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92. What is biochemical adaptation with reference to enzymes ?

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93. Fill in the blanks :

(i) Carbon,_____ hydrogen and _____ are the principle (major) elements.

(ii) Nearly_____ % of the body of jellyfish is water, and about _____ % of human body is water.

(iii) Water has a _____ boiling point and a ____ heat of vaporisation.

(iv) A mineral is said to be _____ if it plays a direct role in the structure and functioning of organism's body, it cannot be replaced by another mineral, and its _____ adversely affects organism's growth and reproduction.

(v) Common hexoses are glucose, _____ and _____

.

(vi) Biologically important disaccharides are _____ ,

_____ and _____ .

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94. Match the items given in column I with appropriate items (one or more) of column II :

Column I	Column II
(*i*) Tetroses	(*a*) Ribose
(*ii*) Pentoses	(*b*) Galactose
(*iii*) Heptoses	(*c*) Maltose
(*iv*) Hexoses	(*d*) Erythrose
(*v*) Disaccharides	(*e*) Threose
	(*f*) Arabinose
	(*g*) Pseudoheptulose

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95. Recognize the compounds from their common names given below :

(i) Grape sugar (ii) Fruit sugar (iii) Brain sugar (iv) Malt sugar (v) Cane or table sugar (vi) Milk sugar (vii) Plant sterol or phytoerol (viii) Earwax (ix) Wool fat.

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96. Give structure of following compounds :

(i) Glucose (ii) Fructose (iii) Galactose (iv) Ribose sugar (v) Deoxyribose sugar (vi) Cholesterol.

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97. Fill in the blanks :

(i) Glycogen is the main reserve food material of _____ cells. It is known as the _____ .

(ii) Starch is the reserve food material of _____ cells. It has two components : amylose and _____ .

(iii) Some important heteropolysaccharides include hyaluronic acid, heparin, chondroitin sulphate etc. which are together grouped as _____ .

(iv) _____ of connective tissue, actin and myosin of muscles and _____ of scales, feathers, hairs etc. are fibrous proteins.

(v) DNA has _____ and _____ (double-ringed

purines) and _____ and _____ (single-ringed pyrimidines).

(vi) There are three major types of RNA in every cell : m- RNA, _____ and _____ .

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98. Match the items given in column I with appropriate items (one or more) of Column II.

Column I	Column II
(i) Purine	(*a*) Cytosine
(ii) Pyrimidine	(*b*) Adenine
(iii) Structural polysacchride	(*c*) Glycogen
(iv) Storage polysaccharide	(*d*) Guanine
(v) Heteropolysaccharide	(*e*) Uracil
	(*f*) Cellulose
	(*g*) Hemicellulose

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99. Schematically represent primary, secondary and tertiary structures of a hypothetical polymer say for example a protein.

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Additional Questions Long Answer Questions

1. Describe the role of carbohydrates in the cells.

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2. What are the functions of amino acids ?

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3. Give a brief account of coenzymes.

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4. Give an account of the composition and functions of nucleotides.

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5. What is the role of lipids in organisms ?

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6. Account for the following : (a) Phospolipids form a thin layer on the surface of an aqueous medium, (b) Amino acids can be basic.

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7. What is the function of ATP in cell metabolism ? Explain with the aid of a diagram how its structure makes this possible.

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8. Make a list of essential fatty acids and essential amino acids. Why are they called essential ?

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9. Tabulate differences between saturated and unsaturated fatty acids.

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10. How do the purines differ from the pyrimidines ?

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11. Write a note on terpenes or prostaglandins.

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12. Give differences between nucleotides and nucleosides.

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13. What is cholesterol ? Give its role in the body. How is it harmful ?

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14. Give a brief account of waxes secreted by organisms.

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15. Why do the birds preen themselves ?

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16. Tabulate differences between micromolecules and macromolecules.

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17. Give differences between oligosaccharides and polysaccharides.

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18. Draw the structure of an amino acid.

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19. How are amino acids bonded together ? Describe how these bonds are formed.

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20. Describe the structure and function of ATP.

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21. Write notes on : (a) Steroids (b) Wax

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22. Describe the structure of phospholipid. How are they arranged in the cell membrane ?

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23. Explain how glycosidic bonds are formed ?

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24. How is the DNA synthesized in vitro ?

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25. Discuss the functions of polysaccharides.

Watch Video Solution

26. List the functions of protiens in cells.

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27. Tabulate differences between DNA and RNA.

Watch Video Solution

28. Give the summary of DNA characteristics.

Watch Video Solution

29. Describe the structure of DNA or RNA .

Watch Video Solution

30. Write a note on types of RNA.

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31. Give Chargaff's rules about DNA. What do you known about denaturation and renaturation of DNA ?

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32. List the natural source(s), monosaccharide units and functions of the following polysaccharides : starch, glycogen and cellulose.

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33. List the functions of protiens and name one protien that performs each function.

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34. Distinguish between the primary, secondary and tertiary structure of protein.

