

UNIT-XIV BIOMOLECULES

SUB TOPIC – I: CARBOHYDRATES

1. **Glucose on treatment with Tollen's reagent produces**
1. Glucaric acid 2. Gluconic acid 3. Saccharic acid 4. None of these
2. **During acetylation of glucose it needs x moles of acetic anhydride. The value of 'x' would be**
1. 3 2. 5 3. 6 4. 1
3. **Equilibrium mixture of glucose consists**
1. 50% and 50% 2. 36% and 64% 3. 64% and 36% 4. 20% and 85%
4. **Five membered ring structure of glucose is known as**
1. Haworth structure 2. Furanose 3. Pyranose 4. Baeyer's structure
5. **The reversible isomerisation of glucose is known as**
1. Hoffmann rearrangement 2. Curtius rearrangement
3. deBruyn -van Ekestein rearrangement 4. Amadri rearrangement
6. **Glucose reduces Fehling solution to**
1. Copper 2. Black cupric oxide
3. Reddish Brown cuprous oxide 4. Mixture of copper and cupric oxide
7. **For the reduction of glucose to n-hexane, the reagent used is**
1. HBr 2. HCl 3. HF 4. HI
8. **A pyranose ring consists of a skeleton of**
1. 5 carbon atoms and one oxygen atom 2. 6 carbon atoms
3. 6 carbon atoms and one oxygen atom 4. 4 Carbon atoms and one oxygen atom
9. **Starch is a polymer of**
1. α -D-glucose 2. β -D-glucose
3. α -D-glucose and β -D-glucose 4. α -D-fructose
10. **Glucose reacts with in presence of dry HCl to give**
1. -methyl glucoside 2. -methyl glucoside
3. Both of the above 4. None of these

11. Starch is composed of two polysaccharides namely

1. Amylopectin and glycogen
2. Amylose and glycogen
3. Amylose and amylopectin
4. None of these

12. Match the following

List – I

a) Epimers

b) Anomers

c) Enantiomers

d) Functional Isomers

List - II

i) D-Glucose and L- Glucose

ii) D-Glucose and D- Mannose

iii) -D-Glucose and-D-Glucose

iv) Glucose and Fructose

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

13. List (Sugar)

List – II (Type)

a) Glucose

i) Keto hexose

b) Fructose

ii) Aldohexose

c) Arabinose

iii) Aldotetrose

d) Erythrose

iv) Aldopentose.

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

14. D-glucose and L-glucose differs in

1. Configuration at the highest number chiral carbon
2. Configuration at first chiral carbon
3. Configuration at each chiral carbon
4. Configuration at the second chiral carbon

15. In which of following cases both the compounds are examples of reducing sugars?

1. Glucose and sucrose
2. Fructose and Maltose
3. Fructose and Sucrose
4. Sucrose and Lactose

16. Glucose molecule reacts with 'x' number of molecules of phenyl hydrazine to yield osazone. The value of 'x' is

1. Four
2. One
3. Two
4. Three

17. Which one of the following statements about starch is correct?

1. It occurs in the cell walls of plants
2. It is a disaccharide
3. It gives a dark blue colour with iodine solution
4. It gives a red orange precipitate on boiling with Fehling's solution

18. The correct order of sweetness of the following compounds is

- I. Sucrose: II. Fructose III. Glucose IV. Maltose
 1) I > II > III > IV 2) II > I > III > IV 3) II > I > IV > III 4) IV > I > II > III

19. In cellulose D-Glucose units are joined by

- 1) α - 1, 4 glycosidic linkage 2) Peptide linkage
 3) β -1, 4 Glycosidic linkage 4) β -1, 6 Glycosidic linkage

20. Consider the statements about cellulose

- I. Cellulose is a colourless crystalline solid
 II. It is mainly branched chain poly saccharide
 III. Its individual strands align with each other through number of Hydrogen bonds
 IV. It is rigid and acts as cell wall material

The incorrect statements is/are

- 1) only I 2) only II 3) I and II 4) I, II and IV

KEY

- 1) 2 2) 2 3) 2 4) 2 5) 3 6) 3 7) 4 8) 1 9) 1 10) 3
 2)
 11) 3 12) 1 13) 4 14) 3 15) 2 16) 4 17) 3 18) 2 19) 3 20) 3

