

# CHEMISTRY

## BOOKS - DISHA CHEMISTRY (HINGLISH)

### BIOMOLECULES

#### Mcqs

1. Chemically amylose is a with 200-1000  $\alpha$ ,-D-(+)-glucose units held by \_\_\_ glycosidic linkage

A. long unbranched chain, C1- C6.

B. branched chain, C1 - C4.

C. long unbranched chain, C1- C4

D. branched chain, C1- C6.

**Answer: C**



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2. Which is wrongly matched?

A. Insulin - steroid hormone

B. Estrone - control the uterine cycle in women

C. Oxytocin - contraction of uterus

D. Pot. metabisulphite - food preservative

**Answer: A**



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**3. In nucleic acids, the sequence is**

A. phosphate - base - sugar

B. sugar- base-phosphate

C. base- sugar - phosphate

D. base- phosphate - sugar

**Answer: C**



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**4.** Read the following statements and choose the correct option?

(i) Starch is a polymer of  $\alpha$  - glucose.

(ii) Starch consists of amylose and

amylopectin.

(iii) Amylose is insoluble in water.

(iv) Amylopectin is soluble in water.

A. (i) (iii) and(iv)

B. (i),(ii) and(iii)

C. (i) and (ii)

D. (iii) and (iv)

**Answer: C**



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5. An acidic amino acid among the following is

A. glycine

B. valine

C. proline

D. histidine

**Answer: D**



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6. If one strand of DNA has the sequence ATGCTTGA, the sequence in the complimentary strand would be

A. TACGAACT

B. TCCGAACT

C. TACGTACT

D. TACGTAGT

**Answer: A**



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7. The hormone produced by pancreas

A. Adrenaline

B. Glucogen

C. Thyroxene

D. Cortisone

**Answer: B**



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8. Which of the following structures represents thymine ?

A. 

B. 

C. 

D. 

**Answer: D**



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9. Which statement is incorrect about peptide bond?

A. C-N bond length in proteins is longer than usual C-N bond length

B. Spectroscopic analysis shows planar structure of  $\begin{array}{c} -C- \\ || \\ O \end{array} -NH-$  bond

C. C-N bond length in proteins is smaller than usual C-N bond length

D. None of these

**Answer: C**



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**10.** The presence or absence of hydroxyl group on which carbon atom of sugar differentiates RNA and DNA?

A. 1<sup>st</sup>

B. 2<sup>nd</sup>

C. 3<sup>rd</sup>

D. 4<sup>th</sup>

**Answer: B**



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**11.** Which of the following compounds can be detected by Molisch's Test ?

A. Nitro compounds

B. Sugars

C. Amines

D. Primaryalcohols

**Answer: B**



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**12.** Night blindness is caused by deficiency of vitamin :

A. Vit- $B_{12}$

B. Vit-A

C. Vit-C

D. Vit-E

**Answer: B**



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**13.** Which of the following is correct about H-bonding in nucleotide?

- A. A---A and T ---T
- B. G---T and A---C
- C. A --- G and T ---C
- D. A---T and G --- C

**Answer: D**



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14. In an amino acid, the carboxyl group ionises at  $pK_{a_1}=2.34$  and ammonium ion at  $pK_{a_2}=9.60$ . The isoelectric point of the amino acid is at pH

A. 5.97

B. 2.34

C. 9.60

D. 6.97

**Answer: A**



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**15.** The secondary structure of a protein refers to

A. fixed configuration of the polypeptide backbone

B.  $\alpha$ -helical backbone



C. hydrophobic interactions

D. sequence of  $\alpha$ -amino acids

**Answer: B**



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**16.** Which of the following statements regarding DNA fingerprinting is incorrect?

A. It is used in forensic laboratories for identification of criminals.

B. It cannot be altered by surgery

C. It is different for every cell and cannot be altered by any known treatment

D. It is used to determine paternity of an individual.

**Answer: C**



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17. The artificial sweetener that has the highest sweetness value in comparison to cane sugar is :

A. Sucralose

B. Aspartane

C. Saccharin

D. Alitame

**Answer: D**



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18. The term invert sugar refers to an equimolar mixture of

A. D-glucose and D-galactose

B. D-glucose and D-fructose

C. D-glucose and D-mannose

D. D-glucose and D-ribose

**Answer: B**



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19. Which of the following compounds will behave as a reducing sugar in an aqueous KOH solution?

A. 

B. 

C. 

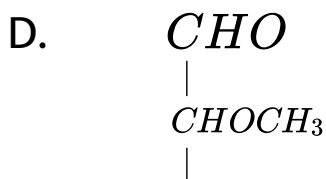
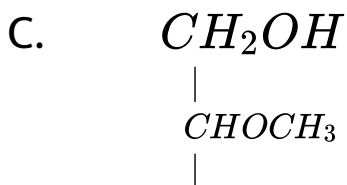
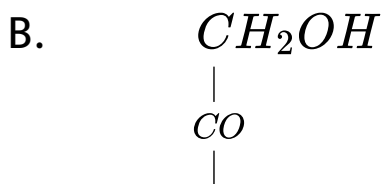
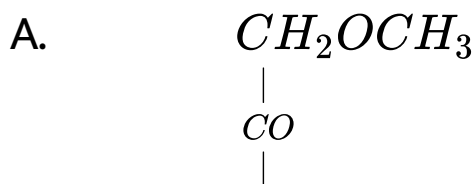
D. 