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35. What is the role of RNA in the cells ?

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36. Write a note on protien specificity .

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37. Which in the second most abundant organ compound (natural polymer)? Write a short note on it.

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38. Tabulate differences between glycogen and starch.

Watch Video Solution

39. Describe primary structure of protein.

Watch Video Solution

40. Explain the lock-and-key hypothesis of enzyme action.

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41. Discuss the factors which affect enzyme activity.

Watch Video Solution

42. How do inorganic catalysts and enzymes resemble ?

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43. Tabulate differences between inorgenic catalysts and enzymes.

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44. Explain the following terms : Turnover Number, Action Site, Denaturation, Autocatalysis, Modulators, Allostery, Ligases, Activation Energy.

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45. How does competitive inhibition of an enzyme occur ? How is such inhibition useful ?

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46. How does competitive inhibition differ from allosteric inhibition ?

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47. How are enzymes named ? How have enzymes been classified recently ?

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48. What role does temperature play in food preservation ? Explain.

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49. Disscus the utility of enzymes.

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50. Describe the important properties of enzymes.

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51. Formation of enzyme substrate complex (ES) is the first step in catalysed reactions. Describe the other steps till the function of product.

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52. What are different classes of enzyme ? Explain any two with the type reaction they catalyse.

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53. Describe various forms of lipid with a few examples.

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Analytical Questions With Answers

1. Vitamins and trace elements have the same role'. Comment on this statement.

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2. Which component of amino acids gives them their unique properties ?

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3. What is the difference in the chemical structure of starch and cellulose ?

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4. What is feedback inhibition ?

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5. What is the difference between pyranose and furanose ring forms of simple sugars ?

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6. While shopping grocery, how would you distinguish a saturated fat or oil from an unsaturated one ?

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7. Enzymes make life possible'. Comment on this statement.

Watch Video Solution

8. Organisms have biochemical adaptability to enviroment'. Comment on this statement.

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9. What are enkephalins ? Give their function.

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10. (a) Which of the following fall in the category of macromolecules present in the cells ? oxygen, maltose, starch, heparin, deoxyribonucleic acid,

glycine, nucleotides, beewax.

(b) Why is cholesterol considered a crucial molecule in animals ?

(c) What are ribozymes ?

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11. (a) which disaccharide is the major sugar of insect haemolymph.

(b) Give atleast two examples of unsaturated fatty acids.

(c) Differentiate between saturated and unsaturated fatty acids (atleast 3 differences).

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12. (a) Name the organic compounds which contain hydrogen atoms oxygen atoms generally in the ratio of 2 : 1.

(b) Name the organic compounds which are commonly termed

(i) brain sugar (ii) grape sugar (iii) fruit sugar (iv) milk sugar (v) malt sugar (vi) cane or table sugar.

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13. (a) Name the plant pigments present in the following :

(i) carrots (ii) tomatoes.

(b) Name the category of micromolecules of the cells whose examples include natural rubber, vitamin K etc.

(c) List any two conjugated lipids.

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14. (a) Name any two neutral amino acids and basic amino acids.

(b) List any three essential amino acids for man.

(c) Name the covalent bond that links two amino acids in the protein.

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15. (a) Which are three components of a nucleotidde molecule.

Name two nitrogenous ofganic bases which have 2 rings joined at 4' and 5' positions.

(c) Differentiate between nucleosides and nucleotides.

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16. (a) Name the main reserve food material of animal cells, also called animal starch.

(b) Which colour this compound gives on reaction with iodine solution ?

(c) efine the terms glycogenesis and glycogenolysis.

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17. (a) What are cofactors ? Give one example.

(b) Differentiate between apoenzyme, coenzyme and prosthetic group.

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18. (a) Which of the following forms of DNA are right-handed double helices ?

B-DNA, Z-DNA, D-DNA.

(b) How many base pairs per turn of the helix are these in the following forms of DNA ?

A-DNA, C-DNA and Z-DNA.

(c) What is satellite DNA ?

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19. (a) What do you mean by Sense and Missense DNA chains ?

(b) Where would you find genetic or genomic RNA ?

Give one example each of single-stranded and double- stranded genetic RNA.

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Practice Questions Multiple Choice Question

1. The substrate combines more readily with enzyme when

A. K_m is high

B. K_m is low

C. K_1 is high

D. K_1 is low

Answer: B

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2. Enzymes increase the rate of biochemical reaction through

A. Lowering activation energy

B. Changing equilibrium

C. Forming enzyme-product complex

D. Forming reactant-product complex

Answer: A

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3. One turn of B-DNA double helix spans a distance of

A. 3.4 nm

B. 2.46 nm

C. 4.56 nm

D. 4.26 nm

Answer: A

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4. Fehling's solution is used for the detection of

A. Glucose

B. Starch

C. All carbohydrates

D. Fats

Answer: A

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5. Of the following, which one is a micronutrient ?

