BIOMOLECLUE

1. Which of the following is a nucleotide? [NEET 2024 Re]

(A) Uridine (B) Adenylic acid (C) Guanine (D) Guanosine

2. Enzymes that catalyse the removal of groups from substrates by mechanisms other than hydrolysis leaving double bonds, are known as : [NEET 2024 Re

(A) Transferases (B) Oxidoreductases (C) Dehydrogenases (D) Lyases

3. 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?
[NEET 2024 Re

(A) (B) (C) (D)

4. Match List-I with List-II.

	List-I		**List-II**
	Primary structure of protein		Human haemoglobin
	Secondary structure of protein		Disulphide bonds
	Tertiary structure of protein		Polypeptide chain
	Quaternary structure of protein		Alpha helix and sheet

Choose the correct answer from the options given below : [NEET 2024 Re

(A) A-III, B-IV, C-II, D-I (B) A-III, B-II, C-I, D-IV

(C) A-I, B-III, C-II, D-IV (D) A-IV, B-III, C-II, D-I

5. Which of the following graphs depicts the effect of substrate concentration on velocity of enzyme catalysed reaction?
[NEET 2024 Re]

Options:

(A) (B)

(C) (D)

6. 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 : [NEET 2024 Re

(A) C, D and E only (B) A and B only (C) A, D and E only

(D) and C only

7. The cofactor of the enzyme carboxypeptidase is:
[NEET 2024]

(A) Zinc (B) Niacin (C) Flavin

(D) Haem

8. Match List-I with List-II

List-I		**List-II**	
	GLUT-4	I.	Hormone

	Insulin	II.	Enzyme
	Trypsin	III.	Intercellular ground substance
	Collagen	IV.	Enables glucose transport into cells

Choose the correct answer from the options given below [NEET 2024]

(A) A-IV, B-I, C-II, D-III (B) A-I, B-II, C-III, D-IV (C) A-II, B-III, C-IV, D-I (D) A-III, B-IV, C-I, D-II

9. Inhibition of Succinic dehydrogenase enzyme by malonate is a classical example of: [NEET 2024]

(A) Cofactor inhibition (B) Feedback inhibition

(C) Competitive inhibition (D) Enzyme activation

10. Match List I with List II :

List-I		**List-II**	
(A)	Cocaine	I.	Effective sedative in surgery
(B)	Heroin	II.	Cannabis sativa
(C)	Morphine	III.	Erythroxylum
(D)	Marijuana	IV.	Papaver somniferum

Choose the correct answer from the options given below: [NEET 2024]

(A) A-IV, B-III, C-I, D-II (B) A-I, B-III, C-II, D-IV

(C) A-II, B-I, C-III, D-IV (D) A-III, B-IV, C-I, D-II

11. 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 :
[NEET 2024]
(A) A-IV, B-II, C-III, D-I (B) A-III, B-II, C-I, D-IV
(C) A-II, B-IV, C-I, D-III (D) A-IV, B-I, C-III, D-II

12. 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 : [NEET 2024]
(A) E, A, D, C, B (B) A, E, B, D, C (C) (D) E, D, C, B, A

13. 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 :
[NEET 2023]

Options:

(A) Both Statement I and Statement II are false. (B) Statement I is true but Statement II is flase.

(C) Statement I is false but Statement II is true. (D) Both Statement I and Statement II are true.

14. 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 (-terminal).

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

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

[NEET 2023]

(A) Both Statement I and Statement II are false. (B) Statement I is true but Statement II is false.

(C) Statement I is false but Statement II is true. (D) Both Statement I and Statement II are true

15. Primary proteins are also called as polypeptides because: [NEET Re-2022]

(A) They can assume many conformations

(B) They are linear chains

(C) They are polymers of peptide monomers

(D) Successive amino acids are joined by peptide bonds

16. 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 :

[NEET Re-2022]

(A) Statement I is incorrect but Statement II is correct

(B) Both Statement I and Statement II are correct

(C) Both Statement I and Statement II are incorrect

(D) Statement I is correct but Statement II is incorrect

17. In the enzyme which catalyses the breakdown of:

the prosthetic group is:
[NEET Re-2022]
(A) Niacin
(B) Nicotinamide adenine dinucleotide
(C) Haem
(D) Zinc

18. 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 bonds
(c) Gingely 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 option given below:
[NEET-2022]
(A) (a), (b) and (c) only
(B) (a), (d) and (e) only
(C) (c), (d) and (e) only
(D) (a), (b) and (d) only

19.

