

Exercise - I (Conceptual Questions)

Build Up Your Understanding

HOW TO ANALYSE CHEMICAL COMPOSITION

1. The most abundant intracellular cation is :

(1) K^+ (2) Na^+ (3) Ca^{++} (4) H^+

BBM075

PRIMARY AND SECONDARY METABOLITES

2. Codiene is :-

(1) A polymeric substance
(2) An alkaloid
(3) An essential oil
(4) A toxin

BBM197

CARBOHYDRATES

3. Which is odd –

(1) Chitin – Carbohydrate
(2) Pectin - Protein
(3) Steroid – Lipid
(4) Wax – Lipid

BBM001

4. Which is a disaccharide?

(1) Galactose (2) Fructose
(3) Maltose (4) Dextrin

BBM002

5. Sugar found in haemolymph of insects is called-

(1) Maltose (2) Lactose
(3) Trehalose (4) Galactose

BBM003

6. Carbohydrates are stored in mammals as:

(1) Glucose in liver
(2) Glycogen in muscles and spleen
(3) Lactic acid in muscles
(4) Glycogen in liver and muscles

BBM004

7. Translocation of sugars in flowering plants occur in the form of -

(1) Glucose (2) Sucrose
(3) Fructose (4) Maltose

BBM005

8. Sucrose is composed of -

(1) Glucose & Fructose
(2) Glucose & Glycogen
(3) Two molecules of Glucose
(4) Glycogen & Fructose

BBM006

9. Sugars with five membered ring are called:-

(1) Pyranose (2) Furanose
(3) Dextrorotatory (4) Levorotatory

BBM007

10. Amylose and Amylopectin chains occur in-

(1) Glycogen (2) Starch
(3) Cellulose (4) Chitin

BBM008

11. Which of the following disaccharide gives two molecules of glucose on hydrolysis?

(1) Maltose (2) Lactose
(3) Both (1) and (2) (4) Sucrose

BBM009

12. Which monosaccharide does not show optical isomerism :

(1) Dihydroxy acetone
(2) Glyceraldehyde
(3) Erythrose
(4) Ribose

BBM064

13. Which one of the following sets of monosaccharides forms sucrose?

(1) β -D-Glucopyranose and α -D-fructofuranose
(2) α -D-Glucopyranose and β -D-fructopyranose
(3) α -D-Galactopyranose and α -D-Glucopyranose
(4) α -D-Glucopyranose and β -D-fructofuranose

BBM072

- 14.** Macro molecule chitin is :
 (1) Simple polysaccharide
 (2) Nitrogen containing polysaccharide
 (3) Phosphorus containing polysaccharide
 (4) Sulphur containing polysaccharide

BBM076

LIPIDS

- 15.** All lipids are -
 (1) Composed of fatty acids
 (2) Triglycerides
 (3) Insoluble in water
 (4) All the above

BBM010

- 16.** Which one of the following is not a constituent of cell membrane ?
 (1) Phospholipids (2) Cholesterol
 (3) Glycolipids (4) Proline

BBM065

PROTEINS

- 17.** Proteins present in protoplasm are very important because-
 (1) They provide definite shape to cell
 (2) They function as biocatalyst
 (3) They yield energy
 (4) They are stored food

BBM011

- 18.** Unit of protein is: -
 (1) Amino acid (2) Monosaccharide
 (3) NH₃ (4) Nucleotide

BBM012

- 19.** Milk protein is-
 (1) Lactogen (2) Myosin
 (3) Casein (4) Pepsin

BBM013

- 20.** The amino acids which are not synthesized in the body are called:
 (1) Non-essential (2) Essential
 (3) Deaminated (4) All of them

BBM014

- 21.** For body growth and repair, one needs:
 (1) Carbohydrates (2) Fats
 (3) Proteins (4) Vitamins

BBM015

- 22.** Proteins in the body are composed of: -
 (1) Amino acids (2) Natural proteins
 (3) Enzymes (4) nucleic acids

BBM016

- 23.** Which is most important structural part of the body?
 (1) Protein (2) Carbohydrates
 (3) Lipid (4) Nucleic acid

BBM017

- 24.** Histone is a basic protein due to -
 (1) Alanine & glycine
 (2) Methionine & serine
 (3) Tryptophan & tyrosine
 (4) Lysine & Arginine

BBM018

- 25.** Which one is the most abundant protein in the animal world ?
 (1) Collagen (2) Insulin
 (3) Trypsin (4) Haemoglobin

BBM074

NUCLEIC ACID

- 26.** Nucleic acids are made up of -
 (1) Amino acids (2) Pentose sugars
 (3) Glycerol (4) Nucleotides

BBM019

- 27.** Circular and double stranded DNA occurs in
 (1) Golgi body (2) Mitochondria
 (3) Nucleus (4) ER

BBM020

- 28.** Double helix model of DNA was proposed by-
 (1) Watson and Crick
 (2) Schleiden and Schwann
 (3) Singer and Nicolson
 (4) Kornberg and Khorana

BBM021

29. Back bone in structure of DNA molecule is made up of -

- (1) Pentose Sugar and phosphate
- (2) Hexose sugar and phosphate
- (3) Purine and pyrimidine
- (4) Sugar and phosphate

BBM022

30. Nucleotide is -

- (1) N-base, pentose sugar and phosphoric acid
- (2) Nitrogen, Hexose sugar and phosphoric acid
- (3) Nitrogen base, pentose sugar
- (4) Nitrogen base, trioses and phosphoric acid

BBM023

31. Which element is not found in nitrogenous base?

- (1) Nitrogen
- (2) Hydrogen
- (3) Carbon
- (4) Phosphorus

BBM024

32. A N-base together with pentose sugar and phosphate forms: -

- (1) Nucleoside
- (2) Polypeptide
- (3) Nucleotide
- (4) Amino acid

BBM025

33. The purine & pyrimidine pairs of complementary strands of DNA are held together by –

- (1) H – bonds
- (2) O – bonds
- (3) C – bonds
- (4) N – bonds

BBM026

34. On an average, how many purine N bases are present in single coil of DNA?

- (1) Four
- (2) Five
- (3) Ten
- (4) Uncertain

BBM027

35. ATP is-

- (1) Nucleotide
- (2) Nucleoside
- (3) Nucleic acid
- (4) Vitamin

BBM028

36. In DNA, purine nitrogen bases are: -

- (1) Uracil and Guanine
- (2) Guanine and Adenine
- (3) Adenine and cytosine
- (4) None

BBM029

37. Adenylic acid is: -

- (1) Ribose + Adenine + phosphate
- (2) Ribose + cytosine
- (3) Nucleoside
- (4) Deoxyribonucleotide

BBM030

38. The Watson-Crick model of DNA double helix was proposed in :-

- (1) 1953
- (2) 1963
- (3) 1954
- (4) 1952

BBM031

ENZYMES

39. The fastest acting enzyme, in the biological kingdom among the following is:

- (1) Lipase
- (2) Amylase
- (3) Peptidase
- (4) Carbonic anhydrase

BBM032

40. Apoenzyme is:

- (1) Protein
- (2) Vitamin
- (3) Carbohydrate
- (4) Amino acid

BBM033

41. Which of the following inactivates the enzyme by changing its shape?

- (1) Competitive inhibitor
- (2) Allosteric inhibitor
- (3) Coenzyme
- (4) All of the above