A. Ca

B. N

C. Mg

D. Mn

Answer: D

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6. DNA and RNA are similar in that both

A. Have same pyrimidines

B. Have thymidine bases

C. Have same sugars

D. Are nucleotide polymers

Answer: D

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7. The amino acid essential in man is

A. Serine

B. Creatinine

C. Phenylalanine

D. Aspartic acid

Answer: C

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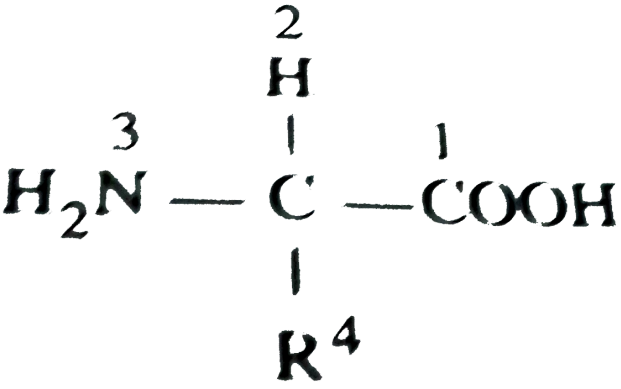
8. A peptide bond is formed between



A. 1 and 3

B. 1 and 2

C. 2 and 4

D. 2 and 3

Answer: A

9. How many molecules of fatty acids occur in a lipid (fat) molecule ?

A. One

B. Two

C. Three

D. Four or five

Answer: C

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10. A sedoheptulose molecule has_____carbon atoms

A. 3

B. 4

C. 6

D. 7

Answer: D

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11. Iodine test is used to detect

A. Fats

B. Carbohydrates

C. Malaria

D. Typhoid

Answer: B

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12. ATP is

A. Purine

B. Nucleoside

C. Nucleotide

D. Nucleosome

Answer: C

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13. Cellulose is made up of

A. Glucose

B. Sucrose

C. Fructose

D. Ribose

Answer: A

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14. On hydrolysis of cane sugar, we can obtain

A. Glucose+galactose

B. Glucose + fructose

C. Glucose + sucrose

D. Glucose + maltose

Answer: B

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15. The most basic amino acid is

A. Arginine

B. Histidine

C. Glycine

D. Glutamine

Answer: A

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16. In fruits, such as 'bhindi', the mucilage is made up of

A. Galactose

B. Mannose

C. Both a and b

D. Lactose

Answer: C

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17. Which one is a non-reducing commercial sugar ?

A. Glucose

B. Fructose

C. Sucrose

D. Lactose

Answer: C

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18. ATP was discovered by _____

A. Karl Lohman

B. Lipmann

C. Bowman

D. Blackman

Answer: A

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19. Which form of RNA has a structure resembling clover leaf ?

A. hnRNA

B. mRNA

C. tRNA

D. rRNA

Answer: C

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20. The following ratio is generally constant for a given species

A. T + C/G +A

B. G + C/A + T

C. A + C/T + G

D. A + G/C + T

Answer: B

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21. Which one of the following statements regarding enzyme inhibition is correct

A. Competitive inhibition is seen when a substrate competes with an enzyme for binding to an inhibitor protein

B. Competitive inhibition is seen when the substrate and the inhibtor compete for the active site on the enzyme

C. Non-competitive inhibition of an enzyme can be overcome by adding large amount of substrate

D. Non-competitive inhibitors often bind to the enzyme irreversibly

Answer: B

22. The catalytic effeiciency of two different enzymes can be compared by the

A. formation of the product

B. the pH of optimium value

C. the Km value

D. moleculae size of the enzyme

Answer: C

23. Enzymes, vitamins and hormones can be classified into a single category of biological chemicals, because all of these

A. help in regulating metabolism

B. are exclusively synthesized in the body of a living organism as at present

C. are conjugated proteins

D. enhance oxidative metabolism

Answer: A

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24. Paraffin wax is

A. ester

B. acid

C. monohydric alcohol

D. cholesterol

Answer: A

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25. About 98 percent of the mass of every living organisms is composed of just six elements including carbon, hydrogen, nitrogen, oxygen and

A. sulphur and magnesium

B. magnesium and sodium

C. calcium and phosphorus

D. phosphorus and sulphur

Answer: D

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26. Prostaglandins are

A. amino acid

B. steroid

C. fatty acid

D. carbohydrate

Answer: C

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27. A competitive inhibitor of succinic dehydrogenase is

A. α-ketoglutarate

B. malate

C. malonate

D. oxaloacetate

Answer: C

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28. An example of feedback inhibition is

A. cyanide action on cytochrome

B. sulpha drug on folic acid synthesizer bacteria

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

D. reaction between succinic dehydrogenase and succinate

Answer: C

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29. Which of the following carbohydrates is not a disaccharide ?

