1. **HSP60?**

The Hsp60 class of protein has a barrel shape into which the protein fits. It acts as a template, binding and rebinding portions of the unfolded protein until folding is completed. It hydrolyzes many ATP bonds to provide energy for the process.

2. **Tryptophan, Phenyl alanine, and Tyrosine Structure?**

**Tryptophan:** The more complex ring structure in tryptophan is an indole ring with a nitrogen that can engage in hydrogen bonds. Tryptophan is therefore also more polar than phenylalanine. Tyrosine and tryptophan are significantly more polar than phenylalanine, because of the tyrosine hydroxyl group and the nitrogen of the tryptophan indole ring.

**Phenylalanine:** In the amino acid phenylalanine, the ring contains no substituents, and the electrons are shared equally between the carbons in the ring, resulting in a very nonpolar.

**Tyrosine:** a hydroxyl group on the phenyl ring engages in hydrogen bonds, and the side chain is therefore more polar and more hydrophilic.

3. **Which enzymes convert maltose into sugar?**

The enzyme **maltase** present in the lining of the small intestine breaks maltose into two units of glucose.

4. **Proton Bonding to heme and how its function tissue and lungs?**

**Protons bind** at various places on the protein, while carbon dioxide binds at the α-amino group. ... A reduction in the total **binding** capacity of **hemoglobin** to oxygen (i.e. shifting the curve down, not just to the right) due to reduced pH is called the root effect.

**Function Tissue and Lungs:** Hemoglobin transport O2 from lungs to tissues and CO2 from tissues to lung

5. **Protein folding?**

**Protein folding** is the process by which a **protein** structure assumes its functional shape or conformation. All **protein** molecules are heterogeneous unbranched chains of amino acids. By coiling and **folding** into a specific three-dimensional shape they are able to perform their biological function.

6. **Lactose intolerance?**

**Lactose intolerance** is a condition in which people have**symptoms** due to the decreased ability to digest **lactose**, a sugar found in **dairy** products. ... **Symptoms** may include abdominal pain, bloating, diarrhea, gas, and nausea.

7. **Write 2 Name Charged R groups?**

Lysine, arginine, histidine

8. **Carbohydrate and its biological importance?**

Carbohydrates are all about energy and are found in foods like fruits, vegetables,**breads**, pasta, and dairy products. Your body uses these foods to make **glucose**, which is your body's main energy source. **Glucose** is a type of **sugar** that can be used right away for energy or stored away to be used later.

9. **Beta bonds?**

1,4 glycosidic **bond**. 1,4 **beta** glycosidic **bonds** are formed when the OH is above the plane.

10. **Alanine Structure?**

Alanine is an α-amino acid that is used in the biosynthesis of proteins. It contains an α-amino group, an α-carboxylic acid group, and a side chain methyl group, making it a nonpolar, aliphatic amino acid. Formula**:** $C_3H_7NO_2$

11. **Amino acid sequence?**

Protein molecules are made of strings of **amino acids** in a particular order. This string is called an **amino acid sequence**.

12. **Positive, Negative Hemoglobin and its allostropic form?**

**13. Sickle cell anemia?**

In Sickle cell anemia a **Glutamate** residue is replaced by **Valine** at position 6 of beta chain of Hemoglobin, resulting in decreased functioning and increased fragility of Hb.

**14. Factor of influence free energy of protein?**

The free energy of a protein molecule is influenced by • (1) the hydrophobicity, • (2) hydrogen bonds, • (3) electrostatic interactions, and • (4) the conformational entropy due to the restricted motion

**15. Protein involve in respiration?**

This produces the sweet smell of acetone on the breath, noticeable in a diabetic state. **Proteins** are used as an energy source only if **protein** intake is high, or if glucose and fat sources are depleted, in which case amino acids from **protein** breakdown are converted into molecules that can enter the TCA Cycle.

**16. Alanine curve and value ?**

On the left in both the chemical reaction and the titration curve, you should imagine that alanine is in a very acidic solution at a pH of about 0. As you move from left to right accross the page, you are adding hydroxide to the solution. This increases the hydroxide concentration and decreases the hydrogen ion concentration. Note that alanine loses protons as you move from left to right. At the first pKa, the alpha-carboxyl dissociates. At the second pKa, the alpha-amino dissociates. IP Value is 5.7.