List-I	**List-II**
(a) Adenine	(i) Pigment
(b) Anthocyanin	(ii) Polysaccharide
(c) Chitin	(iii) Alkaloid
(d) Codeine	(iv) Purine

Choose the correct answer from the options given below . [NEET Re-2022]
Options:
(A) (a) - (i), (b) - (iv), (c) - (iii), (d) - (ii)
(B) (a) - (iv), (b) - (i), (c) - (ii), (d) - (iii)
(C) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)
(D) (a) - (iii), (b) - (i), (c) - (iv), (d) - (ii)

20. 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 : [NEET 2023 mpr]

(A) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(B) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

(C) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

(D) (A)-(I), (B)-(IV), (C)-(III), (D)-(II)

21. Melonate inhibits the growth of pathogenic bacteria by inhibiting the activity of [NEET 2023]
(A) Amylase (B) Lipase (C) Dinitrogenase (D) Succinic dehydrogenase

22. Inulin is a polymer of :
[NEET 2023 mpr]
(A) Fructose (B) Galactose (C) Amino acids (D) Glucose

23. Cellulose does not form blue colour with lodine because
[NEET 2023]
(A) It is a helical molecule

(B) It does not contain complex helices and hence cannot hold iodine molecules
(C) It breakes down when iodine reacts with it
(D) It is a disaccharide

24. Which of the following is not a secondary metabolite? [NEET 2023 mpr
(A) Curcumin (B) Morphine (C) Anthocyanin
(D) Lecithin

25. A dehydration reaction links two glucose molecules to product maltose. If the formula for glucose is then what is the formula for maltose?
[NEET-2022]
Options:
(A) (B) (C) (D)

26. Which of the following are not secondary metabolites in plants? [NEET 2021]
(A) Morphine, codeine (B) Amino acids, glucose
(C) Vinblastin, curcumin (D) Rubber, gums

27. Following are the statements with reference to 'lipids'.
(a) Lipids having only single bonds are called unsaturated fatty acids
(b) Lecithin is a phospholipi(d)
(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. [NEET 2021]
(A) (a) and (b) only (B) (c) and (d) only
(C) (b) and (c) only (D) (b) and (e) only

28. Match List-I with List-II.

List-I		**List-II**	
(a)	Protein	(i)	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. [NEET 2021]

(A) (a)-(iv) (b)-(i) (c)-(ii) (d)-(iii) (B) (a)-(i) (b)-(iv) (c)-(iii) (d)-(ii)

(C) (a)-(ii) (b)-(i) (c)-(iv) (d)-(iii) (D) (a)-(iv) (b)-(iii) (c)-(i) (d)-(ii)

29. Identify the substances having glycosidic bond and peptide bond, respectively in their structure [NEET-2020]

(A) Glycerol, trypsin (B) Cellulose, lecithin (C) Inulin, insulin (D) Chitin, cholesterol

30. 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)	(iii)	(i)	(iv)	(ii)
(2)	(iii)	(iv)	(i)	(ii)

(3)	(ii)	(iii)	(i)	(iv)
(4)	(ii)	(iv)	(iii)	(i)

[NEET-2020]

(A) a (B) b (C) c

(D) d

31. "Ramachandran plot" is used to confirm the structure of :- [NEET OD 2019]

(A) RNA (B) Proteins (C) Triacylglycerides

(D) DNA

32. Which of the following glucose transporters is insulin-dependent?

[NEET 2019]

(A) GLUT II (B) GLUT III (C) GLUT IV

(D) GLUT I

33. Purines found both in DNA and RNA are

[NEET 2019]

(A) Adenine and guanine (B) Guanine and cytosine

(C) Cytosine and thymine (D) Adenine and thymine

34. Consider the following statement :

(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.

[NEET 2019]

(A) (A) is true but (B) is false. (B) Both (A) and (B) are false.

(C) (A) is false but (B) is true. (D) Both (A) and (B) are true.

35. Prosthetic groups differ from co-enzymes in that :

[NEET OD 2019]

(A) they require metal ions for their activity.

(B) they (prosthetic groups) are tightly bound to apoenzymes.

(C) their association with apoenzymes is transient.

(D) they can serve as co-factors in a number of enzyme-catalyzed reactions.