A. maltose

B. lactose

C. sucrose

D. galactose

Answer: D

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30. The amount of usable energy which is available for doing work when the temperature and pressure are uniform throughout the system is called

A. enthalpy

B. activation energy

C. spontaneous energy

D. free energy

Answer: D

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31. Feedback inhibition of enzymes is affected by which of the following :

A. enzyme

B. substrate

C. end products

D. intermediate and products

Answer: C

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32. Choose the correct non-protein amino acid

A. hydroxyproline

B. hydroxylysine

C. cysteine

D. γ amino butyric acid

Answer: D

33. The 'repeating unit' of glycogen is

A. fructose

B. mannose

C. glucose

D. galactose

Answer: C

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34. The protein part of a conjugated enzyme is

A. holoenzyme

B. isoenzyme

C. apoenzyme

D. coenzyme

Answer: C

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35. In human per cent of body weight of carbohydrates, lipids and proteins respectively is

A. 1, 15, 17

B. 15, 7, 7

C. 7, 17, 15

D. 17, 15, 7

Answer: A

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36. Which one of the following is wrongly matched ?

A. fungi - chitin

B. phospholipid - plasma membrane

C. enzyme - lipolysaccharide

D. ATP - nucleotide derivative

Answer: C

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37. An example of non-competitive inhibition is

A. the inhibitition of succinic dehydrogenase by malonate

B. cyanide action on cytochrome oxidase

C. sulpha drug on folic acid synthesizing bacteria

D. reaction of succinic dehydrogenase

Answer: B

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38. Ribose sugar is present in

A. RNA polymerase and ATP

B. RNA and ATP

C. RNA polymerase, RNA and ATP

D. RNA only

Answer: B

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39. Enzymes that catalyse inter-conversion of optical, geometrical or positional isomers are

A. ligases

B. lyases

C. hydrolases

D. isomerases

Answer: D

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40. Which is an organic compound found in most cells ?

A. glucose

B. water

C. sodium chloride

D. oxygen

Answer: A

41. The "lock and key" model of enzyme action illustrates that a particular enzyme molecule

A. may be destroyed and resynthesized several times

B. interacts with a specific type of substrate molecule

C. reacts at identical rates under all conditions

D. forms a permanent enzyme-substrate complex

Answer: B

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42. The effectiveness of an enzyme is affected least by

A. temperature

B. concentration of the substrate

C. original activation energy of the system

D. concentration of the enzyme

Answer: C

Watch Video Solution

43. DNA nucleotides are attached by

A. hydrogen bond

B. covalent bond

C. van der Waals bond

D. electrovalent bond

Answer: A

44. Table sugar is

A. sucrose

B. glucose

C. fructose

D. lactose

Answer: A

45. It is said that elemental composition of living organisms and that of inanimate objects (like earth's crust) are similar in the sense that all the major elements are present in both. Then what would be the difference between these two groups ?

Choose a correct answer from the following.

A. Living organisms have more gold in them than inaminate objects.

B. Living organisms have more water in their body than inanimate objects.

C. Living organisms have more carbon, oxygen and hydrogen per unit mass than inaminate objects.

D. Living organisms have more calcium in them then inanimate objects.

Answer: C

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46. Many elements are found in living organisms either free or in the form of compounds. One of the following is not found in living organisms :

A. Silicon

B. Magnesium

C. Iron

D. Sodium

Answer: A

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47. Aminoacids, as the name suggests, have both an amino group and a carboxyl group in their structure. In addition, all naturally occurring aminoacids (those which are found in proteins) are called L-aminoacids. From this, can you guess from which compound can the simplest aminoacid be made

A. Formic acid

B. Methane

C. Phenol

D. Glycine

Answer: B

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48. Many organic substances are negatively charged e.g., acetic acid, while others are positively charged e.g., ammoniumion. An aminoacid under certain conditions would have both positive and negative charges simultaneously in the same molecule. Such a form of aminoacid is called

A. Positively charged form

B. Negatively charged form

C. Neutral form

D. Zwitter ionic form

Answer: D

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49. Sugars are technically called carbohydrates, referring to the fact that their formulae are only multiple of $C(H_2O)$. Hexoses therefore have six carbons, twelve hydrogens and six oxygen atoms. Glucose is a hexose. Choose from among the following another hexose.

A. Fructose

B. Erythrose

C. Ribulose

D. Ribose

Answer: A

50. When you take cells or tissue pieces and grind them with an acid in a mortar and pestle, all the small biomolecules dissolve in the acid. Proteins, polysaccharides and nucleic acids are insoluble in

mineral acid and get precipitated. The acid soluble compounds include amino acids, nucleosides, small sugars etc. When one adds a phosphate group to a nucleoside one gets another acid soluble biomolecule called

A. Nitrogen base

B. Adenine

C. Sugar phosphate

D. Nucleotide

Answer: D

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51. When we homogenise any tissue in an acid the acid soluble pool represents

A. Cytoplasm

B. Cell membrane

C. Nucleus

D. Mitochondria

Answer: A

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52. The most abundant chemical in living organisms could be