**17. Explain Electrostatic interaction in protein?**

Specific **interactions** are largely **electrostatic**. While the hydrophobic effect is the major driving force in **protein** folding,**electrostatic interactions** are important in **protein** folding, stability, flexibility, and function.

**18. Explain term induce fit?**

The structural adaptation that occurs between protein and ligand is called induced fit.

**19. What is anomers?**

*I*someric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atom are called **anomers**

**20. Name the factors that counteract entropy?**

The hydrophobic effect and hydrogen bonds are the major stabilizing contributions which counteract entropy.

**21. How Misfolding of protein occur?**

Misfolding of proteins may occur spontaneously. or caused by a mutation in a particular gene, producing an altered protein. In addition some apparently normal proteins can, after abnormal proteolytic cleavage, take on a unique conformational state That leads to the formation of long fibrillar protein assemblies consisting of $\beta$ pleated sheets

**22. What is the mean by equilibrium constant for reversible reaction?**

The tendency of any acid (HA) to lose a proton and form its conjugate base (Ave-) is defined by the equilibrium constant (Keq) for the reversible reaction

**23. What are the perk quaterny structure?**

The increase in size increases the number of possible interactions between amino acid residues and therefore makes it more difficult for a protein to unfold and refold.

**24. How folding of protein take place?**

**Folding** begins to **occur** even during translation of the polypeptide chain. Amino acids interact with each other to produce a well-defined three-dimensional structure, the **folded protein**. known as the native state.

**25. AminoAcid?**

A simple organic compound containing both a carboxyl (—COOH) and an amino (—$NH_2$) group.

**26. Aliphatic non polar R group?**

Aliphatic R groups are nonpolar and hydrophobic. Hydrophobicity increases with increasing number of C atoms in the hydrocarbon chain. Although these amino acids prefer to remain inside protein molecules, alanine and glycine are ambivalent, meaning that they can be inside or outside the protein molecule.

**27. Glysine and proline why exist in beta sheet?**

Glycine because it is small and flexible. Proline because peptide bonds involving the imino nitrogen readily assume the cis configuration, a form that is particularly amenable to a tight turn.

**28. PKA**

The p*K*a expresses, on a logarithmic scale, the relative strength of a weak acid or base

**29. Why proline disrupt alpha helix?**

In **proline**, the nitrogen atom is part of a rigid ring, and rotation about the N-C bond is not possible. Thus, a proline residue introduces a destabilizing kink in an α helix.

**30. Essential amino acid?**

Histidine, isoleucine, leucine, lysine, methionine,phenylalanine, threonine, tryptophan, and valine.

**31. What is Keratin?**

**Keratin** are a family of closely related, fibrous proteins whose structure is nearly entirely α-helical. They are a major component of tissues such as hair, nails, hoofs and skin. In contrast to keratin, myoglobin, whose structure is also highly α-helical, is a globular, flexible molecule. Nearly all trans membrane proteins contain alpha helices in their membrane spanning domains.

**32. What is the Basic Protein Structure?**

The **primary structure** of a **protein** refers to the**sequence** of amino acids in the polypeptide chain. ... The **sequence** of amino acids in insulin was discovered by Frederick Sanger, establishing that**proteins** have **defining** amino acid sequences.

**33. IP Value of lysine?**

9.47

**34. Function of heme in hemoglobin and myoglobin?**

Functional relation of each protein in the subsequent discussion to see how both these proteins are suited to perform their required function in their relative sites in the body.

**35. Glutamate and Glutamine write one letter representation?**

Glutamate (Glu), Glutamine (Gln)

**36. Define isomerism?**

**Isomerism** is the phenomenon whereby certain compounds, with the same molecular formula, exist in different forms owing to their different organisations of atoms.

**37. Glucogenic amino acid?**

Thirteen amino acids: glycine, alanine, serine, aspartic acid, asparagine, glutamic acid, glutamine, proline, valine, methionine, cysteine, histidine and arginine, are purely 'glucogenic'

**38. Name Five protein product?**

Eggs. **Greek Yogurt**. **Cottage Cheese**. **Swiss Cheese**. 2-Percent **Milk**

**39. D amino acid?**

D-amino acids are also non standard amino acids that occur naturally and include –free D- serine, and D-aspartate in brain tissue –D-alanine & D-glutamate in the cell walls of gram positive bacteria. D-amino acids are also found in some antibiotics.