SUB TOPIC - II. AMINOACIDS

1. Which of the following molecules is capable of forming zwitter ion

- 1) NH_2CH_2COOH 2) CH_3COOH 3) $CH_3CH_2NH_2$ 4) CCl_3NO_2

2. The structure of amino acid at pH 6 is

- 1) $H_3N^+-CH_2COO^-$ 2) H_2N-CH_2COOH 3) $H_3N^+-CH_2COOH$ 4) $H_3N^+-CH_2COOH^-$

3. The basic amino acids are

- 1) Lysine, arginine 2) Alanine, glutamic acid
 3) Proline, valine 4) Alanine, cysteine

4. The acidic amino acid is .
- 1) Aspartic acid 2) Aycine 3) Serine 4) Tyrosine
5. Proteins are polymers of amino acids. Which of the following is not a protein?
- 1) Wool 2) Nails 3) Hair 4) DNA
6. The protein that transports oxygen in the blood stream is .
- 1) Haemoglobin 2) Insulin 3) Collagen 4) Albumin
7. Amino acids usually exist in the form of Zwitter ions. This means that they consist of
- 1) The basic NH_2 group and acidic COOH group
- 2) The basic group and the acidic COO^- group
- 3) Basic COO^- group and acidic NH_3^+ group
- 4) No acidic or basic group as such
8. The pH value of a solution in which a polar amino acid does not migrate under the influence of electric field is called.
- 1) Isoelectronic point 2) Iso-electric point
- 3) Neutralisation point 4) None
9. Which one of the following statements about proteins is wrong
- 1) Protein occur in all living cells
- 2) Proteins generally contain nitrogen, carbon and hydrogen
- 3) Hydrolysis of proteins in acidic aqueous solution results in the formation of amino acids
- 4) Their solubilities reach maximum value at the isoelectric points
10. Keratin, a structural protein is present in
- 1) Hair 2) Skin 3) Wool 4) All the above
11. Assertion: α -amino acids are the building blocks of proteins.
- Reason: Natural amino acids are mostly -amino acids.
- 1) Both A and R are true and R is the correct explanation of A
- 2) Both A and R are true but R is not correct explanation of A.
- 3) A is true but R is false
- 4) A is false btu R is true

12. Assertion: All natural -amino acids are not constituents of proteins.

Reason: Proline and hydroxyproline are -imino acids, not - amino acids

- 1) Both A and R are true and R is the correct explanation of A
- 2) Both A and R are true but R is not correct explanation of A.
- 3) A is true but R is false
- 4) A is false but R is true

13. Name of Protein Prosthetic Group

- | | |
|--------------------------|---------------------------|
| 1. Nucleo Protein | A) Sugar |
| 2. Glyco Protein | B) Nucleic acid |
| 3. Lipo Protein | C) Phosphoric Acid |
| 4. Phosphoprotein | D) Lecithin |

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

14. Which of the following statements is not correct?

- 1) Proteins are poly amides formed from amino acids
- 2) Except glycine, all other amino acids show optical activity
- 3) Natural proteins are made up of L – isomers of amino acids
- 4) In amino acids -NH_2 and -COOH groups are attached to different carbon atoms

15. Which of the following statements is not correct?

- 1) In nature about 20 amino acids occur proteins
- 2) The human body can synthesis all 20 amino acids occurring in proteins
- 3) The simplest amino acid is glycine 4) They are 10 essential amino acids

16. Which of the following statements is not correct?

- 1) The tertiary structure of proteins is three dimensional
- 2) In globular proteins, nearly all the hydrophobic groups are hidden inside and the polar groups are present on the surface resulting into a spheroidal shape
- 3) Only hydrogen bonds are involved in the tertiary structure of proteins
- 4) Globular proteins are insoluble in water

17. Which of the following statements is not correct?

- 1) Insulin maintains sugar level in the blood of a human body
- 2) Ovalbumin is a simple food reserve in egg-white
- 3) Blood proteins thrombin and fibrinogen are involved in blood clotting
- 4) Denaturation makes the proteins more active

18. Which of the following statements is not correct?

- 1) A peptide bond is – CO-NH-
- 2) Each polypeptide has one C-terminal and the other N-terminal
- 3) The amino acid sequence of a protein determines the function of the protein
- 4) The union of two amino acids produces two peptide linkages.

19. Which of the following statements is not correct?

- 1) All enzymes found in cells are invariably proteins which catalyse biological reactions
- 2) Enzymes act efficiently at a moderate temperature and pH
- 3) Coenzymes increase the activities of enzymes
- 4) Enzymes are not specific in their action on substrates.

