

Short Questions and Answers

Q1. Define biochemistry.

Answer

Bio chemistry is the branch of science concerned with studying the various molecules that occur in living cells and organisms with their chemical reactions.

Q2. What are carbohydrates? Give examples.

Answer

Carbohydrates the substances which contains carbon, oxygen and hydrogen and have general formula $C_n (H_2O)_n$.

Q3. What are monosaccharides? Give examples.

Answer

Those carbohydrates which do not hydrolyze to simpler units are called monosaccharides.

Examples: Glucose, Ribose etc..

Q4. What are disaccharides? Give example.

Answer

Disaccharides are the carbohydrates which contain two monosaccharides.

Examples: Lactose, Sucrose.

Q5. What are polysaccharides? Give examples.

Answer

The carbohydrates producing large number of monosaccharides on hydrolysis are called poly saccharides.

Examples: Starch, Glycogen etc..

Q6. What is glycemic index?

Answer

The glycemic index ranks foods on how they affect blood sugar level by measuring how much the blood sugar increases after one eats.

Q7. What are storage polysaccharides?

Answer

Glycogen and starch are called storage polysaccharides. Glycogen store in human and animals' liver and muscles while starch stores in potatoes, rice and wheat and it is plant polysaccharide.

Q8. What is chitin?

Answer

Chitin is a polysaccharide and is main component of fungi; cell walls the exoskeleton of arthropods such as crabs, lobsters, and set.

Q9. 1— gram of carbohydrates, proteins and fats contains how much calories?

Answer

1 — gram of carbohydrates = 4 Kcal

1 — gram of Proteins = 4 Kcal

1 — gram of fats = 4 Kcal

Q 10. How obesity is caused? And how it could be reduced?

Answer

Obesity is caused due to consuming high-fat diet and overeating and low carbohydrate diet.

Obesity can be reduced to take diet high in carbohydrates.

Q11. How diabetes is caused?

Answer

There are two types of diabetes:

Type I: Occur when this disease is present in the gene while the type II occurs due to obesity and physical inactivity.

Q12. What are proteins? Give examples.

Answer

The molecules which yield amino acids on complete hydrolysis are called proteins. Examples: Albumin, Peptones etc..

Q13. What are Albumins?**Answer**

Albumins are simple proteins which are present in blood, milk, egg white, lentils, wheat etc..

Q14. What are simple proteins? Give examples.**Answer**

Those proteins which give one amino acid only upon hydrolysis are called simple proteins.

Examples: Albumins, Globulins, etc..

Q15. What are conjugated proteins? Give examples.**Answer**

Those proteins which give an amino acid and non-protein group upon hydrolysis are called conjugated proteins.

Examples: Nucleoproteins, Mucoprotein etc.

Q16. What are derived proteins? Give examples.**Answer**

Those proteins which are derived from simple and conjugated proteins are called

derived proteins.

Examples: Proteins, Protoses.

Q17. What are enzymes? Give examples.

Answer

Enzymes are biocatalysts which alter the speed of metabolic activities in the living bodies.

Examples: Hydrolysis, Amylase etc..

Q18. What is metabolism?

Answer

Metabolism is a set of biochemical reactions that occur in living organisms in order to maintain life.

Q19. What is catabolism?

Answer

Those biochemical reactions in which larger molecules are broken down into smaller ones are called catabolism.

Q20. What is anabolism?

Answer

Those biochemical reactions in which larger molecules are synthesized are called anabolism.

Q21. Who present lock and key model of an enzyme action and induced fit model?

Answer

In American biologist Daniel Koshland proposed induced fit model of enzyme action while Emil Fischer proposed lock and key model.

Q22. Name the factors affecting enzyme activity.**Answer**

- 1) Temperature
- 2) Substrate concentration
- 3) PH

Q23. What are inhibitors? Give example.**Answer**

Substances that tend to decrease the activity of enzymes are called inhibitors. Example: Cyanide, antibodies etc..

Q24. What are irreversible inhibitors? Give example.**Answer**

These are the inhibitors which occupy the active sites by forming covalent bond or they physically block the active site.

Example: Succinic dehydrogenase + Malonic acid No reaction.

Q25. What are reversible inhibitors? Give example.**Answer**

These are the inhibitors which form weak linkages with enzymes.