A. Protein

B. Water

C. Sugar

D. Nucleic acid

Answer: B

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53. A homopolymer has only one type of building block called monomer repeated 'n' number of times. A heteropolymer has more than one type of monomer. Proteins are heteropolymers made of amino acids. While a nucleic acid like DNA or RNA is made of only 4 types of nucleotide monomers, proteins are made of

A. 20 types of monomers

B. 40 types of monomers

C. 3 types of monomer

D. only one type of monomer

Answer: A

54. 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. Hormones

Answer: D

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55. Glycogen is a homonpolymer made up of

A. Glucose units

B. Galactose units

C. Ribose units

D. Amino acids

Answer: A

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56. The number of 'ends' in a glycogen molecule would be

A. Equal to the number of branches plus one

B. Equal to the number of branch points

C. One

D. Two, one on the left side and another on the right side

Answer: A

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57. A pure protien should normally have

A. Two ends

B. One end

C. Three ends

D. No ends

Answer: A

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58. Enzymes are biocatalysts. They catalyse biochemical reaction. In general they reduce

activation energy of reactions. Many physico-chemical processes are enzyme mediated. Some examples of enzyme mediated reactions are given below. Tick the wrong entry

A. Dissolving CO_2 in water

B. Untwining the two strands of DNA

C. Hydrolysis of sucrose

D. Formation of peptide bond

Answer: D

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59. Three of the following statements about enzymes are correct and one is wrong. Which one is wrong

A. Enzymes require optimum pH for maximal activity.

B. Most enzymes are proteins but some are lipids.

C. Enzymes are highly specific.

D. Enzymes are denatured at high temperature but in certain exceptional organisms they are effective even at temperature $80^\circ - 90^\circ C$.

Answer: B

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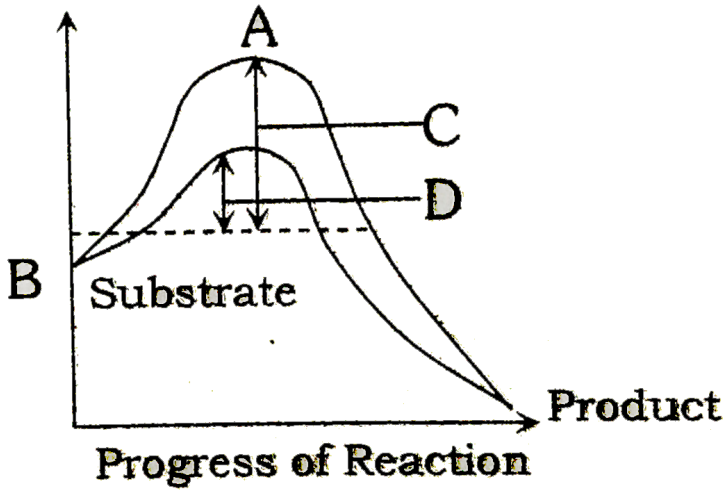
60. The figure given below shows the conversion of a substrate into product by an enzyme. In which one of the four options (a-d) the components of reaction labelled as A, B, C and D are identified

correctly



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61. Which one is true for ATP

A. ATP is prosthetic part of an enzyme

B. ATP is an enzyme

C. ATP is organic ions of enzyme

D. ATP is a coenzyme

Answer: D

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62. Purines have nitrogen atoms at _____ positions.

A. 1, 2, 4 and 6 position

B. 1, 3, 5 and 7 position

C. 1, 3, 7 and 9 position

D. 1, 2, 6 and 8 position

Answer: C

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63. Chitin is a

A. polysaccharide

B. nitrogenous polysaccharide

C. lipoprotein

D. protein

Answer: B

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64. Which one is diaminodiacrboxlic amino acid

A. Cystine

B. Lysine

C. Cysteine

D. Aspartic acid

Answer: B

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65. Which one is a cofactor of carbonic anhydrase ?

A. Fe

B. Zn

C. Cu

D. Mg

Answer: B

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66. Which of the following is not conjugated protein

A. Peptone

B. Phosphoprotein

C. Lipoprotein

D. Chromoprotein

Answer: A

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67. Most abundant mineral of animal body is

A. iron

B. sodium

C. potassium

D. calcium

Answer: D

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68. Which of the following is structural subunit of DNA ?

A. Protein

B. Carbohydrate

C. RNA

D. Nucleotides

Answer: D

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69. Nitrogenous bases present in DNA

A. Adenine, guanine, cytosine, thymine

B. Adenine, guanine, cytosine, uracil

C. Adenine, thymine, uracil

D. guanine, uracil

Answer: A

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70. Essential : non-essential amino acid is

A. lysine : leucine

B. methionine : threonine

C. valine : tyrosine

D. alanine : cystine

Answer: C

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71. A nucleoside differs from a nucleotide in not having