**40. Optical activity isomers?**

The two **isomers** non-superimposable mirror images of each other, we call them **optical isomers** or enantiomers. An**example** is the amino acid alanine

**41. Polysaccharide?**

A carbohydrate whose molecules consist of a number of sugar molecules bonded together. (e.g. starch, cellulose, or glycogen).

**42. Carbohydrate and Major Groups?**

A carbohydrate is a biomolecule consisting of carbon, hydrogen and oxygen atoms, usually with a hydrogen–oxygen atom ratio of 2:1.

**Monosaccharides:** They are the simplest form of sugar and are usually colorless, water-soluble, and crystalline solids. Some **monosaccharides** have a sweet taste.**Examples** of **monosaccharides** include glucose (dextrose), fructose (levulose), and galactose.

**Polysaccharide:** A carbohydrate whose molecules consist of a number of sugar molecules bonded together. (e.g. starch, cellulose, or glycogen).

**Oligosaccharide:** a carbohydrate whose molecules are composed of a relatively small number of monosaccharide units.

**Disaccharide:** any of a class of sugars whose molecules contain two monosaccharide residues.

**43. Furfural compound?**

**Furfural** is an organic **compound** produced from a variety of agricultural byproducts, including corncobs, oat, wheat bran, and sawdust. The name **furfural**comes from the Latin word furfur, **meaning** bran, referring to its usual source. Chemically, **furfural** is an aldehyde of furan.

**44. What are Chaperons and function?**

The reason for this behaviour is that **protein** folding is severely affected by heat and, therefore, some chaperones act to prevent or correct damage caused by misfolding. Other chaperones are involved in folding newly made **proteins** as they are extruded from the ribosome.

**45. Hydrophobic interaction?**

Hydrophobic Interactions occur between non-polar uncharged side chains such as between aromatic groups of phenylalanine side chains.

**46. Different type of pleated sheets?**

**47. Transcription?**

Transcription is the first step of gene expression, in which a particular segment of DNA is copied into RNA by the enzyme RNA polymerase

**48. Diasccaride and two example?**

A **disaccharide** (also called a double sugar or biose) is the sugar formed when two monosaccharides (simple sugars) are joined by glycosidic linkage. Like monosaccharides, **disaccharides** are soluble in water. Three common **examples** are sucrose, lactose, and maltose.

**49. Alpha helix stabilized?**

The alpha helix ($\alpha$-helix) is a common motif in the secondary structure of proteins and is a righthand-coiled or spiral conformation (helix) in which every backbone N−H group donates a hydrogen bond to the backbone C=O group of the amino acid located three or four residues earlier along the protein sequence.

**50. D and L Isomer**

The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, the glyceraldehydes.

**51. Tautomer?**

Each of two or more isomers of a compound which exist together in equilibrium, and are readily interchanged by migration of an atom or group within the molecule.

**52. Protein disulphide isomers?**

**Protein disulfide** isomerase, or PDI, is an enzyme in the endoplasmic reticulum (ER) in eukaryotes and the periplasm of bacteria that catalyzes the formation and breakage of **disulfide** bonds between cysteine residues within **proteins** as they fold.

**53. Disulphide bridge in tertiary structure?**

The amino acid cysteine in a protein can form a covalent disulfide bond with another cysteine molecule through spontaneous (nonenzymatic) oxidation of their sulfhydryl groups.

**54. Properties of fatty acid?**

**55. Hemoglobin is found in?**

**Hemoglobin is found** in the red blood cells of all vertebrates apart from white-blooded fish. It also occurs in some invertebrates.

**56. Net Charge on alanine?**

Net Charged on alanine is Zero (isometric form).

**57. Monosaccaride and two example?**

They are the simplest form of sugar and are usually colorless, water-soluble, and crystalline solids. Some **monosaccharides** have a sweet taste.**Examples** of **monosaccharides** include glucose (dextrose), fructose (levulose), and galactose.