KEY

1) 1 2) 3 3) 1 4) 1 5) 4 6) 1 7) 3 8) 2 9) 4 10) 4

11) 2 12) 2 13) 2 14) 4 15) 2 16) 3 17) 4 18) 4 19) 1

SUB TOPIC - III. NUCLEIC ACIDS

1. AT / GC ratio in human being is

1. 0.93: 1 2. 1: 0.93 3. 1.52: 1 4. 0.93: 1

2. GC / AT ratio in E. coli is

1. 0.93: 1 2. 1: 0.93 3. 1: 1.52 4. 1.52: 1

3. The sequence of bases in the nucleic acid strand explained by

1. 1° structure 2. 2° structure 3. Both 1° and 2° 4. None

4. The length of double helix at 360° rotation is

1. 2nm 2. 3nm 3. 4nm 4. 3.4nm

5. The separated place of DNA strand calls

1. Translation fork 2. Transcription fork
3. Reverse transcription fork 4. Replication fork .

6. The replication of DNA can catalyzed by

1. Protein 2. Enzyme 3. Bacteria 4. Metal atom

7. The sequence of bases on m – RNA molecule synthesized on the GCATA strand of DNA is

1. CGUAU 2. CGTAT 3. TACGU 4. ATCGC

8. In the sequence of changes/processes,

$X \xrightarrow{\text{replication}} Y \xrightarrow{\text{transcription}} Z \xrightarrow{\text{translation}}$ Proteins X, Y and Z are

- 1) DNA, DNA and RNA 2) RNA, RNA and DNA
3) DNA, RNA and RNA 4) DNA, RNA and DNA

9. The carrier of an amino acid for protein synthesis is .

1. t RNA 2. m RNA 3. r RNA 4. DNA

10. No. of hydrogen bonds present between A and T

1. 2 2. 1 3. 3 4. 0

11. Which of the following varies from species to species?

1. A = T 2. C = G 3. A + G = C + T 4. AT / GC Ratio

12. The sequence of bases on m- RNA molecule synthesized on the GCATATGGA strand of DNA is

1. CGUAUACCU 2. CGTATACCT 3. TACGCCGTTC 4. ATCGCGTTC

13. How many base pairs are present in each full turn of the DNA double helix?

- 1) 4 2) 6 3) 8 4) 10

14. In the nucleotide namely adenosine - 5' - triphosphate, the sequence of linkages among N (base) C (sugar) and P (phosphate) is

- 1) C-P-N-P-P 2) N-P-C-P-P-P 3) P-C-N-P-P 4) P-P-P-C-N

15. The ratio of the number of ketonic groups in cytosine, thymine and uracil is

- 1) 1 : 2 : 2 2) 2 : 1 : 2 3) 2 : 2 : 1 4) 1 : 1 : 1

16. Assertion-A: Adenine pairs with thymine but not with cytosine

Reason-R: With cytosine no hydrogen bonds are possible for adenine

- 1) A & R true, R is correct explanation of A
2) A & R true, R is not correct explanation of A
3) A is true, R is false 4) A & R is false

17. In nucleic acids, the sequence is

1. Phosphate-Base-Sugar 2. Sugar-Base-Phosphate
3. Sugar-Base-Phosphate 4. Base-Phosphate-Sugar

18. In DNA the complementary bases are

1. Adenine and thymine; guanine and cytosine
2. Uracil and adenine; cytosine and guanine
3. Adenine and guanine; thymine and cytosine
4. Adenine and thymine; guanine and uracil

19. Which of the following sets of bases is present both in DNA and RNA?

- 1) Adenine, uracil, thymine 2) Adenine, guanine, cytosine
3) Adenine, guanine, uracil 4) Adenine, guanine, thymine

20. In AMP the sequence is

1. Sugar - base - phosphate 2. Sugar -phosphate -base
3. Phosphate - sugar - base 4. Phosphate - base - sugar

21. Which one of the following is not present in RNA?

1. Uracil 2. Thymine 3. Ribose 4. Phosphate

22. Major function of DNA is

1. To control metabolism
2. To catalyze biochemical reactions
3. To control synthesis of proteins
4. To transfer genetic information from one generation to the next.

