Self Practice Paper (SPP)

1. Glucose on reduction with Na/Hg and water gives ?
(1) Sorbitol (2) Fructose (3) Saccharic acid (4) Gluconic acid

2. Glucose or fructose is converted into C_2H_5OH in the presence of ?
(1) Diastage (2) Maltase (3) Invertase (4) Zymase

3. Glucose cannot be calassified as ?
(1) Hexose (2) Carbohydrate (3) Aldose (4) Oligo saccharide

4. Milk sugar is commonly known as
(1) Maltose (2) Lactose (3) Fructose (4) Glucose

5. The commonest disaccharide has the molecular formula ?
(1) $C_{10}H_{18}O_9$ (2) $C_{10}H_{20}O_{11}$ (3) $C_{18}H_{22}O_{11}$ (4) $C_{12}H_{22}O_{11}$

6. Strach is changed into disaccharide in presence of ?
(1) Diastase (2) Maltase (3) Lactase (4) Zymase

7. First member of ketose sugar is :
(1) ketotriose (2) ketotetrose (3) ketopentose (4) ketohexose

8. First member of aldose sugar is :
(1) aldotriose (2) aldotetrose (3) aldopentose (4) aldohexose

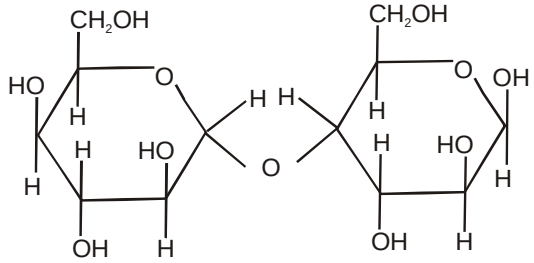
9. In the molecule, $CH_2OHCHOHCHOHCHOHCHOHCHO$, the number of optical isomers will be :
(1) 16 (2) 8 (3) 32 (4) 4

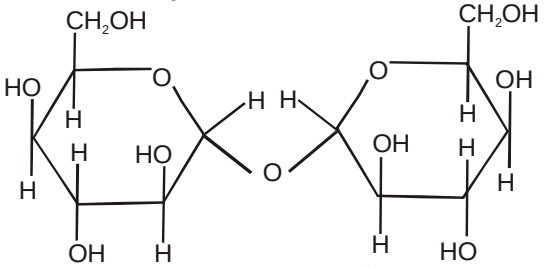
10. Which carbohydrate is used in silvering of mirror ?
(1) Sucrose (2) Fructose (3) Glucose (4) Strach

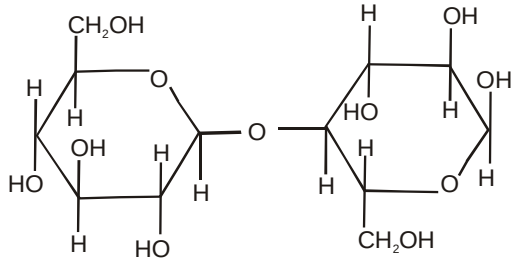
11. The charring product when $C_6H_{12}O_6$ is heated with conc. H_2SO_4 is due to ?
(1) Oxidation (2) Reduction (3) Dehydration (4) Dehydrogenation

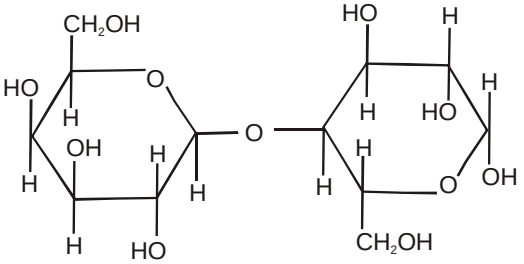
12. D-glucose and D-fructose can be differentiate by :
(1) Fehling's solution (2) Tollen's reagent
(3) Ph–NH–NH_2 (excess) (4) Br_2/H_2O

13. Which of the following oligosaccharides will not reduce Tollens reagent.

(1) 

(2) 

(3) 

(4) 

14. The function of proteins is to act as
(1) Structural materials of animal tissues (2) Enzymes and antibodies
(3) Metabolic regulators (4) All the three above

15. Anaerobic respiration of glucose produces :
(1) $CH_3COCH_3 + CO_2$ (2) $CH_3CH_2OH + CO_2$ (3) $CO_2 + H_2O$ (4) $CH_3OH + H_2O$

16. Neoprene, an important synthetic rubber, is formed by
(1) Polymerisation of isoprene (2) Polymerisation of chloroprene
(3) Copolymerisation of styrene and propene (4) Copolymerisation of styrene and vinyl chloride

17. Iron present in haemoglobin is in :
(1) ferrous state (2) ferric state
(3) partly in ferrous and partly in ferric state (4) elemental state

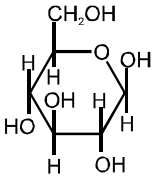
18. The essential amino acids are :
(1) glycine (2) alanine (3) serine (4) leucine

19. Bakelite is a copolymer of
(1) urea and formaldehyde (2) Phenol and formaldehyde
(3) terephthalic acid and ethylene glycol (4) melamine and formaldehyde

20. Carbohydrates have not been classified on the basis of :
(1) sugars and non-sugars (2) reducing character
(3) optical activity (4) hydrolysis (complexity of structure)

21. Which of the following statements about β-pleated sheet secondary structure of proteins is correct ?
(1) Parallell β-pleated sheet structure is more stable than the antiparallel sheet structure.
(2) Antiparallel β-pleated sheet structure is more stable than the parallel sheet structure.
(3) Both parallel and antiparallel sheet structures have equal stability.
(4) there is no clear relationship between the two in terms of stability.