**58. Diffrence between hemicatal and Hemiketal?**

Molecules (aldehyde or ketone), which contain both an alcohol and a carbonyl group, can instead undergo an intramolecular reaction to form a cyclic**hemiacetal**/ **hemiketal**. These, on the contrary, are more stable as compared to the intermolecular**hemiacetals**/hemiketals.

**59. Function of lanolin?**

**Lanolin** and its derivatives are used in the protection, treatment and beautification of human skin.

**60. What is Mtotif?**

A motif also called a super secondary structure is simply a recognizable folding pattern involving two or more elements of secondary structure and the connection(s) between them.
An example is a Beta-α-Beta loop.

**61. Enzyme and classification?**

a substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction. Enzymes are classified according to the reactions they catalyze. The six classes are as follows: **oxidoreductases**, **transferases**, **hydrolases**, **lyases**, **isomerases**, and **ligases.**

**62. Waxes ? properties and types?**

Waxes A second group of neutral lipids that are of physiological importance. Although they are a minor component of biological systems.

**Properties:** Waxes are insoluble in water, but soluble in fat solvents and are negative for acrolein test. very resistant to rancidity. Waxes are not easily hydrolyzed as the fats and are indigestible by lipases (enzymes responsible for fat digestion in body) Thus they are of no nutritional value.

**Waxes are of two types:** True waxes (Bees-wax, • Spermaceti of the sperm whale), Other Waxes or Non true waxes or Wax-like compounds.

**63. Dissociation stage of alanine?**

**64. Renature and Explain with ribonuclease?**

Regain their native structure and their biological activity if returned to conditions in which the native con-formation is stable. • At Very High or Low pH. At Very High Temperatures.By Heavy Metal Ions.By Small Polar Molecules • • This process is called renaturation.

A classic example is the denaturation and renaturation of ribonuclease A • Purified ribonuclease A denatures completely in a concentrated urea solution in the presence of a reducing agent. When the urea and the reducing agent are removed, the randomly coiled, denatured ribonuclease spontaneously refolds into its correct tertiary structure, restoring its catalytic activity. This proofs that denaturation of some proteins is reversible.

**65. What are prosthetic groups?**

**Prosthetic Group**. **Prosthetic group** is the same as the coenzyme but are tightly bound to the enzyme. When they are split off, the enzyme is mostly denatured. **Examples** include flavin nucleotides and heme.

**66. Define isomers / Enanatiomer?**

Each of two or more compounds with the same formula but a different arrangement of atoms in the molecule and different properties.

**67. Define the structure of amino acid?**

All **amino acids** found in proteins have this basic **structure**, differing only in the **structure** of the R-group or the side chain.. The simplest, and smallest, **amino acid** found in proteins is glycine for which the R-group is a hydrogen (H). In proteins, only the L-isomer is found normally.

**68. Why glycine dose not form alpha helix?**

**Glycine** occurs infrequently in α helices for a different reason. It has more conformational flexibility than the other amino acid residues Polymers of glycine tend to take up coiled structures quite different from an α helix.

**69. Why lysine theonine and proline?**

**70. Destabilized the alpha helix?**

Charge amino acid side chains have a tendency to **destabilize** the**alpha helical** or beta pleated sheat structures.

**71. Define buffer**

A buffer solution is an aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. Its pH changes very little when a small amount of strong acid or base is added to it.

**72. Epimer and its two example**

Each of two isomers with different configurations of atoms about one of several asymmetric carbon atoms present. E.g The sugars glucose and galactose are **epimers**

**73. Medical important of protein?**

**Protein** is an **important** component of every cell in the body. ... Your body **uses protein** to build and repair tissues. You also use **protein** to make enzymes, hormones, and other body chemicals. **Protein** is an **important** building block of bones, muscles, cartilage, skin, and blood.

**74. Catalytic Protein?**

Enzyme **catalysis** is the increase in the rate of a chemical reaction by the active site of a **protein**. The**protein catalyst** (enzyme) may be part of a multi-subunit complex

**75. Aromatic amino acid and example?**

The aromatic amino acids have been grouped together because they all contain ring structures with similar properties, **but their polarity differs. Example** Phenylalanine, Tyrosine, Tryptophan.

**76. Role hydrogen bond in histidine?**

**Hydrogen Bonds** Involving **Histidine** Imidazole Nitrogen Atoms: A New tructural **Role** for **Histidine** Residues in Proteins. ... The **amino acid histidine** can play a significant **role** in the structure and **function** of proteins.