23. In the nucleic acids the phosphate ions bonded with sugar at

1. 5', 3' location
2. 5', 2' location
3. 3', 1' location
4. 5', 1' location

24. m RNA codes for the amino acids serine is

1. AMP
2. ADP
3. UCA
4. d ATP

25. The total no. of codons and amino acids are

1. 64, 20
2. 20, 64
3. 23, 46
4. 46, 23

26. In nuclei acids , the sequence is

1. Phosphate – base – sugar
2. Sugar – phosphate – base
3. Phosphate-sugar – base
4. Base – phosphate – sugar

27. Which of the following bases is not common to DNA and RNA?

1. Adenine
2. Guanine
3. Thymine
4. Cytosine

28. The important features of genetic code are

1. It is universal
 2. It is commaless
 3. It is degenerate
 4. The third base in the condon is not always specific Find the correct one
1. a only
 2. b , c only
 3. b , c ,d only
 4. All

29. Assertion (A) : Thymine pairs with adenine whereas cytosine pairs with Guanine in DNA molecule .

Reason (R) :The hydrogen bonding between bases of two strands is highly specific .

1. Both A and R are true and R is the correct explanation of A.
2. Both A and R are true but R is not a correct explanation of A
3. A is true but R is false
4. A is false but R is true

30. The stability of double helix is due to

1. Presence of hydrogen bonds
2. Presence of hydrophobic interaction
3. Presence of hydrophilic interaction
4. vander waal force

Find correct statement

1. 1 only
2. 1, 2 only
3. 1, 2,3 only
4. 1, 2,3 and 4

31. Match the following:

Set - A

Set - B

- | | |
|------------------|----------------------------------|
| A) Replication | 1) Formation of RNA from DNA |
| B) Transcription | 2) Synthesis of copy of DNA |
| C) Translation | 3) Single strand of DNA |
| D) Template | 4) Synthesis of proteins by RNA. |

Now, correct match is

- | | A | B | C | D |
|----|---|---|---|---|
| 1) | 4 | 3 | 2 | 1 |
| 2) | 1 | 2 | 4 | 3 |
| 3) | 2 | 1 | 4 | 3 |
| 4) | 2 | 1 | 3 | 4 |

32. The sequence of DNA base is GCACCTAT then the sequence of mRNA is

1. CGUGGAUA
2. CGTGGATA
3. CGUGGATA
4. CGTGGTAT

33. Leucine codes are

1. CUU
2. CUC
3. CAG
4. UCA

Find the correct one

1. 1 only
2. 1 and 2
3. 1,2 and 3
4. 2,3and 4

KEY

1) 3 2) 2 3) 1 4) 4 5) 4 6) 2 7) 1 8) 1 9) 1 10) 2

11) 4 12) 1 13) 4 14) 4 15) 1 16) 1 17) 3 18) 1 19) 3 20) 2

21) 2 22) 4 23) 1 24) 3 25) 1 26) 1 27) 3 28) 4 29) 1 30) 2

31) 3 32) 1 33) 2

SUB TOPIC - IV. LIPIDS

1. The glycerides in which saturated acid component predominate are ---- at room temperature and are called -----

1. Liquids, fats 2. Solids, fats 3. Solid, oils 4. Liquids, oils

2. Naturally occurring fatty acids has an ----- number of carbons.

1. Even 2. Odd 3. 1 4. 0

3. The major sources of energy in living cells are

1. Fatty acids 2. Enzymes 3. Hormones 4. Starch

4. Esters of long chain fatty acids with long chain monohydric alcohols are called as

1. Glycolipids 2. Terpenes 3. Phospholipids 4. Waxes

5. The range of carbons in the fatty acid which produce of Bee's wax is

1. C₁₆ - C₃₆ 2. C₁₄ - C₃₆ 3. C₈ - C₄₀ 4. C₂₄ - C₄₅

6. Which of the following are important in insulating the nerve impulses

1. Phospholipids 2. Glycolipids 3. Waxes 4. None of the above

7. The calorific values of lipids and carbohydrates respectively are

- 1) 15.3 kcals and 9.3 kcals 2) 4.5 kcals and 9.3 kcals
3) 9.3 kcals and 4.5 kcals 4) 9.3 kcals and 13.3 kcals

8. Lipids are stored in

- A) Liver B) Muscles
C) Adipose tissues D) Bone marrow

The correct combination is

- 1) Only C 2) Only D 3) C and D only 4) All

9. The range of carbons in the alcohol which produce Bee'swax is

1. $C_{10} - C_{24}$ 2. $C_{16} - C_{36}$ 3. $C_{12} - C_{36}$ 4. $C_{20} - C_{30}$

10. Which of the following is a phospholipid

1. Lecithin 2. Cephalin 3. Both 1 & 2 4. None

11. Spermaceti and Bee's wax belong to esters of

- 1) Same alcohol but different fatty acids
2) Same fatty acid but different alcohols
3) Different alcohols and fatty acids
4) Same alcohol and same fatty acid

