1. If the basic formula of an α-amino acid is $R-CH(NH_2)-COOH$, where R is the side chain, what is the primary point of distinction between any two proteins?

   ✗ **A.** Number of amino groups

   ✗ **B.** Number of carboxyl groups

   ✓ **C.** The side chain R

   ✗ **D.** Relative positions of amino, carboxyl groups and R

   α-amino acids are the constituents of proteins. Different proteins are formed by polymerisation of different α-amino acids, which are formed due to the difference in the side chain substituted group R, which may be as simple as hydrogen or as complex as imidazole.

2. Assertion:

   All naturally occuring $\alpha-$ amino acids are optically active.

   Reason:

   Most naturally occurring amino acids have D - configuration.

   ✗ **A.** Both assertion and reason are correct and reason is the correct explanation for assertion.

   ✗ **B.** Both assertion and reason are correct but reason is not the correct explanation for assertion.

   ✗ **C.** Assertion is correct but reason is incorrect.

   ✓ **D.** Both assertion and reason are incorrect.

   Glycine, the first member of α amino acids, is optically inactive.
   Most naturally occuring amino acids have L-configuration.
   Hence option (d) is correct.

3. In Fibrous proteins, polypeptide chains are held together by:

- ✗ **A.** hydrogen bonds
- ✗ **B.** disulphide bonds
- ✓ **C.** both (a) and (b)
- ✗ **D.** none of these

Fibrous Protein: When polypeptide chain runs parallel to each other and has a fibre like structure. for example: Keratin, Myosin
In fibrous protein, chains are held together by hydrogen & disulphide bond. These are insoluble in water.

4. Assertion

Globular proteins are highly branched proteins usually soluble in water.

Reason

Insulin and Albumin are the common fibrous proteins.

- ✗ **A.** Both Assertion and Reason are correct and Reason is the correct explanation for Assertion
- ✗ **B.** Both Assertion aand Reason are correct but Reason is not the correct explanation for Assertion
- ✓ **C.** Assertion is correct but Reason is incorrect
- ✗ **D.** Both Assertion and Reason are incorrect

Globular proteins are highly branched proteins usually soluble in water. Insulin and albumin comes under globular proteins.
Fibrous Protein: When polypeptide chain runs parallel to each other and has a fibre like structure. for example: Keratin, Myosin. Thus Assertion is correct but Reason is incorrect

5. Which of the following bonds in not found in fibrous proteins?

- ✔ **A.** Phosphodiester
- ✘ **B.** Peptide
- ✘ **C.** Hydrogen bonds
- ✘ **D.** Disulphide

Fibrous proteins are linear polypeptide chains that lie parallel to each other. Peptide binds are prevalent in the individual chains, whereas the threads are held together by hydrogen and disulphide bonds, to form a fibre-like structure.