A. sugar

B. glucose

C. nitrogen base

D. phosphate group

Answer: D

72. Which of the following amino acid has hydroxyl methyl gruop as its group

A. serine

B. proline

C. alanine

D. arginine

Answer: A

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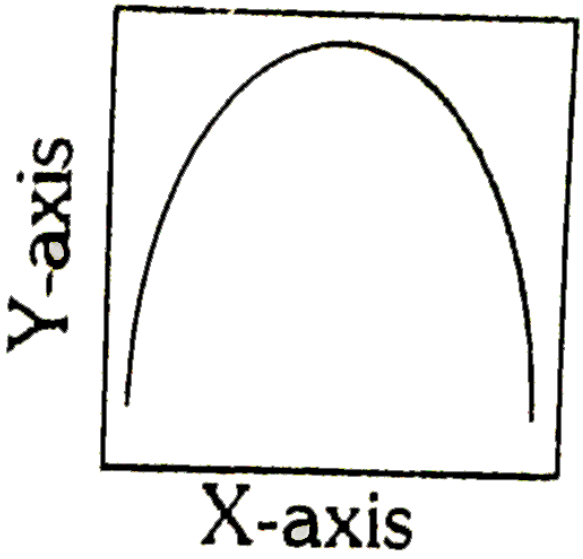
73. The curve given below show enzymatic activity with relation to three conditions (pH, temperature and substrate concentration)



What do the two axises (x and y) represent

A.

X-axis	Y-axis
(a)enzymatic activity	pH

B.

X-axis	Y-axis
(b)temperature	enzyme activity

C.

X-axis	Y-axis
(c)substrate concentration	enzymatic acitvity

D.

X-axis	Y-axis
(d)enzymatic	temperature

Answer: B

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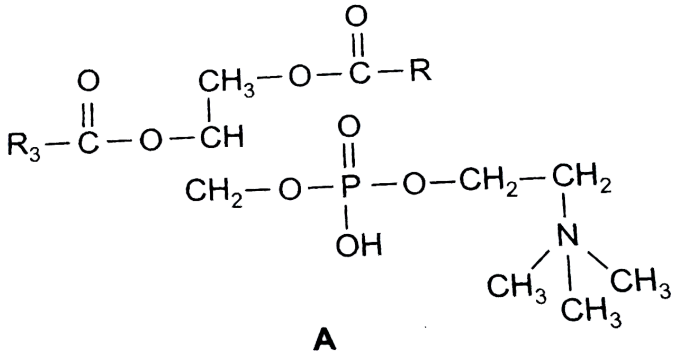
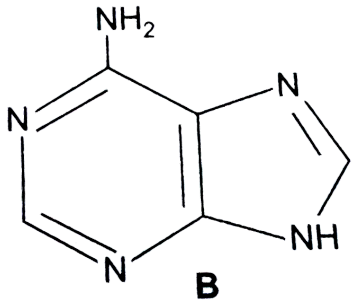
74. which one of the following structural formula of two organic compounds is correctly identified along

with its related function ?



A



B

A. B : adenine - a nucleotide that makes up nucleic acids

B. A : triglyceride - major source of energy

C. B : uracil - a component of DNA

D. A : lecithin - a component of cell membrane

Answer: D

75. Nitrogen base + pentose sugar + phosphate group is

A. nucleoside

B. nucleoside

C. nucleic acid

D. pyrimidine base

Answer: B

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76. The energy content in Kcal/g of carbohydrate : protein : triglycerol respectively is approximately in the ratio of

A. $1:2:2$

B. $1:2:1$

C. $2:1:1$

D. $2:2:1$

Answer:

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77. Which of the following fatty acids is liquid at room temperature

A. Palmitic acid

B. Stearic acid

C. Oleic acid

D. Linoleic acid

Answer: C::D

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78. ..... Is a globular protein of ~ 6 kDa consisting of 51 amino acids, arranged in 2 polypeptide chains held together by disulphide bridge

A. Insulin

B. Keratin

C. Glucagon

D. Fibrinogen

Answer: A

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79. Inhbition of acetylcholine by DEP (Diisorprophl-fluorophosphate) is an example of

A. Competitive inhibition

B. non-competitive inhibition

C. non-competitive irreversible inhibition

D. allosteric inhibition.

Answer: C

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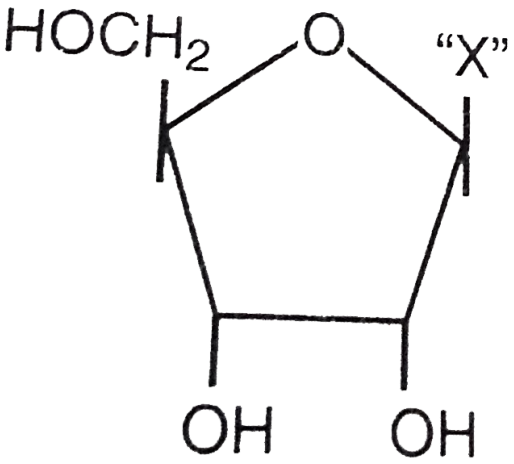
80. The given diagrammatic representation shows one of the categories of small molecular weight organic compounds in the living tissues. Identify the category shown and the one blank component "X" in it :



A.