12. Which of the following cannot be further hydrogenated

- 1) Tripalmitin and Triolein 2) Triolein and Tristearin
3) Tristearin and Trilinolein 4) Tristearin and Tripalmitin

13. Calorific value is in the order

1. Fats > carbohydrates > proteins 2. carbohydrates > fats > proteins
3. Proteins > carbohydrates > Fats 4. Fats > proteins > carbohydrates

14. The most concentrated source of energy in the human body is.

1. Fats 2. Sugars 3. Proteins 4. Nucleic acids

15. Which of the following is a monoglyceride?

1. 1 - palmitin 2. 2- palmitin 3. 1,3- palmitin 4. Both 1 & 2

16. One mole 'tri linolein' (X) on hydrogenation gave Y where 9 moles of hydrogen are found to be consumed. Now, number of 'pi' bonds in X is

- 1) 3/molecule 2) 3/each chain of fatty acid
3) 6/molecule 4) 9/each chain of fatty acid

17. Assertion (A): Lecithin is a phospholipid.

Reason (R): Lecithin is made up of fatty acid, glycerol (or) other alcohol, nitrogenous base and phosphoric acid.

1. A and R are true and R is the correct explanation of A.
2. A and R are true and R is the not correct explanation of A.
3. A is true and R is false
4. A is false and R is true

18. Assertion (A): Spermaceti is terpene.

Reason (R): Spermaceti is palmitic ester of cetyl alcohol.

1. A and R are true and R is the correct explanation of A.
2. A and R are true and R is the not correct explanation of A.
3. A is true and R is false.
4. A is false and R is true.

19. Ergo sterol and cholesterol are.... respectively

- 1) Derived fat and derived fat
- 2) Compound fat and derived fat
- 3) Derived fat and compound fat
- 4) Simple lipid and hetero lipid

20. An unsaturated fatty acid on Ozonolysis yields

- 1) $CH_3(CH_2)_7-CH=CH-(CH_2)_7-COOH$
- 2) $CH_3-(CH_2)_7-CH=CH-(CH_2)_5-COOH$
- 3) $CH_3-(CH_2)_4-CH=CH-(CH_2)_{10}-COOH$
- 4) $H_3C(CH_2)_5-CH=CH(CH_2)_9-COOH$

KEY

1) 2 2) 1 3) 1 4) 4 5) 2 6) 1 7) 3 8) 3 9) 2 10) 3

11) 2 12) 4 13) 1 14) 1 15) 4 16) 2 17) 1 18) 4 19) 1 20) 1

SUB TOPIC - V. HORMONES

1. Which of the following is a steroid?

- 1) Insulin 2) Vitamins 3) Cytokinins 4) Estrogen

2. Androgens are

- 1) Female sex hormone 2) Non steroid
3) Plant hormone 4) Male sex hormone

3. Phosphorylation of glucose is increased by

- 1) Auxins 2) Insulin 3) Ethylene 4) Traumatic acid

4. In insulin molecule S-S linkage is in between

- 1) Csteine-Glycine 2) Cystein-Cystein
3) Cysteine-Valanine 4) Proline-Cystein

5. Which of the following is not an example of phytohormones?

- 1) Cytokinins 2) Ethylene 3) Auxins 4) Insulin

6. Estradiol is responsible for the development of

- 1) Primary male characters 2) Secondary female characters
3) Primary female characters 4) Secondary male characters

7. Deficiency of insulin in human beings cause

- 1) Blood coagulation 2) Beri Beri
3) Diabetes 4) Dermatitis

8. Insulin molecule contains S-S linkages one S-S linkage is with in the chain, which is numbered as

- 1) 19-20 2) 7 - 7 3) 6 - 11 4) Any one of there

9. For Artificial ripening of fruit which of the following is used?

- 1) Testosterone 2) Insulin 3) Ethylene 4) Estrogen

10. Which of the following Hormones helps in the conversion of glucose into Glycogen in the body?

- 1) Insulin 2) Cortisone 3) Thyroxin 4) Oxytocin

11. The disease diabetes mellitus is caused by the deficiency of

- | | |
|-------------------------------|------------|
| 1) Iodine | 2) Insulin |
| 3) Phenyl alanine Hydroxylase | 4) Lysine |

12. The Hormone used as an oral contraceptive is

- | | | | |
|----------------|--------------|-----------------|-----------------|
| 1) Aldosterone | 2) Cortisone | 3) Progesterone | 4) Testosterone |
|----------------|--------------|-----------------|-----------------|