36. The two functional groups characteristic of surgars are
[NEET 2018]
(A) hydroxyl and methyl (B) carbonyl and methyl
(C) carbonyl and hydroxyl (D) carbonyl and phosphate

37. Which one of the following statements is correct, with reference to enzymes? [NEET 2017]
(A) Holoenzyme Apoenzyme + Coenzyme (B) Coenzyme Apoenzyme + Holoenzyme
(C) Holoenzyme Coenzyme + Co-factor (D) Apoenzyme Holoenzyme + Coenzyme

38. Which of the following are not polymeric ?
[NEET 2017]
(A) Proteins (B) Polysaccharides (C) Lipids
(D) Nucleic acids

39. A non-proteinaceous enzyme is
[NEET 2016 2]
(A) deoxyribonuclease (B) lysozyme (C) Ribozyme
(D) ligase

40. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins?
[NEET 2016 P2]
(A) Ester bonds (B) Hydrogen bonds
(C) Electrostatic interaction (D) Hydrophobic interaction

41. Which of the following describes the given graph correctly?
[NEET 2016 P2]

(A) Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme
(B) Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme
(C) Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme
(D) Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme.

42. A typical fat molecule is made up of :
[NEET 2016 P1]

(A) Three glycerol and three fatty acid molecules
(B) Three glycerol molecules and one fatty acid molecule
(C) One glycerol and three fatty acid molecules
(D) One glycerol and one fatty acid molecule

43. Which one of the following statements is wrong?
[NEET 2016 P1]

(A) Glycine is a sulphur containing amino aci(d) (B) Sucrose is a disaccharide.
(C) Cellulose is a polysaccharide. (D) Uracil is a pyrimidine.

44. The chitinous exoskeleton of arthropods is formed by the polymerisation of
[NEET 2015]

(A) N-acetyl glucosamine (B) lipoglycans
(C) keratin sulphate and chondrotin sulphate (D) D-glucosamine.

45. Which of the following statements in incorrect?
[NEET 2015 C]

(A) In competitive inhibition, the inhibitor moleculeis not chemically changed by the enzyme.
(B) The competitive inhibitor does not affect the rate of break down of the enzyme-substrate complex
(C) The presence of the competitive inhibitor decreases the Km of the enzyme for the substrate.
(D) A competitive inhibitor reacts reversibly withthe enzyme to form an enzyme- inhibitor complex

46. Which of the following biomolecules does have a phosphodiester bond? [NEET 2015]

(A) Amino acids in a polypeptide
(B) Nucleic acids in a nucleotide
(C) Fatty acids in a diglyceride
(D) Monosaccharides in a polysaccharide

Solution

1. (B)

Uridine is a nucleoside. Thus, option (1) is incorrect.
Adenylic acid is a nucleotide. Thus, option (2) is correct.
Guanine is a nitrogenous base. Thus, option (3) is incorrect.
Guanosine is a nucleoside. Thus, option (4) is incorrect.

2. (D)
The correct answer is option (4) because lyases are group of enzymes that catalyse the removal of groups from substrates by mechanisms other than hydrolysis leaving double bonds.

Option (A) is incorrect because transferases are enzymes catalysing a transfer of a group G (other than hydrogen) between a pair of substrate S and .

Option (B) is incorrect because oxidoreductases are enzymes which cat(a) oxidoreduction between two substrates S and .

Option (C) is incorrect because dehydrogenases are also known as oxidoreductases.

3. (A)
Option (1) is the correct answer because, ligases are the enzymes that catalyse the linking together of 2 compounds, e.g., enzymes which catalyse joining of et(c) bonds.
= Options (2), (3) and (4) are wrong as ligase catalyse the joining of bonds.

4. (A)

The correct answer is option (1) because

	List-I		List-II
(A)	Primary structure of protein	III	Polypeptide chain with positional information of aminoacids
(B)	Secondary structure of protein	IV	Alpha helix and sheet structure
(C)	Tertiary structure of protein	II	Hollow woolen ball like structure with hydrogen and disulphide bonds
(D)	Quaternary structure of protein	I	Assembly of more than one polypeptides, seen in adult human haemoglobin

Hence, A-III, B-IV, C-II, D-I is the correct match.

5. (A)

Option (A) is the correct answer because with the increase in substrate concentration, the velocity of enzymatic reaction rises at first. The reaction ultimately reaches maximum velocity (.) which is not exceeded by anyfurther rise in concentration of the substrate. This is because the enzyme molecules

are fewer than substrate molecules and after saturation of these molecules, there are no free enzyme molecules to bind the additional substrate molecules

6. (C)

is the correct answer because glutamic acid and aspartic acid are amino acids while lecithin is a phospholipid. Palmitic acid and arachidonic acid are fatty acids.

7. (A)

The correct answer is option (1) as the cofactor of the enzyme carboxypeptidase is zin(c) Niacin is associated with coenzyme NAD and NADP.

Option (4) is incorrect as haem is the prosthetic group in peroxidase and catalase.