BBM034

42. Enzyme were discovered for the first time in:-

- (1) Bacteria
- (2) Yeast
- (3) Algae
- (4) Spinach

BBM035

- | | |
|--|--|
| <p>43. What is NADP?</p> <p>(1) An enzyme
(2) An ion carrier
(3) H acceptor coenzyme
(4) A part of t-RNA</p> <p style="text-align: right;">BBM036</p> <p>44. The cofactor of various respiratory enzymes is: -</p> <p>(1) Ca (2) B
(3) Mg (4) Mo</p> <p style="text-align: right;">BBM037</p> <p>45. Most enzymes consist of two parts these are :-</p> <p>(1) Enzyme & substrate
(2) Enzyme & coenzyme
(3) Apoenzyme and enzyme
(4) Apoenzyme & cofactor</p> <p style="text-align: right;">BBM038</p> <p>46. The first enzyme isolated in crystalline form was :-</p> <p>(1) Catalase (2) Urease
(3) Peroxidase (4) Amylase</p> <p style="text-align: right;">BBM039</p> <p>47. In plants, enzymes are present: -</p> <p>(1) Only in flowers
(2) Only in leaves
(3) In all the living cells
(4) Only in parenchyma</p> <p style="text-align: right;">BBM040</p> <p>48. Enzyme inhibition caused by a substrate analogue is :-</p> <p>(1) Competitive
(2) Non-competitive
(3) In competitive
(4) Semi-competitive</p> <p style="text-align: right;">BBM041</p> | <p>49. Allosteric enzymes have allosteric sites for :</p> <p>(1) Inhibition only
(2) Activation only
(3) Reduction in activation energy
(4) Both activation and inhibition</p> <p style="text-align: right;">BBM042</p> <p>50. An example of competitive inhibition is :</p> <p>(1) Succinic dehydrogenase by malonic acid
(2) Cytochrome oxidase by cyanide
(3) Hexokinase by glucose - 6 phosphate
(4) Carbonic anhydrase by carbon - dioxide</p> <p style="text-align: right;">BBM043</p> <p>51. First discovered Enzyme was :-</p> <p>(1) Isomerase (2) Transaminase
(3) Zymase (4) Transferase</p> <p style="text-align: right;">BBM044</p> <p>52. Enzyme were discovered for the first time by:</p> <p>(1) Sumner (2) Buchner
(3) Kuhne (4) None of the above</p> <p style="text-align: right;">BBM045</p> <p>53. Who coined the term enzyme ?</p> <p>(1) Pasteur (2) Buchner
(3) Kuhne (4) Sumner</p> <p style="text-align: right;">BBM046</p> <p>54. Vitamin serves the function of :-</p> <p>(1) An enzyme (2) A coenzyme
(3) A holoenzyme (4) A hormone</p> <p style="text-align: right;">BBM047</p> <p>55. Which of the following is a coenzyme ?</p> <p>(1) NAD (2) NADP
(3) FAD (4) All the above</p> <p style="text-align: right;">BBM048</p> <p>56. The Coenzyme is -</p> <p>(1) often a metal
(2) often a vitamin
(3) always a protein
(4) always an inorganic compound</p> <p style="text-align: right;">BBM049</p> |
|--|--|

- 57.** Which of the following is produced with the combination of apoenzyme and coenzyme-
 (1) ES complex (2) Prosthetic gp
 (3) Holoenzyme (4) EP complex's
BBM050
- 58.** Which of the following coenzyme is a derivative of Niacin ?
 (1) NAD (2) NADP
 (3) FAD (4) Both (1) and (2)
BBM051
- 59.** Which of the following is not consumed in a biochemical process ?
 (1) Hormones (2) Enzymes
 (3) Vitamins (4) Nucleotides
BBM052
- 60.** How the presence of an enzyme affects the activation energy of a reaction ?
 (1) It becomes increased
 (2) It becomes decreased
 (3) It is first increased and then decreased
 (4) It is not affected at all
BBM053
- 61.** Enzyme inhibition caused by a product of the same biochemical reaction is :-
 (1) Competitive inhibition
 (2) Feed-back inhibition
 (3) In competitive inhibition
 (4) Semi-competitive inhibition
BBM054
- 62.** At boiling temperature of water, what will be effect on an enzyme :-
 (1) become denatured
 (2) remain unaffected
 (3) become inactivated
 (4) become more active
BBM055
- 63.** Enzyme have very narrow optima for :-
 (1) Light (2) Temperature
 (3) pH (4) Humidity
BBM056
- 64.** Which enzyme is not a protein ?
 (1) Hexokinase (2) Synthetase
 (3) Endonuclease (4) Ribozyme
BBM057
- 65.** Which of the following statements regarding enzyme inhibition is correct ?
 (1) Non-competitive inhibition of an enzyme can be overcome by adding large amount of substrate
 (2) Competitive inhibition is seen, when a substrate competes with an enzyme for binding to an inhibitor protein
 (3) Competitive inhibition is seen, when the substrate and the inhibitor compete for the active site on the enzyme
 (4) Non-competitive inhibitors often bind to the enzyme irreversibly.
BBM060
- 66.** The catalytic efficiency of two different enzyme can be compared by the :
 (1) The K_m value
 (2) The pH optimum value
 (3) Formation of the product
 (4) Molecular size of the enzyme
BBM061
- 67.** Which of the following is/are structural analogue(s) of p-amino benzoic acid?
 (1) Malonate
 (2) Glucose-6-phosphate
 (3) AMP
 (4) Sulpha drugs
BBM062
- 68.** An organic substance bound to an enzyme and essential for its activity is called
 (1) Apoenzyme
 (2) Isoenzyme
 (3) Coenzyme
 (4) Holoenzyme
BBM063

69. A competitive inhibitor of succinic dehydrogenase is :-

- (1) α -ketoglutarate (2) Malate
(3) Malonate (4) Oxaloacetate

BBM066

70. For its activity, carboxypeptidase requires :-

- (1) Niacin (2) Copper
(3) Zinc (4) Iron

BBM071

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

- (1) permanent and stable
(2) transient but stable
(3) permanent but unstable
(4) transient and unstable

BBM077

72. The essential chemical components of many coenzymes are :

- (1) Vitamins
(2) Proteins
(3) Nucleic acids
(4) Carbohydrates

BBM078

73. Enzyme catalysing the linking together of 2 compounds :-

- (1) Lyases
(2) Transferases
(3) Hydrolases
(4) Ligases

BBM198

EXERCISE-I (Conceptual Questions)

ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	1	2	2	3	3	4	2	1	2	2	1	1	4	2	3
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	4	2	1	3	2	3	1	1	4	1	4	2	1	1	1
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	4	3	1	3	1	2	1	1	4	1	2	2	3	3	4
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	2	3	1	4	1	3	2	3	2	4	2	3	4	2	2
Question	61	62	63	64	65	66	67	68	69	70	71	72	73		
Answer	2	1	3	4	3	1	4	3	3	3	4	1	4		

Exercise - II (Previous Year Questions)

AIPMT/NEET

AIPMT 2014

1. Which one of the following is a non-reducing carbohydrate ?
- (1) Maltose (2) Sucrose
(3) Lactose (4) Ribose

BBM079

Re-AIPMT 2015

2. The chitinous exoskeleton of arthropods is formed by the polymerisation of :
- (1) lipoglycans
(2) keratin sulphate and chondroitin sulphate
(3) D-glucosamine
(4) N-acetyl glucosamine

BBM081

NEET-I 2016

3. One of the major components of cell wall of most fungi is :-
- (1) Chitin
(2) Peptidoglycan
(3) Cellulose
(4) Hemicellulose

BBM082

4. A typical fat molecule is made up of :-
- (1) Three glycerol molecules and one fatty acid molecule
(2) One glycerol and three fatty acid molecules
(3) One glycerol and one fatty acid molecule
(4) Three glycerol and three fatty acid molecules

BBM083

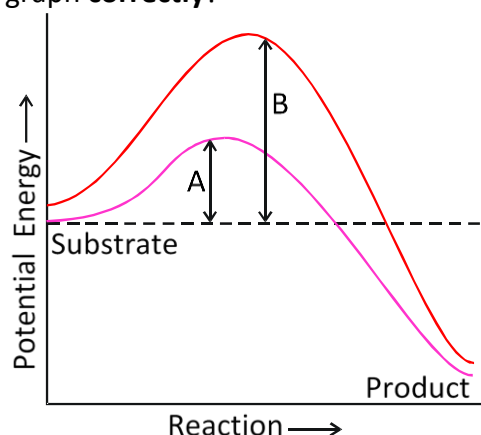
NEET-II 2016

5. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins?
- (1) Hydrophobic interaction
(2) Ester bonds
(3) Hydrogen bonds
(4) Electrostatic interaction
6. A non-proteinaceous enzyme is :-
- (1) Ligase
(2) Deoxyribonuclease
(3) Lysozyme
(4) Ribozyme

BBM084

BBM085

7. Which of the following describes the given graph **correctly**?



- (1) Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme
(2) Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme
(3) Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme
(4) Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme.

BBM086

NEET (UG) 2017

8. Which of the following are not polymeric ?
 (1) Proteins
 (2) Polysaccharides
 (3) Lipids
 (4) Nucleic acids

BBM087

9. Which one of the following statements is **correct**, with reference to enzymes ?
 (1) Holoenzyme = Apoenzyme + Coenzyme
 (2) Coenzyme = Apoenzyme + Holoenzyme
 (3) Holoenzyme = Coenzyme + Co-factor
 (4) Apoenzyme = Holoenzyme + Coenzyme

BBM088

NEET (UG) 2018

10. The two functional groups characteristic of sugars are
 (1) hydroxyl and methyl
 (2) carbonyl and methyl
 (3) carbonyl and phosphate
 (4) carbonyl and hydroxyl

BBM089

11. Which of the following is an amino acid derived hormone ?
 (1) Epinephrine (2) Ecdysone
 (3) Estradiol (4) Estriol

BBM090

NEET (UG) 2019

12. Which of the following glucose transporters is insulin-dependent ?
 (1) GLUT I (2) GLUT II
 (3) GLUT III (4) GLUT IV

BBM091

13. Concanavalin A is :
 (1) an alkaloid
 (2) an essential oil
 (3) a lectin
 (4) a pigment

BBM092

14. Consider the following statements :
(A) Coenzyme or metal ion that is tightly bound to enzyme protein is called prosthetic group.
(B) A complete catalytic active enzyme with its bound prosthetic group is called apoenzyme.

Select the **correct** option.

- (1) Both **(A)** and **(B)** are true.
 (2) **(A)** is true and **(B)** is false.
 (3) Both **(A)** and **(B)** are false.
 (4) **(A)** is false and **(B)** is true.

BBM093

NEET (UG) 2019 (Odisha)

15. Which of the following organic compounds is the main constituent of Lecithin ?
 (1) Arachidonic acid
 (2) Phospholipid
 (3) Cholesterol
 (4) Phosphoprotein

BBM094

16. "Ramachandran plot" is used to confirm the structure of :-
 (1) RNA
 (2) Proteins
 (3) Triacylglycerides
 (4) DNA

BBM095

17. Prosthetic groups differ from co-enzymes in that :-
 (1) they require metal ions for their activity.
 (2) they (prosthetic groups) are tightly bound to apoenzymes.
 (3) their association with apoenzymes is transient.
 (4) they can serve as co-factors in a number of enzyme-catalyzed reactions.

BBM096

NEET (UG) 2020

18. Match the following :

- (a) Inhibitor of catalytic activity (i) Ricin
 (b) Possess peptide bonds (ii) Malonate
 (c) Cell wall material in fungi (iii) Chitin
 (d) Secondary metabolite (iv) Collagen

Choose the **correct** option from the following

- | | (a) | (b) | (c) | (d) |
|-----|-------|-------|-------|------|
| (1) | (ii) | (iii) | (i) | (iv) |
| (2) | (ii) | (iv) | (iii) | (i) |
| (3) | (iii) | (i) | (iv) | (ii) |
| (4) | (iii) | (iv) | (i) | (ii) |

BBM097

19. Identify the basic amino acid from the following.

- (1) Valine (2) Tyrosine
 (3) Glutamic Acid (4) Lysine

BBM098

20. Which of the following is the most abundant protein in the animals ?

- (1) Insulin (2) Haemoglobin
 (3) Collagen (4) Lectin

BBM099

21. Identify the substances having glycosidic bond and peptide bond, respectively in their structure :

- (1) Inulin, insulin (2) Chitin, Cholesterol
 (3) Glycerol, trypsin (4) Cellulose, lecithin

BBM100

NEET (UG) 2020 (COVID-19)

22. Identify the statement which is **incorrect**.

- (1) Sulphur is an integral part of cysteine.
 (2) Glycine is an example of lipids.
 (3) Lecithin contains phosphorus atom in its structure.
 (4) Tyrosine possesses aromatic ring in its structure.

BBM101

NEET (UG) 2021

23. Which of the following are **not** secondary metabolites in plants ?

- (1) Morphine, codeine
 (2) Amino acids, glucose
 (3) Vinblastin, curcumin
 (4) Rubber, gums

BBM102

24. Match List - I with List - II.

List - I		List - II	
(a)	Protein	(i)	C = C double bonds
(b)	Unsaturated fatty acid	(ii)	Phosphodiester bonds
(c)	Nucleic acid	(iii)	Glycosidic bonds
(d)	Polysaccharide	(iv)	Peptide bonds

Choose the **correct** answer from the options given below.