**77. How many kind entropy?**

**78. Factor Stablity of protein?**

PH and Temperature.

**79. Amylase?**

An enzyme, found chiefly in saliva and pancreatic fluid, that converts starch and glycogen into simple sugars.

**80. Beta blends?**

**Beta bends** or tight turns, are a type of secondary structure. In a **beta turn**, a tight loop is formed when the carbonyl oxygen of one residue forms a hydrogen bond with the amide proton of an amino acid three residues down the chain. This hydrogen bond stabilizes the **beta bend** structure.

**81. Osazone?**

**Osazones** are a class of carbohydrate derivatives found in organic chemistry formed when sugars are reacted with excess of phenylhydrazine. The famous German chemist Emil Fischer developed and used the reaction to identify sugars whose stereochemistry differed by only one chiral carbon.

**82. What is Honey?**

Honey is largely invert sugar and the presence of fructose accounts for the greater sweetness of honey. They produce an enzyme called invertase in their salivary glands. Enzymes are organic compounds that speed up a **biochemical** reaction.

**83. Reversible binding of protein?**

The functions of many proteins involve the reversible binding of other molecules. • A molecule bound reversibly by a protein is called a ligand.

**84. Isolectric point?**

**85. Position of O and Proton Hemoglobin?**

**86. Free Energy Constant equation?**

**87. Abbrivation of amino acid and one letler symbol?**

| **Amino acids** | **Symbols** | | **Codons** |
|---|---|---|---|
| Alanine | Ala | A | GCA, GCC, GCG, GCU |
| Cysteine | Cys | C | UGC, UGU |
| Aspartic acid | Asp | D | GAC, GAU |
| Glutamic acid | Glu | E | GAA, GAG |
| Phenylalanine | Phe | F | UUC, UUU |
| Glycine | Gly | G | GGA, GGC, GGG, GGU |
| Histidine | His | H | CAC, CAU |
| Isoleucine | Ile | I | AUA, AUC, AUU |
| Lysine | Lys | K | AAA, AAG |

| | | | |
|---|---|---|---|
| Leucine | Leu | L | UUA, UUG, CUA, CUC, CUG, CUU |
| Methionine | Met | M | AUG |
| Asparagine | Asn | N | AAC, AAU |
| Proline | Pro | P | CCA, CCC, CCG, CCU |
| Glutamine | Gln | Q | CAA, CAG |
| Arginine | Arg | R | AGA, AGG, CGA, CGC, CGG, CGU |
| Serine | Ser | S | AGC, AGU, UCA, UCC, UCG, UCU |
| Threonine | Thr | T | ACA, ACC, ACG, ACU |
| Valine | Val | V | GUA, GUC, GUG, GUU |
| Tryptophan | Trp | W | UGG |
| Tyrosine | Tyr | Y | UAC UAU |

**Q 01 Write Characteristics Of Enantiomers?**

Stereoisomersthat are mirror images of each other are called **enantiomers Enantiomers** have nearly identical chemical properties but differ in a characteristic physical property: their interaction with plane-polarized light. Since they are non super posable mirror images of each other, the two forms represent a class of stereoisomers called enantiomers.

**Q 02 Name Two Diseases Caused By Misfolding Of Proteins**

Misfoldingof proteins may occur spontaneously or caused by a mutation in a particular gene, producing an altered protein. In addition some apparently normal proteins can, after abnormal proteolytic cleavage, take on a unique conformational state That leads to the formation of long fibrillarprotein assemblies consisting of I3pleated sheets

**Q 03 What Are Digestive Proteins.Explain With Examples?**

**Digestive Proteins:** These proteins are digestive enzymes which digest our food materials such as carbohydrates, proteins, lipids and include

Amylase

Pepsin

Lipases etc. **(Pepsinis** one of three principal protein-degrading, or proteolytic, enzymes in the igestive system, the other two being chymotrypsinand trypsin)