**Answer: A**



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20. For osazone formation, the effective structural unit necessary is



**Answer: B**



21. Which of the following statements about vitamin  $B_{12}$  is incorrect?

A. It has a cobalt atom

B. It also occurs in plants

C. It is also present in rain water

D. It is needed for human body in very small amounts

**Answer: C**



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22. The following carbohydrate is 

- A. a ketohexose
- B. an aldohexose
- C. an  $\alpha$ -furanose
- D. an  $\alpha$  - pyranose

**Answer: B**



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23. The two functional groups present in a typical carbohydrate are:

A.  $-CHO$  and  $-COOH$

B.  $C=O$  and  $-OH$

C.  $-OH$  and  $-CHO$

D.  $-OH$  and  $-COOH$

**Answer: C**



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24. Deficiency of vitamin E causes :

A. Beriberi

B. Scurvy

C. Sterility

D. None

**Answer: C**



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25. Which of the following terms indicates to the arrangement of different protein subunits in a multiprotein complex ?

A. primary structure

B. secondary structure

C. tertiary structure

D. quaternary structure

**Answer: D**



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26. The term anomers of glucose refers to

A. enantiomers of glucose

B. isomers of glucose that differ in configuration at carbon one (C-1)

C. isomers of glucose that differ in configurations at carbons one and four (C-1 and C-4)

D. a mixture of (D)-glucose and (L)-glucose

**Answer: B**

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27. In both DNA and RNA, heterocyclic base and phosphate ester linkages are at-

A.  $C'_5$  and  $C'_1$  respectively of the sugar molecule

B.  $C'_1$  and  $C'_5$  respectively of the sugar molecule

C.  $C'_2$  and  $C'_5$  respectively of the sugar molecule

D.  $C'_5$  and  $C'_2$  respectively of the sugar molecule

**Answer: B**



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**28.** An amine hormone is

A. Cortisone

B. Adrenaline

C. Insulin

D. Estrone

**Answer: B**



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**29.** Amino acids generally exist in the form of Zwitter ions. This means they contain

A. basic -  $NH_2$  group and acidic  $-COOH$  group

B. the basic -  $\overset{+}{N}H_3$  group and acidic

-  $COO^-$  group

C. basic -  $NH_2$  and acidic -  $H^+$  group

D. basic -  $COO^-$  group and acidic -  $\overset{+}{N}H_3$

group

**Answer: D**



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**30.** The change in the optical rotation (with time) of freshly prepared solution of sugar is known as

A. Specific rotation

B. Inversion

C. Rotatory motion

D. Mutarotation

**Answer: D**



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31. Phospholipids are esters of glycerol with

A. two carboxylic acid residues and one phosphate group

B. one carboxylic acid residue and two phosphate groups

C. three phosphate groups

D. three carboxylic acid residues

**Answer: A**



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**32.** When glucose reacts with bromine water, the main product is

- A. gluconic acid
- B. glyceraldehyde
- C. saccharic acid
- D. acetic acid

**Answer: A**



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**33.** Among the following vitamins the one whose deficiency causes rickets (bone deficiency) is

A. Vitamin A

B. Vitamin B

C. Vitamin D

D. Vitamin C

**Answer: C**



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34. Glucose molecule reacts with X number of molecules of phenylhydrazine to yield osazone. The value of X is

A. three

B. two

C. one

D. four

**Answer: A**



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**35.** Which of the following indicates to 'regions of ordered structure within a protein'.

A. Primary structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

**Answer: B**



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**36.** Denaturation of proteins leads to loss of its biological activity by

A. Formation of amino acids

B. Loss of primary structure

C. Loss of both primary and secondary structures

D. Loss of both secondary and tertiary structures

**Answer: D**



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37. The pair of compounds in which both the compounds give positive test with Tollen's reagent is

- A. Glucose and Sucrose
- B. Fructose and Sucrose
- C. Acetophenone and Hexanal
- D. Glucose and Fructose

**Answer: D**





**38.** Proteins when heated with conc.  $HNO_3$  give a yellow colour. This is

- A. Oxidizing test
- B. Xanthoproteic test
- C. Hoppe's test
- D. Acid base test

**Answer: B**



**39.** The reason for double helical structure of DNA is operation of

A. dipole-dipole interaction

B. hydrogen bonding

C. electrostatic attractions

D. van der Waals' forces

**Answer: B**



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**40.** Which of the statements about "Denaturation" given below are correct ?

(i) Denaturation of proteins causes loss of secondary and tertiary structures of the protein.

(ii) Denaturation leads to the conversion of double strand of DNA into single strand

(iii) Denaturation affects primary structure which gets distorted

A. (ii) and (iii)

B. (i) and (iii)

C. (i) and (ii)

D. (i),(ii) and (iii)

**Answer: C**



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**41.** Which of the following protein destroy the antigen when it enters in body cell?

A. Antibodies

B. Insulin

C. Chromoprotein

D. Phosphoprotein

**Answer: A**



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**42.** Glucose can't be classified as

A. hexose

B. carbohydrate

C. aldose

D. oligosaccharide

**Answer: D**



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**43.** Hydrolysis of sucrose is called

A. hydration

B. saponification

C. esterification

D. inversion

**Answer: D**



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