Category	Component
(a)Cholesterol	Guanin

B. | Category | Component |
|---|---|
| (b) Amino acid | NH_2 |

C. | Category | Component |
|---|---|
| (c) Nucleotide | Adenine |

D. | Category | Component |
|---|---|
| (d) Nucleoside | Uracil |

Answer: D

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81. which one of the following biomolecules is correctly characterized ?

A. Lecithin - a phosphorylated glyceride found in cell membrane.

B. Palmitic acid - an unsaturated fatty acid with 18 carbon atoms.

C. Adenylic acid - adenosine with a glucose phosphate molecule.

D. Alanine amino acid - contains an amino group and an acidic group anywhere in the molecule.

Answer: A

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82. A phosphoglyceride is always made up of

A. only an unsaturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached.

B. a saturated or unsaturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached.

C. a saturated or unsaturated fatty acid esterified to a phosphate group which is also attached to a glycerol molecule.

D. only a saturated fatty acid esterified to a glycerol molecule to which a phosphate group

is also attached.

Answer: B

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83. Transition state structure of the substrate formed during an enzymatic reaction is

A. permanent but unstable

B. transient and unstable

C. permanent and stable

D. transient but stable

Answer: B

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84. Select the option which is not correct with respect to enzyme action

A. Substrate binds with enzyme at its active site.

B. Addition of lot of succinate does not reverse the inhibition of succinic dehydrogenase by malonate.

C. A non-competitive inhibitor binds the enzyme at a site distinct from that which binds the substrate.

D. Malonate is a competitive inhibitor of succinic dehydrogenase.

Answer: B

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85. Choose the correct statement

A. All proteins have 20 amino acids

B. Both ends of a protein are similar

C. All proteins are soluble

D. Proteins are formed by peptide bonds

Answer: D

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86. Which one of the following statements is wrong ?

A. Cellulose is a polysaccharide

B. Uracil is a pyrimidine

C. Glycine is a sulphur containing amino acid

D. Sucrose is a disaccharide

Answer: C

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87. The amino acid trytophan is the precursor for the synthesis of

A. Thyroxine and Triiodothyronine

B. Estrogen and Progesterone

C. Cortisol and Cortisone

D. Melatonin and Serotonin

Answer: D

88. A typical fat molecule is made-up of

A. One glycerol and three fatty acid molecules

B. One glycerol and one fatty acid molecule

C. Three glycerol and three fatty acid molecules

D. Three glycerol molecules and one fatty acid molecule

Answer: A

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89. Microtubules are the constituents of

A. Spindle fibres, Centrioles and Cilia

B. Centrioles, spindle fibres and chromatin

C. Centrosome, Nucleosome and Centrioles

D. Cilia, Flagella and Peroxisomes

Answer: A

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90. A non-proteinaceous enzyme is

A. lysozyme

B. ribozyme

C. ligase

D. deoxyribonuclease

Answer: B

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91. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins

A. hydrogen bonds

B. Electrostatic interaction

C. Hydrophobic interaction

D. Easter bonds

Answer: D

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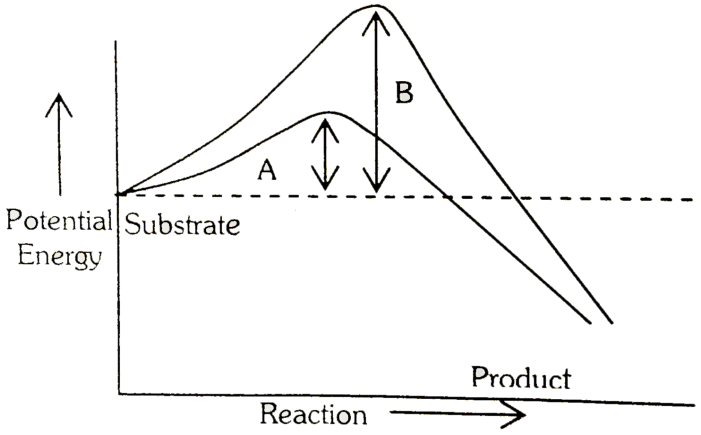
92. Which of the following describes the given grapgh correctly



A. Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme

B. Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme

C. Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme

D. Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme

Answer: B

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93. Among the following edible fishes, which one is a marine fish having rich source of omega -3 fatty acids ?

A. Mystus

B. Mangur

C. Mrigala

D. Mackerel

Answer: D

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94. Which of the following statements is correct with reference to enzymes ?

A. Holoenzyme = Apoenzyme + Coenzyme

B. Coenzyme = Apoenzyme + Holoenzyme

C. Holoenzyme = Coenzyme + Co-factor

D. Apoenzyme = Holoenzyme + Coenzyme

Answer: A

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95. Which of the following are not polymeric

A. Proteins

B. Polysaccharides

C. Lipids

D. Nucleic acids

Answer: C

Watch Video Solution

96. The two functional groups characteristic of sugars are

A. hydroxyl and methyl

B. carbonyl and methyl

C. carbonyl and phosphate

D. carbonyl and hydroxyl

Answer: D

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Practice Questions Assertion Reason

1. Assertion. All organisms contain the same organic compounds in about the same proportions.

Reason. All organisms have evolved from the first primitive cells which came into existence about 3.6 billion years ago.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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2. Assertion. A variety of organisms are adapted for land life.