13. The Hormone insulin is a secretion of the organ

- | | | | |
|----------|-----------|-------------------|-------------|
| 1) Ovary | 2) Testes | 3) Adrenal cortex | 4) Pancreas |
|----------|-----------|-------------------|-------------|

14. Increased blood pressure may be caused by the excess secretion of

- | | | | |
|-------------|-----------------|--------------|---------------|
| 1) Thyroxin | 2) Testosterone | 3) Estradiol | 4) Adrenaline |
|-------------|-----------------|--------------|---------------|

15. The pace setter of the endocrine system in the Human body is the endocrine gland called

- | | | | |
|------------|------------|---------------|-------------|
| 1) Thyroid | 2) Insulin | 3) Adrenaline | 4) Secretin |
|------------|------------|---------------|-------------|

16. The Muscular physique of a male is due to the influence of the Hormone called

- | | | | |
|-----------------|--------------|-----------------|------------|
| 1) Testosterone | 2) Estradiol | 3) Progesterone | 4) Estrone |
|-----------------|--------------|-----------------|------------|

17. Body builders illegally and unethically use synthetic analog of Hormone called

- | | | | |
|------------|-----------------|-----------------|------------|
| 1) Estrone | 2) Progesterone | 3) Testosterone | 4) Insulin |
|------------|-----------------|-----------------|------------|

18. Emergency Hormone in Animals is the

- | | | | |
|---------------|------------|-------------|-------------|
| 1) Adrenaline | 2) Insulin | 3) Oestrone | 4) Secretin |
|---------------|------------|-------------|-------------|

19. The Hormone that promotes Anabolism and inhibits catabolism is the

- | | |
|-----------------------|---------------|
| 1) Tri iodo Thyroxine | 2) Auxins |
| 3) Insulin | 4) Morphactin |

20. Assertion: Abscic Acid "induces Prototropism"

Reason: Abscic Acid is a Sesqui Terpene

- | |
|--|
| 1) Both A and R are true and R is correct explanation of A. |
| 2) Both A and R are true and R is not the correct explanation of A |
| 3) A is true but R is false |
| 4) A is false but R is true |

21. Match the following

- | | |
|-----------------------------|--------------------------------------|
| A. Homeostasis | 1) Affect the Plasma membrane |
| B. Emergency hormone | 2) Structure of insulin |
| C. Metabolism | 3) Adrenaline |
| D. Peptide hormones | 4) Thyroxine |
| constant internal | 5) Maintenance of environment |

A	B	C	D
1. 1	5	3	4
2. 2	4	3	1
3. 3	5	2	4
4. 5	3	4	1

22. In Insulin molecule there are two chains A and B. "A" contains "X" - amino acids & "B" contains "Y" amino acids. The values of X and Y are

- 1) 21, 31 2) 28, 26 3) 21, 30 4) 32, 34

23. One insulin molecule contains

- 1) Three peptide chains, two persulphide linkages
 2) Two peptide chains, two persulphide linkages
 3) Two peptide chains three persulphide bonds
 4) Three peptide chains three persulphide bonds.

24. Total number of carbon atoms present in steroid nucleus.

- 1) 24 2) 17 3) 10 4) 20

25. Steroid hormones are produced by the

- | | | |
|-------------------|----------------|----------------------|
| a) Adrenal cortex | b) Pancreas | c) Thyroid |
| d) Testis | e) Pituitary | |
| 1) a and d | 2) a, b, and c | 3) c, d 4) d, e |