**Q 04 What Are Ketogenic Amino Acids?**

**Ketogenic amino acids** Amino acids whose catabolism yields either **acetoacetate or its precursor, (acetyl CoA or acetoacetyl CoA)** are termed **ketogenic** Acetoacetate is one of the ketone bodies which also include 3-hydroxybutyrate and acetone **Leucine and lysine** are the only exclusively ketogenic amino acids found in proteins Their carbon skeletons are not substrates for gluconeogenesis and, therefore, cannot give rise to the net formation of glucose or glycogen in the liver, or glycogen in the muscles

**Q 05 Give Characteristics Of Furfural Compounds**

The furfural products thus formed can condense with certain organic phenols (a-naphthol) to form compounds having characteristic colours This forms basis of certain tests used for detection of sugars

**Q 06 Name Factors That Influence Free Energy Of Protein Molecules**
The free energy of a protein molecule is influenced by (1) the hydrophobicity, hydrogen bonds,electrostatic interactions, and (4) the conformational entropy due to the restricted motion.

**Q 07 What Do U Know About Allosteric Amino Acid?**
In biochemistry, allosteric regulation is the regulation of an enzyme by binding an effector molecule at a site other than the enzyme's active site. The site to which the effector binds is termed the allosteric site or regulatory site.

**Q 08 Deffin Allotropy?**
the existence of two or more different physical forms of a chemical element.

**Q 09 What Is HSP60?**
Heat shock protein 60 **(HSP60)** is a mitochondria! chaperonin that is typically held responsible for the transportation and refolding of proteins from the cytoplasm into the mitochondrial matrix.

**Q 10 Characteristics Of Furfural Comounds?**
**Furfural** is an organic compound produced from a variety of agricultural byproducts, including corncobs, oat, wheat bran, and sawdust. The name **furfural** comes from the Latin word furfur, meaning bran, referring to its usual source. **Furfural** is an almond-scented, oily, colorless liquid that turns yellow to dark brown when exposed to air. It is **used as** a solvent for refining lubricating oils, as a fungicide and weed killer and in the production of tetrahydrofuran, an important industrial solvent.

**Q 11 How Duchenne Muscular Dystrophy Is Caused?**
**DMD** is a genetic disease. Those who inherit it have a defective gene related to a **muscular** protein called dystrophin. This protein keeps **muscle** cells intact. Its absence **causes rapidmuscular** deterioration as a child with **DMD** grows.

**Q 12 Diffrence Betwwen Hemiacetals And Hemiketals?**

The formation of these ring structures is the result of a general reaction between alcohols and aldehydesorketonesto form derivatives called **hemiacetalsorhemiketals.** Which contain an add itionalasymmetric **carbon atom** and thus can exist in two stereoisomericforms

**Q 13 How Misfolding Of Proteins Occur?**

**Protein misfolding:** aggregation and amyloid formation. **Protein misfolding** is a common and intrinsic propensityof **proteins** that **occurs** continuously. **Misfolding** is influenced by the amino acid composition, and certain mutations are known to accelerate the process.

**Q 14 What Are Monosaccharides? Write Two Examples?**
**Monosaccharides(simple** sugars) are those which cannot be hydrolyzed further into simpler forms The backbones of common monosaccharidesareunbranchedcarbon chains in which all the carbon atoms are linked by single bonds

**Q 15 What Are Chaperons And Write Its Main Function.**
**molecular chaperones** are proteins that assist the covalent folding or unfolding and the assembly or disassembly of other macromolecular structures The reason for this behaviour is that protein folding is severely affected by heat and,therefore, some **chaperones** act to prevent or correct damage caused by misfolding. Other **chaperones** are involved in folding newly made proteins as they are extruded from the ribosome.

**Q 16 What Are Carbohydrates? And Write Four Major Groups Of Carbohydrates.**

**Q 17 Anomers And Anomeric Carbon**
The **anomeric carbon** is a stereocenter. An important feature is the direction of the OH group attached to

**theanomeric carbon.** When the hydrogen is still attached, and the oxygen is not bonded 0-0-C, this is called a hemiacetal functional group.

### Q 18 Starch And Its Stracture

Starch molecules arrange themselves in the plant in semi-crystalline granules. Each plant species has a unique starch granular size: rice starch is relatively small (about 2 pm) while potato starches have larger granules (up to **100 pm).** Starch becomes soluble in water when heated.