Reason. Terrestrial organisms are independent of water.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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3. Assertion. Glucose is the main fuel in all cells.

Reason. The cells draw glucose from the blood.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

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4. Assertion. Milk becomes sour if kept at room temperature for a long time.

Reason. The bacteria, Streptococcus lactis, convert the milk sugar lactose into lactic acid.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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5. Assertion. Polyunsaturates (oils containing polyunsaturated fatty acids) are considered good for health.

Reason. They help reduce blood cholesterol level, thereby decreasing chances of heart attack.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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6. Assertion. A protien may have amino acid not specified by the genetic code.

Reason. Many amino acids found in the cell do not form protiens.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

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7. Assertion. The roman ~ P bond carries a great deal of energy, and is called energy-rich bond.

Reason. Its formation uses a large amount of energy and its breakdown releases the corresponding amount of energy.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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8. Assertion. Nucleotides are the building blocks of nucleic acid.

Reason. Nucleotides are also components of energy carriers and coenzymes.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

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9. Assertion. Seven amino acids are referred to as the essential amino acids for humans.

Reason. These are essential for health.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

Watch Video Solution

10. Assertion. Amino acids are monomers of nucleic acids.

Reason. Protien amino acids have an unlimited variety.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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11. Assertion. Sucrose is a non-reducing sugar.

Reason. It has glycosidic linkage.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

12. Assertion. Macromolecules are formed from the micromolecule monomers by condensation.

Reason. There is a loss of water molecule for the addition of each micromolecule in the synthesis of macromolecules.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

13. Assertion. Liver of an adult human can store upto 0.91 kg. of glycogen.

Reason. This glycogen can provide glucose for several days in fasting.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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14. Assertion. Cellulose of our diet simply provides bulk (fibre, roughage) and no nutrient.

Reason. Cellulose is not hydrolysed (digested) in our gut. It hastens movement of faeces through the intestine.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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15. Assertion. Haemoglobin is a quaternary protein.

Reason. It consists of 4 amino acid units.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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16. Assertion. Nucleic acids are strong acids.

Reason. Nitrogen gives the bases of nucleic acids their basic nature.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

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17. Assertion. The two chains of DNA molecule are antiparallel.

Reason. The 5 prime ~{ symbol $\rightarrow$ }~3' directions of the two DNA chains are opposite.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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18. Assertion. The antisense (missence) chain of DNA is not transcribed and is, thus, functionless.

Reason. The two DNA chains are firmly held together so that they never separate (denature).

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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19. Assertion. Amount of DNA in a cell is fixed.

Reason. Amount of RNA in a cell is variable.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

20. Assertion. DNA replication needs RNA primer.

Reason. DNA polymerase enzyme can make a DNA chain longer but cannot initiate its synthesis.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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21. Assertion. The prokaryotic mRNA is polycistronic and specifies more than one polypeptide.

Reason. Polycistronic mRNA is transcribed from more than one gene.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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22. Assertion. The enzymes make the biochemical reactions go at ordinary tempreature and instantaneously.

Reason. The enzymes bring the reactant molecules together for rapid interaction.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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23. Assertion. An apoenzyme functions in association with some nonprotein cofactor.

Reason. A working combination of an apoenzyme and a cofactor is called holoenzyme.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

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24. Assertion. Enzymes are now named by adding suffix 'ase' to the root word of the substrate, but the enzyme name pepsin ends with 'in'.

Reason. Enzymes with 'in' at the ens were named before the modern system of naming the enzymes was devised.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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25. Assertion. Hydrolases catalyse the split of the larger molecules into smaller ones.

Reason. Ligases catalyse the union of two substrate molecules into one.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B

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26. Assertion. Coenzyme is a nonprotein group without which certain enzymes are inactive or incomplete.

Reason. Coenzymes not only provide a point of attachement to the chemical group being transferred but also influence the properties of the group.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

27. Assertion. There is no mechanism in a cell to control enzyme action.

Reason. Enzymes do not require any control mechanism.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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28. Assertion. Carboxypetidase is an exopeptidase.

Reason. It cleaves the N-terminal bond.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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29. Assertion. The total content of iron in an adult body is 3.5 gram. The iron deficiency lead to anaemis.

Reason. Iron $\left(Fe^{2+}\right)$ combines with the pigment porphyrin to form heme.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the

Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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30. Assertion. Enzymes becomes inactive below minimum temperature.

Reason. The inactivity of the enzymes is due to denaturation.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

31. Assertion. A coenzyme or metal ion that is very tightly bound to enzyme protein called prosthetic group.

Reason. A complete, catalytically active enzyme together with its bound prosthetic group is called apoenzyme.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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