8. (A)

Correct answer is option (1)

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

9. (C)

Correct answer is option (3) because malonate shows close structural similarity with the substrate and it competes with the substrate for the substrate binding site of the enzyme succinic dehydrogenase. Option (1), (2) and (4) are incorrect as enzyme activation, co-factor inhibition are not showing structural similarity with substrate.

10. (D)

List-I		**List-II**	
(A)	Cocaine	I.	Erythroxylum
(B)	Heroin	II.	Papaver somniferum
(C)	Morphine	III.	Effective sedative in surgery

(D)	Marijuana	IV.	Cannabis sativa

11. (C)

The correct answer is option (3) as

List-I			List-II
(A)	Lipase	I.	Digests ester bond found in lipids.
(B)	Nuclease	II.	Helps in digestion of phosphodiester bonds found in nucleic acids.
(C)	Protease	III.	Helps in digestion of peptide bond found in proteins.
(D)	Amylase	IV	Digests/breaks the glycosidic bonds found in carbohydrates i.e., digest starch ..... unaller molecules, ultimately yielding maltose, which in turn is cleaved into two glucose molecules by maltase.

12. (A)

The catalytic cycle of an enzyme action can be described in the following steps. (1) First, the substrate binds to the active site of the enzyme, fitting into the active site. (2) The binding of the substrate induces the enzyme to alter its shape, fitting more tightly around the substrate. (3) The active site of the enzyme, now in close proximity of the substrate breaks the chemical bonds of the substrate and the new enzyme-product complex is formed. (4) The enzyme releases the products of the reaction and the free enzyme is ready to bind to another molecule of the substrate and run through the catalytic cycle once again. Options (2), (3) and (4) are incorrect as the steps mentioned are in the wrong sequence.

13. (D)

Low temperature - temporary inactive enzyme activity High temperature - enzyme denaturation because enzymes are proteins. Competitive inhibition - Inhibitor resemble to substrate, inhibitor inhibit enzyme activity Enzyme have common binding site for substrate and inhibitor.

14. (C)

A protein is imagined as a line left end represented by first amino acid (N-terminal) and the right and represented by last amino acid (C-terminal). Adult human haemoglobin consists of 4 subunits (2a and 2β).

15. (D)

Primary proteins are the linear chains of amino acids, joined by peptide bonds.

16. (B)

SI: Amino acids are molecules that contain both an amino group (-NH2) and a carboxyl group (-COOH). These groups are ionisable, meaning they can gain or lose protons depending on the pH of the solution they are in. At different pH levels, amino acids can exist in different forms: as cations when the pH is low (acidic), as zwitter ions when the pH is near their isoelectric point (pH at which the net charge is zero) and as anions when the pH is high (basic). The ionisation state of these groups affects the overall charge and structure of the amino acid.

SII: Some amino acids can exist as zwitter ion in acidic pH and some can exist as zwitter ion in basic pH.

17. (C)

Peroxidase and catalase enzymes catalyze the breakdown of Hydrogen peroxide to water and oxygen, Haem is the prosthetic group.

18. (C) Correct answer is (c), (d) and (e) only

19. (B)

Adenine :Purine (double ringed structure) found in both DNA and RNA)

Anthocyanin Pigment (secondary metabolite)

Chitin Homopolysaccharide of mathrm N-acetylglucosamine found in fungal cell wall and exoskeleton of Arthropods

Codeine Alkaloid (secondary metabolite)

20. (C)

The correct matchings are :

(A) Protein - This is a polymer made up of amino acids linked by peptide bonds. So, (A) matches with (IV) Peptide bonds.

(B) Unsaturated fatty acid - These have one or more double bonds in their hydrocarbon chain. So, (B) matches with

(I) double bonds.

(C) Nucleic acid - These are polymers made up of nucleotides linked by phosphodiester bonds. So, (C) matches with (II) Phosphodiester bon(d)

(D) Polysaccharide - These are polymers made up of monosaccharides linked by glycosidic bonds. So, (D) matches with (III) Glycosidic bonds.

So, the correct answer is Option C : (A)-(IV), (B)-(I), (C)-(II), (D)-(III).

21. (D)

Melonate inhibits the growth of pathogenic bacteria by inhibiting the activity of Succinic dehydrogenase.

22. (A)

Inulin is a polymer of fructose. Therefore, the correct answer is Option A : Fructose.

23. (B)

Cellulose does not form blue colour with iodine because it does not contain complex helices and hence cannot hold iodine molecules.

24. (D)

Secondary metabolites are organic compounds produced by organisms that are not directly

involved in the normal growth, development, or reproduction of the organism. Examples include antibiotics, pigments, and toxins.

Curcumin, morphine, and anthocyanin are all examples of secondary metabolites.