### Q 19 Beta Bonds

1,4glycosidic **bond. ...** There are are two types of glycosidic **bonds -** 1,4 alpha and 1,4 **beta** glycosidic **bonds.** 1,4 alpha glycosidic **bonds** are formed when the OH on the carbon-1 is below the glucose ring; while 1,4 **beta** glycosidic **bonds** are formed when the OH is above the plane.

### Q 20 Side Chain Importance Of Alanine .Valine.Lucine

**Role** in structure: **Alanine** is arguably the most boring **amino acid.** It is not particularly hydrophobic and is non-polar. ... **Role in function:** The **Alanine side chain** is very non-reactive, and is thus rarely directly involved in protein **function** Valine is a **branched-chain amino acid (BCAA)** that works with the other **twoBCAAs,** isoleucine and leucine, to promote normal growth, repair tissues, regulate blood sugar, and provide the body with energy. Valine helps stimulate the **central nervous system,** and is needed for proper mental functioning. Previous studies with Substance P (SP) antagonists (GR 71251, [DPro9, Pro10, Trp11]SP and [DPro9, MeLeu10, Trp11]SP) have suggested the existence in the guinea-pig ileum (GPI) of two distinct tachykinin receptors associated with the contractile responses of [Pro9]SP and septide.

### Q 21 Domain In Protein

A **protein domain** is a conserved part of a given **protein** sequence and (tertiary) structure that can evolve, function, and exist independently of the rest of the **protein** chain. Each **domain** forms a compact three-dimensional structure and often can be independently stable and folded.

### Q 22 Protein Structure?

The primary **structure** of a **protein** refers to the sequence of amino acids in the polypeptide chain. The primary **structure** is held together by peptide bonds that are made during the process of **protein** biosynthesis.

### Q 23 Basics Of Classification Of Proteins

**Protein Classification. Proteins** are the macromolecules responsible for the biological processes in the cell. They consist at their most basic level of a chain of amino acids, determined by the sequence of nucleotides in a gene. ... A polypeptide is a chain of amino acids.

### Q 24 What Are Carbohydrates?Also Tell Their Major Groups

### Q 25 Note On Transcription

**Transcription** is the process of producing an RNA **transcript** that is complementary to a DNA template. It can be thought of as DNA-dependent RNA synthesis.

### Q 26 What Is Diasaccharide Two Examples 3

A disaccharide (also called a double **sugar** or biose) is the **sugar** formed when two monosaccharides (simple sugars) are joined by glycosidic linkage. Like monosaccharides, disaccharides are soluble in **water.** Three common examples are sucrose, **lactose,** and **maltose.**

### Q 27 Quatnary Structute Of Protein

Many **proteins** are actually assemblies of multiple polypeptide chains. The **quaternary structure** refers to the number and arrangement of the **protein** subunits with respect to one another. Examples of **proteins** with **quaternary structure** include hemoglobin, DNA polymerase, and ion channels.

### Q 28 How Alpha Helix Stablize.Tautomers Define

The alpha helix is a rod like structure. A tightly coiled backbone forms the inner part of the rod and the side chain extends outwards in a helical manner. The alpha helix is stabilized by hydrogen bonds between the NH and CO groups of the main chain I.e the CO group of each aminoacids forms a H-bond with the NH group of the amino acid I.e situated four residues ahead in the sequence

### Q 29 Carbohydrates K Bilogical Importance

**Carbohydrates** provide energy to the body, particularly through glucose, a simple sugar that is found in many basic foods. ... As an immediate source of energy, glucose is broken down during the process of cellular respiration, which produces ATP, the energy currency of the cell.

### Q 30 What Is Role Proton Bind With Heme Group In Tissues And Lung

### Q: 31 Biomedical importance of protein Which force help to stability of 3-d structure of protein?

Protein structure is the three-dimensional arrangement of atoms in an amino acid-chain molecule. Proteins are polymers — specifically polypeptides — formed from sequences of amino acids, the monomers of the polymer. A single amino acid monomer may also be called a residue indicating a repeating unit of a polymer. Proteins form by amino acids undergoing condensation reactions, in which the amino acids lose one water molecule per reaction in order to attach to one another with a peptide bond. By convention, a chain under 30 amino acids is often identified as a peptide, rather than a protein.