- | | (a) | (b) | (c) | (d) |
|-----|------|-------|-------|-------|
| (1) | (iv) | (i) | (ii) | (iii) |
| (2) | (i) | (iv) | (iii) | (ii) |
| (3) | (ii) | (i) | (iv) | (iii) |
| (4) | (iv) | (iii) | (i) | (ii) |

BBM103

25. Identify the **incorrect** pair.

- (1) Alkaloids – Codeine
 (2) Toxin – Abrin
 (3) Lectins – Concanavalin A
 (4) Drugs – Ricin

BBM104

26. Following are the statements with reference to 'lipids'.

- (a) Lipids having only single bonds are called unsaturated fatty acids.
 (b) Lecithin is a phospholipid.
 (c) Trihydroxy propane is glycerol.
 (d) Palmitic acid has 20 carbon atoms including carboxyl carbon.
 (e) Arachidonic acid has 16 carbon atoms.

Choose the **correct** answer from the options given below.

- (1) (a) and (b) only
- (2) (c) and (d) only
- (3) (b) and (c) only
- (4) (b) and (e) only

BBM105

NEET (UG) 2022

- 27.** Exoskeleton of arthropods is composed of
- (1) Cellulose
 - (2) Chitin
 - (3) Glucosamine
 - (4) Cutin

BBM106

- 28.** Read the following statements on lipids and find out correct set of statements:

- (a) Lecithin found in the plasma membrane is a glycolipid
- (b) Saturated fatty acids possess one or more $C=C$ bonds
- (c) Gingelly oil has lower melting point, hence remains as oil in winter
- (d) Lipids are generally insoluble in water but soluble in some organic solvents
- (e) When fatty acid is esterified with glycerol, monoglycerides are formed

Choose the correct answer from the options given below:

- (1) (a), (d) and (e) only
- (2) (c), (d) and (e) only
- (3) (a), (b) and (d) only
- (4) (a), (b) and (c) only

BBM107

- 29.** A dehydration reaction links two glucose molecules to produce maltose. If the formula for glucose is $C_6H_{12}O_6$ then what is the formula for maltose ?

- (1) $C_{12}H_{24}O_{12}$
- (2) $C_{12}H_{22}O_{11}$
- (3) $C_{12}H_{24}O_{11}$
- (4) $C_{12}H_{20}O_{10}$

BBM108

RE-NEET (UG) 2022

- 30.** Match List-I with List-II :

List - I

- (a) Adenine
- (b) Anthocyanin
- (c) Chitin
- (d) Codeine

List - II

- (i) Pigment
- (ii) Polysaccharide
- (iii) Alkaloid
- (iv) Purine

Choose the correct answer from the options given below :

- (1) (a)–(iv), (b)–(i), (c)–(ii), (d)–(iii)
- (2) (a)–(iv), (b)–(iii), (c)–(ii), (d)–(i)
- (3) (a)–(iii), (b)–(i), (c)–(iv), (d)–(ii)
- (4) (a)–(i), (b)–(iv), (c)–(iii), (d)–(ii)

BBM109

- 31.** Primary proteins are also called as polypeptides because :

- (1) They are linear chains
- (2) They are polymers of peptide monomers
- (3) Successive amino acids are joined by peptide bonds
- (4) They can assume many conformations

BBM110

- 32.** In the enzyme which catalyses the breakdown of:

$H_2O_2 \rightarrow H_2O + O_2$ the prosthetic group is :

- (1) Nicotinamide adenine dinucleotide
- (2) Haem
- (3) Zinc
- (4) Niacin

BBM111

- 33.** Given below are two statements:

Statement-I : Amino acids have a property of ionizable nature of $-NH_2$ and $-COOH$ groups, hence have different structures at different pH.

Statement-II : Amino acids can exist as Zwitterionic form at acidic and basic pH.

In the light of the above statements, choose the most appropriate answer from the options given below:

- (1) Both Statement-I and Statement-II are correct
- (2) Both Statement-I and Statement-II are Incorrect
- (3) Statement-I is correct but Statement-II is incorrect
- (4) Statement-I is incorrect but Statement-II is correct

BBM112

NEET (UG) 2023

34. Cellulose does not form blue colour with Iodine because

- (1) It is a helical molecule.
- (2) It does not contain complex helices and hence cannot hold iodine molecules.
- (3) It breaks down when iodine reacts with it.
- (4) It is a disaccharide.

BBM180

35. Malonate inhibits the growth of pathogenic bacteria by inhibiting the activity of

- (1) Amylase
- (2) Lipase
- (3) Dinitrogenase
- (4) Succinic dehydrogenase

BBM181

36. Given below are two statements :

Statement-I : A protein is imagined as a line, the left end represented by first amino acid (C-terminal) and the right end represented by last amino acid (N-terminal).

Statement-II : Adult human haemoglobin, consists of 4 subunits (two subunits of α type and two subunits β type.)

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) Both Statement I and Statement II are false.
- (2) Statement I is true but Statement II is false.
- (3) Statement I is false but Statement II is true.
- (4) Both Statement I and Statement II are true.

BBM182

37. Given below are two statements :

Statement-I : Low temperature preserves the enzyme in a temporarily inactive state whereas high temperature destroys enzymatic activity because proteins are denatured by heat.

Statement-II : When the inhibitor closely resembles the substrate in its molecular structure and inhibits the activity of the enzyme, it is known as competitive inhibitor.

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) Both **Statement I** and **Statement II** are false.
- (2) **Statement I** is true but **Statement II** is false.
- (3) **Statement I** is false but **Statement II** is true.
- (4) Both **Statement I** and **Statement II** are true.

BBM183

NEET (UG) 2023 (Manipur)

38. Match List-I with List-II.

	List-I		List-II
(A)	Protein	(I)	C=C double bonds
(B)	Unsaturated fatty acid	(II)	Phosphodiester bond
(C)	Nucleic acid	(III)	Glycosidic bonds
(D)	Polysaccharide	(IV)	Peptide bonds

Choose the **correct** answer from the options given below :

- (1) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)
 (2) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
 (3) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)
 (4) (A)-(I), (B)-(IV), (C)-(III), (D)-(II)

BBM184

39. Inulin is a polymer of :

- (1) Fructose (2) Galactose
 (3) Amino acids (4) Glucose

BBM185

40. Which of the following is not a secondary metabolite?

- (1) Curcumin (2) Morphine
 (3) Anthocyanin (4) Lecithin

BBM186

41. Match List-I with List-II.

	List-I		List-II
(A)	Terpenoids	(I)	Codeine
(B)	Lectins	(II)	Diterpenes
(C)	Alkaloids	(III)	Ricin
(D)	Toxins	(IV)	Concanavalin A

Choose the **correct** answer from the options given below :

- (1) A-(II), B-(IV), C-(III), D-(I)
 (2) A-(II), B-(I), C-(IV), D-(III)
 (3) A-(II), B-(III), C-(I), D-(IV)
 (4) A-(II), B-(IV), C-(I), D-(III)