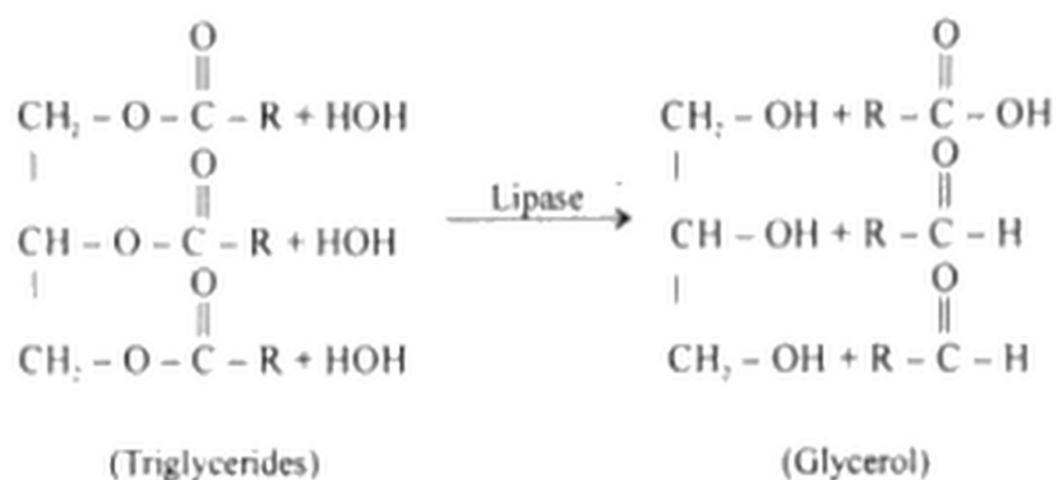
Example: Succinic dehydrogenase + Succinic dehydrogenase.

Q26. What are fats and oils? Give examples.

Answer

Fats and oils are the esters of glycerol with fatty acids.

Example: Triglycerides.



Q27. What is saponification?

Answer

Saponification is the hydrolysis of triglycerides by alkalis. Glycerol is produced along with sodium salt of fatty acids. These Na are called soap.

Q28. What are saturated fats? Give example.

Answer

Saturated fats are the fats which have all single bonds between the carbons in their fatty acid tail and have maximum number of hydrogens.

Examples: obtained from animal sources such as glycogen etc..

Q29. What are unsaturated fats? Give example.

Answer

Unsaturated fats are fats which have double bonds between the carbon and have minimum hydrogen atoms attached to it.

Example: These are obtained from plant sources such as oils obtained from coconut, pea etc..

Q30. What are lipids? Give example.

Answer

Naturally occurring organic compounds of animals and plants origin, which are soluble in organic solvents are called lipids.

Example: fats, oils, waxes, steroids etc..

Q31. What are compound lipids? Give example.

Answer

Triglycerides with radicals in addition to fatty acids and alcohol. Example: Phospholipids.

Q32. What are derived lipids? Give example.

Answer

These are hydrolytic product of compound lipids. Example: Fatty acids.

Q33. What are essential lipids? Give example.

Answer

Those lipids which the human body cannot synthesize are called essential lipids.

Example: Omega — 3 and Omega — 6 fats.

Q34. What are non-essential lipids? Give example.**Answer**

Those lipids which the human body can synthesize are called non-essential lipids.

Example: oil, saturated fats etc..

Q35. What are nucleic acids? Who discover them?**Answer**

DNA and RNA are commonly called nucleic acids. Frederik Miescher discover them in the nuclei of puss cells in 1866.

Q36. Name the structural component of DNA and RNA.**Answer**

i) Sugar

ii) Nitrogenous bases

iii) Phosphate

Q37. What are major minerals? Give example.**Answer**

Those minerals which are required in large quantities are called major minerals.
Example: sodium, calcium, chloride, phosphorus etc..

Q38. What are minor or Trace minerals? Give example.

Answer

Those minerals which are required in small quantities are called minor minerals.
Examples: Iron, zinc, copper, fluorine etc..

Q39. What is insulin?

Answer

Insulin is a protein hormone whose deficiency leads to diabetes mellitus. It is a 51 amino acid peptide hormone.

Q40. What is diabetes mellitus?

Answer

Diabetes mellitus is a state of hyper glycaemia. It has two types. Type 1 is caused due to autoimmune-mediated destruction of insulin while type 2 is a multifactor syndrome with influence of genetic susceptibility.