Lecithin, however, is a type of phospholipid, which is a primary metabolite as it is directly involved in the normal growth and development of cells by being a key component of cell membranes.

25. (C)

26. (B)

Amino acids and Glucose are primary metabolites but not secondary metabolites as they have some known functions.

27. (C)

Lecithin is a phospholipid. Glycerol is trihydroxy propane. Unsaturated fatty acids have double bonds in R group at one or more regions.

28. (A)

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

29. (C)

Glycosidic bond is present in carbohydrates (like inulin) and peptide bond is present in proteins (like insulin).

30. (D)

• Inhibitor of catalytic activity —Malonate

• Possess peptide bonds — Collagen

• Cell wall material in fungi —Chitin
• Secondary metabolite — Ricin

31. (B) Proteins
32. (C)
GLUT-IV is insulin dependent and is responsible for majority of glucose transport into muscle and adipose cells in anabolic conditions. Whereas GLUT-I is insulin independent and is widely distributed in different tissues.
33. (A)
Purines found both in DNA and RNA are Adenine and guanine
34. (A) Coenzyme or metal ion that is tightly bound to enzyme protein is called prosthetic group. A complete catalytically active enzyme with its bound prosthetic group is called holoenzyme.
35. (B) Correct answer is (b) they (prosthetic groups) are tightly bound to apoenzymes.
36. (C)
All sugars are characterized by two functional groups such as carbonyl (C=O) and hydroxyl (C−OH). Here are the examples:
37. (A)
Holoenzyme is the active form of the enzyme. It is made of 2 components called the apoenzyme and coenzyme. A cofactor can also be a called as a coenzyme if it is an organic molecule. The apoprotein itself is inactive. On binding with the cofactor, it gets activated resulting in the formation of a holoenzyme that is functional.
38. (C) To determine which of the following options are not polymeric, we need to analyze each option provided:

1. **Proteins**:
- Proteins are polymers made up of amino acids. These amino acids are linked together through peptide bonds to form long chains, which then fold into specific three-dimensional structures. Therefore, proteins are considered polymeric.

2. **Polysaccharides**:
- Polysaccharides are also polymers. They are formed by the linkage of monosaccharides (simple sugars) through glycosidic bonds. Examples include starch and cellulose. Thus, polysaccharides are polymeric.

3. **Nucleic Acids**:
- Nucleic acids, such as DNA and RNA, are polymers made up of nucleotide units. Each nucleotide consists of a sugar, a phosphate group, and a nitrogenous base, and they are linked together by phosphodiester bonds. Therefore, nucleic acids are polymeric.

4. **Lipids**:
- Lipids are not considered polymers in the same way that proteins, polysaccharides, and nucleic acids are. Lipids are a diverse group of hydrophobic molecules that do not consist of repeating monomeric units. They include fats, oils, and steroids, which are not formed by the polymerization of smaller units.

39. (C) Ribozyme is non proteinaceous enzyme as it is 23 rRNA acts as a catalyst during protein synthesis.

40. (C)
Ester bonds are formed in nucleic acids and lipids, but not proteins.

41. (B)
Any chemical reaction includes formation of transition state between reactant and product. Formation of transition state requires high energy content of reactant molecules for alignment of reacting groups, formation of transient unstable charges, rearrangements of chemical bonds etc. The energy required for formation of transition state is termed as activation energy. Enzymes enhance the rate of reaction by lowering down the activation energy of transition state. In given graph, energy of substrate is higher than that of product reflecting the endothermic nature of reaction. And B is the activation energy in absence of enzyme which is lowered down to A in presence of enzyme.

42. (B) fat is a triglyceride which is made up of 3 molecules of fatty acids and one molecule of glycerol

43. (A)
Glycine is the simplest amino acid which is devoid of sulpher content

44. (A)
Chitin is a structural polysaccharide that constitutes the exoskeleton of arthropods. It is a complex carbohydrate in which N -acetyl glucosamine monomers are joined together by -linkages. Chitinous exoskeleton provides strength and elasticity to arthropods.

45. (B)
Competitive inhibition is a type of enzyme inhibition in which the inhibitor binds to the active site on the enzyme. This prevents binding of the substrate to the enzyme and hence affects the rate of breakdown of the enzyme-substrate complex. Competitive inhibitors bind reversibly to the active site of the enzyme to form an enzyme-inhibitor complex. In this, the maximum velocity (Vmax) is unchanged while Km is increased as inhibitor interferes with the binding of substrate and this inhibition can be overcome by increasing the substrate concentration. In this, the inhibitor molecule is not chemically changed by the enzyme.

46. (B)
Nucleic acids have phophodiester bond in a nucleotide.