BBM187

NEET-UG 2024

42. Lecithin, a small molecular weight organic compound found in living tissues, is an example of :

- (1) Amino acids (2) Phospholipids
 (3) Glycerides (4) Carbohydrates

BBM188

43. Inhibition of Succinic dehydrogenase enzyme by malonate is a classical example of :

- (1) Cofactor inhibition
 (2) Feedback inhibition
 (3) Competitive inhibition
 (4) Enzyme activation

BBM189

44. Match List I with List II :-

	List I		List II
A.	GLUT-4	I.	Hormone
B.	Insulin	II.	Enzyme
C.	Trypsin	III.	Intercellular ground substance
D.	Collagen	IV.	Enables glucose transport into cells

Choose the correct answer from the options given below:

- (1) A-IV, B-I, C-II, D-III
 (2) A-I, B-II, C-III, D-IV
 (3) A-II, B-III, C-IV, D-I
 (4) A-III, B-IV, C-I, D-II

BBM190

45. Regarding catalytic cycle of an enzyme action, select the correct sequential steps :

- A. Substrate enzyme complex formation.
 B. Free enzyme ready to bind with another substrate.
 C. Release of products.
 D. Chemical bonds of the substrate broken
 E. Substrate binding to active site.

Choose the correct answer from the options given below:

- (1) E, A, D, C, B (2) A, E, B, D, C
 (3) B, A, C, D, E (4) E, D, C, B, A

BBM191

46. Match List I with List-II :

List-I		List-II	
A.	Lipase	I.	Peptide bond
B.	Nuclease	II.	Ester bond
C.	Protease	III.	Glycosidic bond
D.	Amylase	IV.	Phosphodiester bond

Choose the correct answer from the options given below:

- (1) A-IV, B-II, C-III, D-I
 (2) A-III, B-II, C-I, D-IV
 (3) A-II, B-IV, C-I, D-III
 (4) A-IV, B-I, C-III, D-II

BBM192

RE-NEET-UG 2024

47. Ligases is a class of enzymes responsible for catalysing the linking together of two compounds. Which of the following bonds is **not** catalysed by it ?

- (1) C–C (2) P – O
 (3) C – O (4) C – N

BBM193

48. Which of the following are **not** fatty acids ?

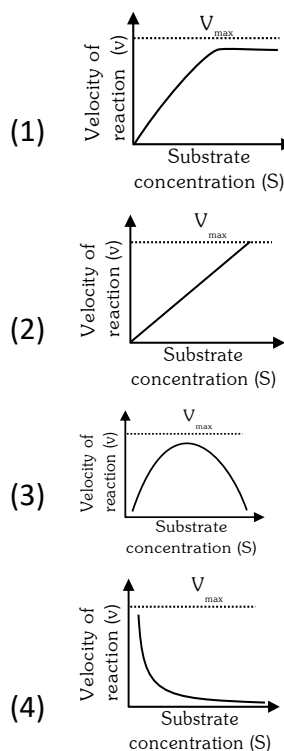
- A. Glutamic acid B. Arachidonic acid
 C. Palmitic acid D. Lecithin
 E. Aspartic acid

Choose the **correct** answer from the options given below :

- (1) C, D and E only (2) A and B only
 (3) A, D and E only (4) B and C only

BBM194

49. Which of the following graphs depicts the effect of substrate concentration on velocity of enzyme catalysed reaction ?



BBM195

50. Match List-I with List-II.

List-I		List-II	
A.	Primary structure of protein	I.	Human haemoglobin
B.	Secondary structure of protein	II.	Disulphide bonds
C.	Tertiary structure of protein	III.	Polypeptide chain
D.	Quaternary structure of protein	IV.	Alpha helix and β sheet

Choose the **correct** answer from the options given below :

- (1) A-III, B-IV, C-II, D-I
 (2) A-III, B-II, C-I, D-IV
 (3) A-I, B-III, C-II, D-IV
 (4) A-IV, B-III, C-II, D-I

BBM196

EXERCISE-II (Previous Year Questions)
ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	4	1	2	2	4	4	3	1	4	1	4	3	2	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	2	2	4	3	1	2	2	1	4	3	2	2	2	1
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	3	2	1	2	4	3	4	3	1	4	4	2	3	1	1
Question	46	47	48	49	50										
Answer	3	1	3	1	1										

Exercise - III

Master Your Understanding

(A) NCERT BASED QUESTIONS

1. Which of the following compound is present in acid soluble pool when we analyse chemical composition?

(1) Protein (2) Lipid
(3) Glucose (4) Carotenoid

BBM113

2. Which of the following elements present most abundantly on earth crust?

(1) Carbon (2) Hydrogen
(3) Oxygen (4) Silicon

BBM114

3. If $-NH_2$ group and $-COOH$ group are attached on same carbon in any amino acid, then these types of amino acids are known as :

(1) α -AA (2) β -AA
(3) γ -AA (4) All

BBM115

4. Variations in amino acids depend on :

(1) Side group
(2) Ester group
(3) Complexity of cell
(4) None of them

BBM116

5. How many carbon atoms are found in arachidonic acid?

(1) 16 (2) 18 (3) 20 (4) 22

BBM117

6. Which of the following AA is basic ?

(1) Valine (2) Lysine
(3) Glutamic acid (4) Glycine

BBM118

7. How many total carbons are found in Palmitic acid?

(1) 15 (2) 16 (3) 17 (4) 18

BBM119

8. Lipid may be :

(1) Monoglyceride (2) Diglyceride
(3) Triglyceride (4) All the above

BBM120

9. $\begin{array}{c} \text{COOH} \\ | \\ \text{H}-\text{C}-\text{NH}_2 \\ | \\ \text{CH}_3 \end{array}$ This amino acid is :

(1) Serine (2) Alanine
(3) Glycine (4) Arginine

BBM121

10. Which functional group is common in fatty acid & amino acid ?

(1) $-COOH$ (2) $-NH_2$
(3) $-OH$ (4) All

BBM122

11. In proteins, amino acids are attached together by :

(1) Peptide bond (2) Amide bond
(3) Ester bond (4) Both (1) & (2)

BBM123

12. Proteins can act as :

(1) transporter of nutrients across cell membrane
(2) Hormones
(3) Enzymes
(4) All

BBM124

13. Which of the following is homopoly-saccharide?

(1) Cellulose (2) Starch
(3) Glycogen (4) All

BBM125

14. All the elements present in a sample of earth's crust are also present in a sample of living tissue, but which of the following element is higher in any living organism than in earth's crust?

- (1) Hydrogen, Oxygen, Carbon and Silicon.
 (2) Hydrogen, Oxygen, Carbon, Nitrogen and Silicon
 (3) Hydrogen, Oxygen, Carbon, Nitrogen and Sulphur.
 (4) Hydrogen, Oxygen, Carbon, Nitrogen, Sulphur and Sodium

BBM126

15. Pigments are considered as the secondary metabolites, having some particular functions. Which of the following is an example of pigments?

- (1) Carotenoids (2) Codeine
 (3) Concanavalin-A (4) Curcumin

BBM127

16. Which of the following can not be considered as the example of polymeric substances?

- (1) Rubber (2) Gums
 (3) Cellulose (4) Vinblastin

BBM128

17. Select the correctly matched.

- (1) Anthocyanins - Alkaloids
 (2) Carotenoids - Toxins
 (3) Ricin - Drugs
 (4) Lemon grass oil - Essential oils.