KEY

1) 4 2) 4 3) 2 4) 2 5) 4 6) 2 7) 3 8) 4 9) 3 10) 1

11) 2 12) 3 13) 4 14) 4 15) 1 16) 3 17) 3 18) 1 19) 3 20) 2

21) 4 22) 3 23) 3 24) 2 25) 1

SUB TOPIC - VI. VITAMINS

1. Disease scurvy is caused by the deficiency of vitamin

1. A 2. B₆ 3. C 4. D

2. Which of the following vitamins is oil soluble?

1. A 2. B₆ 3. B₁₂ 4. B₁

3. Which of the following vitamins is water soluble?

1. K 2. E 3. D 4. B₁

4. Deficiency of vitamin A leads to a disease known as

1. Scurvy 2. Night blindness 3. Beriberi 4. Rickets

5. Vitamin D is also known as

1. Growth vitamin 2. Sunshine vitamin
3. Reproductive vitamin 4. Ascorbic acid

6. Deficiency of vitamin A causes

1. Night blindness 2. Loss of fertility
3. Scurvy 4. Impaired clotting

7. The term vitamin was introduced by

1. Dr. Funk 2. Dr Edwards 3) Dr.Strepto 4. Dr Indira Hinduja

8. Which one of the following is synthetized in our body by sun rays?

1. Vitamin D 2. Vitamin B 3. Vitamin K 4. Vitamin A

9. Which name is associated with the chemical substances produced in endocrine ductless glands?

1. Vitamins 2. Antigens 3. Bile acids 4. Hormones

10. Which of the following is true about vitamins?

1. Vitamins in the human body are needed in large amounts
2. Vitamins are secreted by ductless glands
3. Vitamins are synthesized by an organism
4. Vitamins A, D, E and K are fat soluble whereas vitamins of the B group and vitamin C are water soluble

11. Which of the following statements is not correct?

1. Vitamin - A is also known as retinol
2. In carrots a red colored compound (carotene) in the body breaks into vitamin - C
3. Vitamin - A is essential for growth and vision
4. Vitamin - A is a fat - soluble vitamin

12. The metal present in vitamin B₁₂ is

1. Iron 2. Cobalt 3. Copper 4. Manganese

13. Which of the following statements is not correct?

1. Vitamin D is fat - soluble vitamin
2. Vitamin D regulates the adsorption of calcium and phosphate from the intestine
3. Vitamin D is structurally related to steroids
4. There are three types of vitamins D - D₁, D₂ and D₃

14. Which of the following is not correct?

1. Vitamins are synthesized within the body
2. Hormones are synthesized within the body
3. Hormones are also known as chemical messengers
4. Hormones are highly potent and so are produced in small quantities

15. Osteomalacia in adults is due to deficiency of vitamin

- 1) A 2) D 3) E 4) K

16. Cyanocobalamine is rich in

- 1) Sewage sludge 2) Liver of pig
3) Egg 4) All

17. Which of the following is the incorrectly matched

- | | |
|----------------------------------|---|
| 1) Niacin – Nicotinamide | 2) Vitamin B ₃ - Dipeptide |
| 3) Vitamin K - Flavin derivative | 4) Vitamin B ₁₂ - Resembles Heme |

18. An example of water soluble vitamin is

- | | | | |
|--------------|--------------|--------------|--------------|
| 1. Vitamin D | 2. Vitamin E | 3. Vitamin A | 4. Vitamin C |
|--------------|--------------|--------------|--------------|

19. Two vitamins absorbed from intestine along with fats are

- | | | | |
|--------|---------|---------|---------|
| 1. A,D | 2. A, B | 3. A, C | 4. D, B |
|--------|---------|---------|---------|

20. Riboflavin is the chemical name of

- | | | | |
|------------|------------|------------|----------------------|
| 1) Vitamin | 2) Vitamin | 3) Vitamin | 4) Vitamin B complex |
|------------|------------|------------|----------------------|

21. Pernicious anemia is caused by deficiency of vitamin

- | | | | |
|-------------------|-------------------|-------------------|--------------------|
| 1) B ₁ | 2) B ₂ | 3) B ₆ | 4) B ₁₂ |
|-------------------|-------------------|-------------------|--------------------|

22. Prolonged deficiency of nicotinic acid [niacin] in human diet leads to

- | | | | |
|-------------|-------------|-----------|------------|
| 1) Bri-beri | 2) Pellagra | 3) Scurvy | 4) Anaemia |
|-------------|-------------|-----------|------------|

23. Degeneration of Lachrymal glands is due to the deficiency of

- | | | | |
|--------------|--------------|--------------|--------------|
| 1. Vitamin A | 2. Vitamin E | 3. Vitamin D | 4. Vitamin C |
|--------------|--------------|--------------|--------------|

24. The function of vitamin D is

- | | |
|---|--|
| 1. Calcium absorption in the intestine | 2. Normal development of bones and teeth |
| 3. Deposition of calcium and phosphate in bones | 4. All the above |

25. Nutritional muscular dystrophy is due to the deficiency of vitamin

- | | | | |
|------|------|------|------|
| 1. A | 2. D | 3. E | 4. K |
|------|------|------|------|

26. Which vitamins are present in much smaller amounts in cells

- | | | | |
|------|------|----------|------|
| 1) A | 2) D | 3) B & C | 4) K |
|------|------|----------|------|

27. The vitamin, which plays a role in transportation, of amino acids across the cell membrane is

- | | | | |
|-------------------|-------------------|-------------------|-------------------|
| 1) B ₁ | 2) B ₂ | 3) B ₃ | 4) B ₆ |
|-------------------|-------------------|-------------------|-------------------|