### Q 32 Example of protein denaturation in our daily life?

Examples of Denatured Proteins. Though protein denaturation is detrimental for cell survival, it is often encountered in daily life. ... Similarly, altering the pH of milk by adding acids such as citric acid from lemon juice denatures milk proteins and curdles the milk.

### Q 35 what are ketogenic amino acid?

Ketogenic amino acid. A ketogenic amino acid is anamino acid that can be degraded directly into acetyl-CoA, which is the precursor of ketone bodies. This is in contrast to the glucogenic amino acids, which are converted into glucose.

### Q describe alpha helix or disulphide bridge?

It is a sequence of amino acids. 2. It is a linear polymer: linking the alphacacboxyl group of one amino acid to the alpha amino group of another amino acid => PEPTIDE BOND (covalent bond). 3. In some proteins, the linear polypeptide chain is cross-linked: Disulfide bonds. The primary structure is a polypeptide, in which:
+ each amino acid in the peptide is a residue.
+ there is a regularly repeating segment called the main chain or backbone,and a variable part, comprised of the side chain.

### Q What are allosteric form of hemoglobin ?

Allostery in haemoglobin. Haemoglobin is an allosteric protein. ... In fact the binding of oxygen to onehaemoglobin subunit induces conformational changes (discussed before) that are relayed to the other subunits, making them more able to bind oxygen by raising their affinity for this molecule.

### Q What is tittration curve of glycine?

The end point of a titration curve represents the observed end of the titration. ... In this experiment we are finding out the titration curve of the amino acid Glycine. Glycine is a diprotic amino acid which means that it has two dissociable Protons, one on the a amino group and the other on the carboxyl group.

### Q Difference btw secondary and tertiary structure of proteins

Explain the **differences between** primary, **secondary and tertiary protein structure.** Primary **structure** is the order in which what amino acid is bound the other **with a** peptide bond. This is coded for by the order of codons **in a** gene. ... **Thisstructure** is determined by hydrogen bonds **between the different** amino acids

### Q Define electrostatic forces in protein interactions?

Protein electrostatic properties stem from the proportion and distribution of polar and charged residues. Polar and charged residues regulate the electrostatic properties by forming short-range interactions, like salt-bridges and hydrogen-bonds, and by defining the over-all

electrostatic environment in the protein. Electrostatics play a major role in defining the mechanisms of protein-protein complex formation, molecular recognitions, thermal stabilities, conformational adaptabilities and protein movement

**Q Domain in Protein and their function?**
A **protein domain** is a conserved part of given **protein** sequence and (tertiary) structure that can evolve, **function,** and exist independently of the rest of the **protein** chain. ... Many **proteinsconsist** of several structural **domains.**

**Q: Hsp60 importance of protein structure forces responsible for 3 d structure of protein why a helix disturb due 2 peresenceovseline what are ketogenic amino acid?**

**Q: Write the name of Essential amino acids?**
here are 10 essential amino acids: arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine.

**Q: What are propertise of proteins?**
Proteins are compounds found in all living cells, in animals and plants. They play a variety of important roles and are essential to maintain the structure and function of all life forms. The word 'protein' is derived from the Greek word protos, meaning "primary" or "first". Proteins are vital for the growth and repair, and their functions are endless. Each and every property that characterizes a living organism is affected by proteins, whether it is a bacteria or a human body hydrolysis hydrolysis Proteins )Peptides ) Amino acids.

**Q: discuss the steps of protien folding?**
There are four **stages of protein folding,** primary, secondary, tertiary and quarternary. The secondary structure is the **protein** beginning to **fold** up. It can have two types of structure: the alpha helix, a coil shape held by hydrogen bonds in the same direction as the coil.

**Q: what are osazone?**
**Osazones** are a class of carbohydrate derivatives found in organic chemistry formed when sugars are reacted with excess of phenylhydrazine. The famous German chemist Emil Fischer developed and used the reaction to identify sugars whose stereochemistry differed by only one chiral carbon

**Q: What** are **monosaccharides equation reaction?**

**Q: What are allosteric form of hemoglobin ?**
Allostery in **haemoglobin. ,aemoglobin** is an **allosteric** protein. ... In fact the binding of oxygen to **onehaemoglobin** subunit induces conformational changes (discussed before) that are relayed to the other subunits, making them more able to bind oxygen by raising their affinity for this molecule.