BBM129

18. Which of the following amino acid having H(Hydrogen) as R group?

- (1) Glycine (2) Alanine
 (3) Serine (4) Leucine

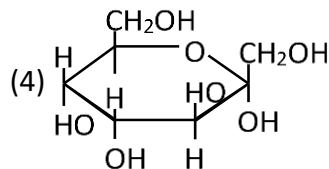
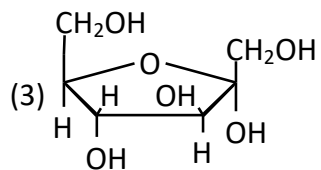
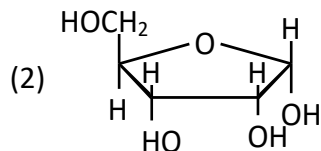
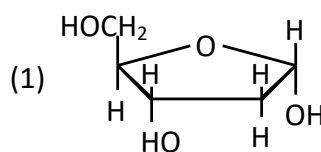
BBM130

19. Physical and chemical properties of amino acids depend on

- (1) Amino group (2) Carboxylic group
 (3) R-group (4) All of the above

BBM131

20. Which of the following represents the structure of Ribose ?



BBM132

21. Enzymes, which catalyse the transfer of hydrogen (H) between two substrates, are called:-

- (1) Transferases
 (2) Oxidoreductases
 (3) Isomerases
 (4) Hydrolases

BBM133

22. Which of the following statements is correct?

- (1) All the proteins are enzymes
 (2) All enzymes are proteins
 (3) Almost all enzymes are proteins
 (4) All enzymes are nucleic acids

BBM134

23. Low temperature preserves the enzyme in a ...'A'... state whereas high temperature destroys enzymatic activity because proteins are ...'B'... by heat. Choose the correct option:-

- (1) A = temporarily inactive, B = denatured
 (2) A = permanently inactive, B = temporarily inactive
 (3) A = permanently inactive, B = denatured
 (4) A = denatured, B = temporarily inactive

BBM135

24. Which of the following is not correct?

- (1) Catabolic pathways lead to the release of energy
 (2) Anabolic pathways consume energy
 (3) The living state and metabolism are synonymous
 (4) CO₂ dissolving in water is an uncatalysed reaction in living systems

BBM136

25. A general rule of thumb is that rate of enzymatic reactions doubles or decreases by half for every ____ change in either direction.

Choose correct option for above blank.

- (1) 50° (2) 5°C
 (3) 100°C (4) 10°C

BBM138

26. Non proteinaceous part of holoenzyme can be:

- (1) metal ion
 (2) prosthetic group
 (3) Coenzyme
 (4) All of the above

BBM139

27. Which of the following can have catalytic power?

- (1) Protein
 (2) Nucleic acid
 (3) Fat
 (4) Both (1) and (2)

BBM140

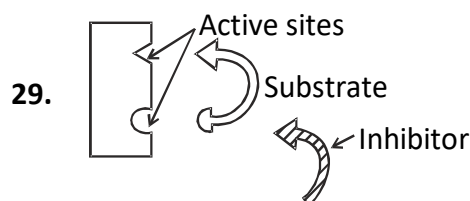
28. Catalytic activity is lost when the co-factor is removed from the enzyme. It testifies that :-

- (a) Cofactors form one or more coordination bonds with enzymes.
 (b) Cofactors play a crucial role in the catalytic activity of the enzyme
 (c) Cofactors are not made up of proteins
 (d) Cofactors show permanent association with enzymes

Options :

- (1) (a) and (d) (2) Only (b)
 (3) (b) and (c) (4) (a), (b) and (c)

BBM141



Above diagram is the indicative diagram of a type of inhibition. Choose the correct match:-

	Type of inhibition	Substrate	Inhibitor
(1)	Non-competitive reversible	Malonate	Succinate
(2)	Competitive	Succinic dehydrogenase	Malonate
(3)	Non-competitive irreversible	Succinic dehydrogenase	Succinate
(4)	Competitive	Succinate	Malonate

BBM142

30. On the basis of type of reactions they catalyse, enzymes are divided into _____ classes each with _____ subclasses.

Choose the **correct** numbers for above blanks respectively from the following options :-

- (1) 6, 6 (2) 6, 4-13
 (3) 4-13, 6 (4) 4, 13

BBM143

31. Inorganic catalysts work efficiently at high temperatures while enzymes get damaged at high temperatures (above 40°C). This feature of enzymes is not applicable to :-

- (1) the enzymes which are made up of proteins
- (2) The enzymes isolated from thermophilic organisms
- (3) the enzymes which have active sites
- (4) the enzymes of organisms who live in hot vents

BBM144

32. In the absence of any enzyme, reaction $\text{CO}_2 + \text{H}_2\text{O} \longrightarrow \text{H}_2\text{CO}_3$ is very slow, formation of 200 molecules of H_2CO_3 per hour. However by the use of carbonic anhydrase enzyme reaction speeds with about :-

- (1) formation of 6×10^5 molecules of H_2CO_3 every second
- (2) formation of 36×10^5 molecules of H_2CO_3 every minute
- (3) formation of 36×10^6 molecules of H_2CO_3 every second
- (4) formation of 6×10^6 molecules of H_2CO_3 every minute

BBM145

33. Stability is something related to energy status of the molecule. Transition state is high energy state as compared to substrate. So we can conclude that :-

- (1) Transition state is more stable than substrate
- (2) substrate is more stable than transition state
- (3) Both substrate and transition state are very much unstable
- (4) Stability can not be compared

BBM146

34. The activity of an enzyme can be affected by a change in the conditions which can alter the:-

- (1) tertiary structure of nucleic acids
- (2) primary structure of fats
- (3) tertiary structure of proteins
- (4) secondary structure of carbohydrates

BBM147

35. Which of the following statements is **not correct** regarding enzymes ?

- (1) They are specific in nature
- (2) They are used up in reaction
- (3) They are proteinaceous in nature
- (4) They speed up the rate of biochemical reactions.

BBM148

36. Which of the following statements regarding cofactors is **not correct** ?

- (1) Every coenzyme is a cofactor but every cofactor is not a coenzyme
- (2) Catalytic activity is lost when the cofactor is removed from the enzyme
- (3) Every coenzyme is a cofactor and every cofactor is a coenzyme
- (4) In the catalase enzyme, haem group work as a cofactor

BBM149

37. The prosthetic group can be distinguished from other cofactors of enzymes because prosthetic groups :-

- (1) are organic in nature
- (2) are tightly bound to the apoenzyme
- (3) Both (1) and (2)
- (4) are inorganic in nature and are loosely bound to the apoenzyme

BBM150

38. Ribozymes are :-

- (1) Enzymes with tertiary structure of protein
- (2) Fragments of endoplasmic reticulum those contain ribosomes
- (3) Inorganic enzymes
- (4) Nucleic acids that behave like enzymes

BBM151

39. Represented below is the effect of change in pH on enzyme activity. Which one of the following conclusions can be made by this diagram ?