28. Which of the following Vitamins converts ATP to AMP and Bipyrophosphate?

- | | | | |
|-------------------|-------------------|--------------------|-------------------|
| 1. B ₁ | 2. B ₂ | 3. B ₁₂ | 4. B ₅ |
|-------------------|-------------------|--------------------|-------------------|

29. The deficiency of pyridoxine causes

- | | |
|--------------|----------------------------|
| 1. Pellagra | 2. Dermatitis, convulsions |
| 3. Beri Beri | 4. Sterility |

30. Deficiency of vitamin 'A' causes

- | | |
|--------------------|-------------------------------------|
| 1) Xerophthalmia | 2) Degeneration of Lacryinal glands |
| 3) Night blindness | 4) All |

31. Match the following

- | List - I | List - II |
|--------------|--------------------------|
| A. Vitamin A | 1. Calcifierol |
| B. Vitamin D | 2. Tocopherol derivative |
| C. Vitamin E | 3. Retinol |
| D. Vitamin K | 4. Anti hemorrhagic |
| | 5. Thiamin |

The correct match is

1. A - 3, B - 1, C - 2 D - 4
2. A - 3, B - 1, C - 2 D - 5
3. A - 3, B - 1, C - 4 D - 2
4. A - 1, B - 3, C - 2 D - 4

32. Match the following

- | List - I | List - II |
|-----------------------------|---------------------|
| A. Vitamin - B ₁ | 1. Riboflavin |
| B. Vitamin - B ₂ | 2. Pantothenic acid |
| C. Vitamin - B ₃ | 3. Niacin |
| D. Vitamin - B ₅ | 4. Thiamin |

The correct match is

1. A - 4, B - 1, C - 3 D - 2
2. A - 4, B - 1, C - 2 D - 3
3. A - 3, B - 4, C - 2 D - 1
4. A - 4, B - 3, C - 1 D - 2

33. Assertion: The deficiency of vitamin B₁₂ causes hyperglycemia

Reason: The function of vitamin B₁₂ is synthesis of lipids from carbohydrates

1. A and R are true and R is the correct explanation of A
2. A and R are true and R is the not correct explanation of A
3. A is true and R is false
4. A is false and R is true

34. Assertion (A): The deficiency of vitamin D causes sterility

Reason (R) The function of vitamin D is normal development of bones and teeth

1. A and R are true and R is the correct explanation of A
2. A and R are true and R is the not correct explanation of A
3. A is true and R is false
4. A is false and R is true

35. Which of the following is incorrect?

1. Vitamin B₃ is present in all food stuffs
2. Liver of OX contains vitamin B₁₂
3. Vitamin H present in milk
4. Citrus fruits mostly contain vitamin H

36. Match the following

- | | |
|-----------------------------------|---------------------------|
| A. Vitamin - B₇ | 1. Ascorbic acid |
| B Vitamin - B₉ | 2. Cyanocobalamine |
| C Vitamin - B₁₂ | 3. Folic acid |
| D Vitamin - C | 4. Biotin |

The correct match is

- | | |
|------------------------------|------------------------------|
| 1. A - 1, B - 2, C - 3 D - 4 | 2. A - 4, B - 2, C - 3 D - 1 |
| 3. A - 1, B - 3, C - 2 D - 4 | 4. A - 4, B - 3, C - 2 D - 1 |

37. Identify the correct statements.

- a. Deficiency of vitamin A causes xerophthalmia
- b. The function of vitamin C is maintenance of redox potentials of cells
- c. Vitamin B-12 contain ionone ring
- d. Folic acid (vitamin B₉) consists of corrin ring the correct statements are

- | | | | |
|-----------|----------|-------------|--------|
| 1. a only | 2. a & b | 3. a,b, & c | 4. All |
|-----------|----------|-------------|--------|

KEY

1) 3 2) 1 3) 4 4) 2 5) 2 6) 1 7) 2 8) 1 9) 4 10) 4

11) 2 12) 2 13) 4 14) 1 15) 2 16) 4 17) 3 18) 4 19) 4 20) 2

21) 4 22) 2 23) 1 24) 4 25) 3 26) 3 27) 4 28) 1 29) 2 30) 4

31) 1 32) 2 33) 2 34) 4 35) 4 36) 1 37) 4