- (1) Enzyme show its highest activity at a particular pH, both below and above this pH, activity declines
- (2) With increasing pH, activity increases upto a limit then it become constant
- (3) At a particular pH, activity is minimum, both below and above this pH, activity increases
- (4) Enzyme activity is affected by temperature not by pH so it is completely a hypothetical graph

BBM152

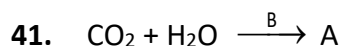
40. Match the column-I with column-II :-

Column-I (Example)		Column-II (Type of cofactor)	
(A)	NAD with dehydrogenase enzyme	(i)	Metal ion
(B)	Zn with carboxypeptidase enzyme	(ii)	Prosthetic group
(C)	Haem group with catalase enzyme	(iii)	Coenzyme

Choose the option from the following which denotes correct match of column-I with column-II :

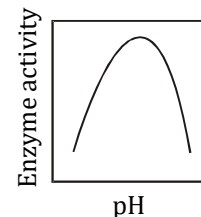
- (1) A-i, B-ii, C-iii (2) A-iii, B-ii, C-i
- (3) A-iii, B-i, C-ii (4) A-ii, B-iii, C-i

BBM153



Choose the correct option for A and B in the given reaction :-

- (1) B-Product of this reaction, A-Enzyme of this reaction
- (2) A-Product of this reaction, B-Rate of formation of product of this enzyme is 360 lakh molecules/sec.
- (3) A-Carbonic acid, B-Rate of formation of product of this enzyme is 6,00,000 molecules/sec.
- (4) A-Transient state, B-Enzyme of this reaction

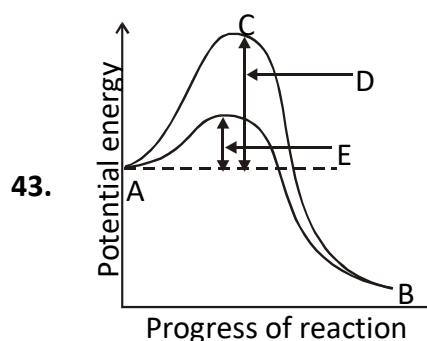


BBM154

42. Which of the following statements is not correct ?

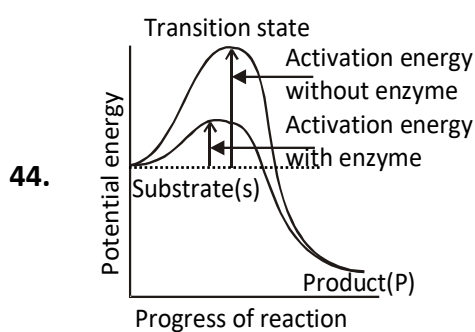
- (1) Enzymes bring down the activation energy of the processes
- (2) Enzymes are preserved in a temporary inactive state at high temperature
- (3) Enzymes isolated from thermophilic organisms have thermal stability
- (4) Enzymes are differ from inorganic catalysts because enzymes get *damaged* at high temperature.

BBM155



- (1) Energy level of A is low as compared to B
- (2) Energy level of B is high as compared to C
- (3) Energy level of D is high as compared to E
- (4) Energy level of C is low as compared to A and B

BBM156



Above diagram showing the concept of activation energy. If in this diagram energy level of 'P' become higher than the energy level of 'S' then which of the following will not apply for this diagram ?

- (1) The process will be endothermic
- (2) Activation energy with enzyme will be less than activation energy without enzyme
- (3) Energy difference between transition state and product will be more than activation energy
- (4) The substrate will go through the transition state

BBM157

45. (i) Transient association with the protein part of conjugated enzyme
 (ii) Non protein organic substance
 (iii) Usually made up of vitamins
 All the above characters are applicable to :-
 (1) Apoenzyme (2) Holoenzyme
 (3) Coenzyme (4) Isoenzyme

BBM158

46. An enzyme catalysing a transfer of a group, G between a pair of substrate S and S' as follows:



G = phosphate or hydrogen or any other group, the enzyme is related with which of the following class?

- (1) Transferases
- (2) Dehydrogenases
- (3) Both (1) and (2)
- (4) Either (1) or (2)

BBM159

(B) ANALYTICAL QUESTIONS

47. Which element is present negligible in human body?

- (1) O (2) C (3) H (4) Si

BBM160

48. Which of the following compound is found in acid soluble pool during analysis of a living tissue?

- (1) Protein (2) Lipid
- (3) Polysaccharide (4) Monosaccharide

BBM161

49. Which of the following is not a macromolecule?

- (1) Amino acid (2) Nucleotide
- (3) Monosaccharide (4) All the above

BBM162

50. α -amino acids are those, which –

- (1) Participates in lipid synthesis
- (2) $-\text{COOH}$ group and $-\text{NH}_2$ group are attached on same carbon
- (3) 21 types
- (4) All the above are correct

BBM163

51. Which of the following is correct statement?

- (1) Amino acids may be considered as substituted methane
- (2) α -AA have difference only in R group
- (3) In serine, R-group is hydroxy methyl
- (4) All of the above

BBM164

52. What is the R group in Glycine?

- (1) $-\text{CH}_2-\text{OH}$ (2) $-\text{H}$
- (3) $-\text{CH}_3$ (4) None of them

BBM165

53. Which of the following is acidic amino acid?
 (1) Valine (2) Glutamic acid
 (3) Arginine (4) Lysine

BBM166

54. Which of the following is aromatic AA?
 (1) Tyrosine (2) Tryptophan
 (3) Phenyl alanine (4) All the above

BBM167

55. Which of the following is component of simple lipid?
 (1) Glycerol (2) Glycol
 (3) Fatty acid (4) Both (1) & (3)

BBM168

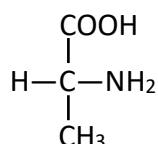
56. The lipid which is found in cell membrane is
 (1) Phospholipid (2) Lecithin
 (3) Both (1) & (2) (4) Palmitic acid

BBM169

57. Heterocyclic ring is found in which compound?
 (1) N-bases
 (2) Ring structure of monosaccharides
 (3) Protein
 (4) Both (1) & (2)

BBM170

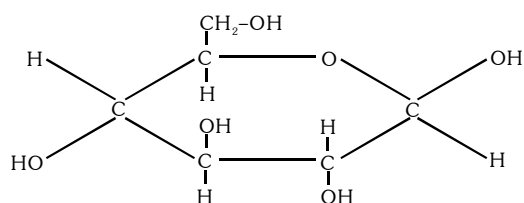
58. Following structure is related to which AA?



- (1) Glycine (2) Alanine
 (3) Serine (4) Tyrosine

BBM171

59. Following structure is –



- (1) α -Glucose (2) β -Glucose
 (3) Ribose (4) Deoxyribose

BBM172

60. Which of the following is secondary metabolites?

- (1) Rubber (2) Alkaloids
 (3) Terpenoids (4) All the above

BBM173

61. Which of the following statement is correct?

- (1) Lipid is biomacromolecule
 (2) Lipid has <1000 daltons molecular weight
 (3) Proteins are heteropolymer
 (4) All the above are correct except (1)

BBM174

62. DNA is –

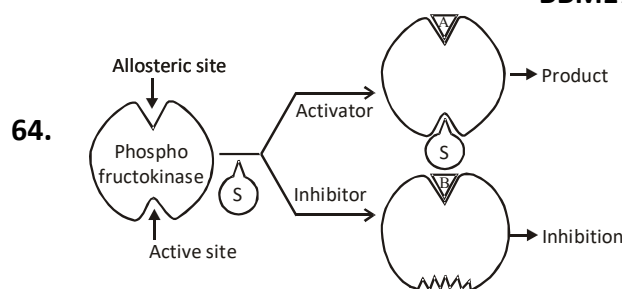
- (1) Biomacromolecule
 (2) Acidic in nature
 (3) Polymer of nucleotide
 (4) All of the above

BBM175

63. All the following statements about the structure of glycogen are true, except :-

- (1) Branched chains occur, after every ten residues
 (2) It is a copolymer of glucose and mannose
 (3) It contains α -1, 4-glycosidic linkages
 (4) It contains α -1, 6-glycosidic linkages

BBM176

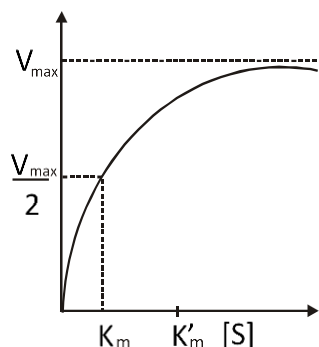


In the following diagrammatic representation A and B is :-

- (1) $A \rightarrow \text{G-6-P}$, $B \rightarrow \text{ATP}$
 (2) $A \rightarrow \text{AMP}$, $B \rightarrow \text{ATP}$
 (3) $A \rightarrow \text{Fructose-6-P}$, $B \rightarrow \text{ATP}$
 (4) $A \rightarrow \text{ATP}$, $B \rightarrow \text{ADP}$

BBM177

65.



Above graph is showing the effect of substrate concentration (S) on enzymatic activity. If due to change in enzymatic activity K_m value changes to K'_m then which of the following can be conclude on the basis of this change?

- (1) There is a significant increase in enzymatic activity
- (2) Entry of positive allosteric modulator in enzymatic activity
- (3) Entry of non-competitive inhibitor in enzymatic activity
- (4) In enzymatic activity, entry of inhibitor which closely resembles the substrate in its molecular structure

BBM178

66. One molecule of enzyme convert 5 molecules of substrate into product in 5 minutes.

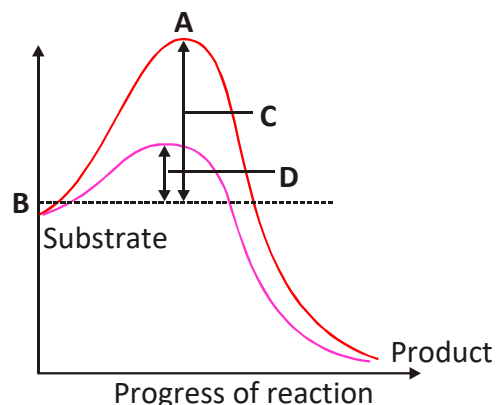
20 molecules of substrate and two molecules of enzyme are mixed in a test tube.

After 10 minutes the test tube will have :-

- (1) products and 10 unreacted molecules of substrate
- (2) only products
- (3) 10 unreacted molecules of substrate, enzymes and products
- (4) products and enzymes

BBM179

67. The figure given below shows the conversion of a substrate into product by an enzyme. In which one of the four options (1-4) the components of reaction labelled as A, B, C and D are identified correctly?



	A	B	C	D
(1)	Transition State	Potential energy	Activation energy without enzyme	Activation energy with enzyme
(2)	Potential Energy	Transition state	Activation energy with enzyme	Activation energy without enzyme
(3)	Activation energy with enzyme	Transition state	Activation energy without enzyme	Potential Energy
(4)	Potential Energy	Transition state	Activation energy with enzyme	Activation energy without enzyme

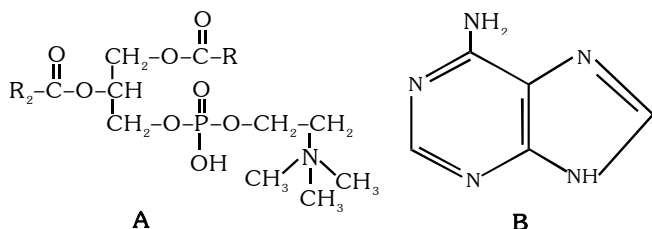
BBM067

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

- (1) Enzymes are denatured at high temperatures but in certain exceptional organisms they are effective even at temperatures 80°C - 90°C
- (2) Enzymes are highly specific
- (3) Most enzymes are proteins but some are lipids
- (4) Enzymes require optimum pH for maximal activity

BBM068

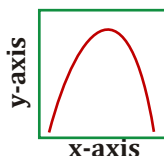
69. Which one of the following structural formulae of two organic compounds is correctly identified along with its related function ?



- (1) B : adenine - a nucleotide that makes up nucleic acids
- (2) A : Triglyceride - major source of energy
- (3) B : Uracil - a component of DNA
- (4) A : Lecithin - a component of cell membrane

BBM069

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



What do the two axes (x and y) represent?

x-axis

y-axis

- | | |
|-----------------------------|--------------------|
| (1) Enzymatic activity | pH |
| (2) Temperature | Enzyme activity |
| (3) Substrate concentration | Enzymatic activity |
| (4) Enzymatic activity, | Temperature |

BBM070

71. Which one out of A - D given below correctly represents the structural formula of the basic amino acid ?

A	B	C	D
$ \begin{array}{c} \text{NH}_2 \\ \\ \text{H}-\text{C}-\text{COOH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{C}=\text{O} \\ \\ \text{O} \end{array} $	$ \begin{array}{c} \text{NH}_2 \\ \\ \text{H}-\text{C}-\text{COOH} \\ \\ \text{CH}_2 \\ \\ \text{OH} \end{array} $	$ \begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{NH}_2 \end{array} $	$ \begin{array}{c} \text{NH}_2 \\ \\ \text{H}-\text{C}-\text{COOH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{NH}_2 \end{array} $

Options:

- [illegible]

BBM073

EXERCISE - III

ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	3	1	1	3	2	2	4	2	1	4	4	4	3	1
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	4	4	1	4	2	2	3	1	4	4	4	4	2	4	2
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	4	1	2	3	2	3	2	4	1	3	3	2	3	3	3
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	4	4	4	4	2	4	2	2	4	4	3	4	2	2	4
Question	61	62	63	64	65	66	67	68	69	70	71				
Answer	4	4	2	2	4	4	1	3	4	2	4				

Important Notes