22. The two forms of D-Glucopyranose obtained from solution of D-Glucose are known as
(1) Epimers (2) Anomers (3) Enantiomers (4) Geometrical Isomers

23. 

Glucose

The incorrect statements about above structure of glucose are :
(1) It is a Pyranose form (2) It is a furanose form
(3) It is a β-anomer (4) It is a D -sugar

24. Which is incorrect for glucose :
(1) dextrose (2) grape sugar (3) aldohexose (4) ketohexose

25. Fructose may not be differentiated from glucose by :
(1) action of lime (2) the action of concentrated alkali
(3) optical rotation (4) oxidation with Tollen's reagent

26. Glucose and fructose give same type of reactions :
(1) with bromine water (2) on reduction with Na-Hg/H_2O
(3) with Fehling's solution (4) All are correct.

27. The protein responsible for blood clotting is :
(1) Albumins (2) Globulins (3) Fibroin (4) Fibrinogen

28. Which of the follwing is a protein ?
(1) Nylon (2) Natural silk (3) Rayon (4) Terrylene

29. The common source of carbohydrates, fat and proteins is
(1) Rice (2) Milk (3) Egg (4) Ghee

30. Which of the following is required for prepariing Nylon 6, 6 ?
(1) ε-Caprolactam (2) Phthalic acid (3) terephthalic acid (4) Adipic acid

31. CF_2= CF_2 is a monomer of
(1) buna-S (2) teflon (3) glyptal (4) nylon-6

32. Natural rubber is a polymer of
(1) butadiene (2) ethyne (3) styrene (4) isoprene

33. αD(+) glucose and βD(+) glucose are
(1) anomers (2) epimers (3) enantiomers (4) geometrical isomers

34. A polymer containing nitrogen is :
(1) bakelite (2) dacron (3) rubber (4) nylon-6, 6

35. In elastomer, intermolecular forces are :
(1) nil (2) weak (3) strong (4) very strong

36. Which of the following is a cross-linked polymer ?
(1) Teflon (2) Orlon (3) Nylon (4) Bakelite

37. Which is not a polymer ?
(1) Sucrose (2) Cellulose (3) Starch (4) Teflon

38. Which of the following polymers can be used for lubrication and as an insulator ?
(1) SBR (2) PVC (3) PTFE (4) PAN

39. **Match the list-I with list-II with suitable option :**

list-I (Polymer)	**list-II (Polymerizing units)**
(a) Bakelite	(p) Butadiene and styrene
(b) Dacron	(q) Phenol and methanal
(c) Nylon-66	(r) 1, 2-dihydroxyethane and dimethyl terepthalate
(d) Buna-S	(s) 1, 6-hexanedioic acid and 1, 6-diamino hexane

(1) (a) - s ; (b) - r ; (c) - q ; (d) - p (2) (a) - p ; (b) - s ; (c) - r ; (d) - q
(3) (a) - q ; (b) - r ; (c) - s ; (d) - p (4) (a) - p ; (b) - q ; (c) - r ; (d) - s

40. Match the following columns :

	Column-I		**Column-II**
(A)	Nylon-6	(p)	Addition copolymer
(B)	Buna-S	(q)	Addition homopolymer
(C)	Polythene	(r)	Condensation homopolymer
(D)	Teflon	(s)	Condensation copolymer

(1) (A) - s ; (B) - q ; (C) - p ; (D) - r (2) (A) - p ; (B) - r ; (C) - q ; (D) - s
(3) (A) - r ; (B) - p ; (C) - q ; (D) - q (4) (A) - r ; (B) - p ; (C) - q ; (D) - s

41. At isoelectric point :

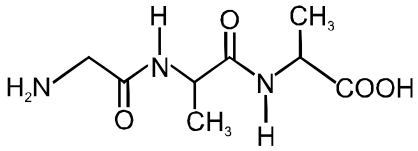
(1) Concentration of cation is equal to concentration of anion.

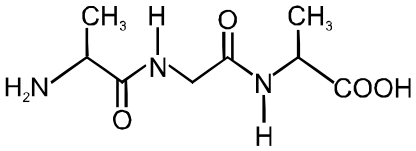
(2) Net charge is zero.

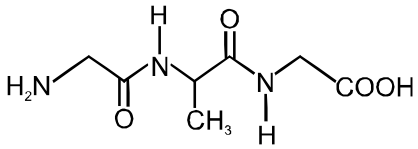
(3) Maximum concentration of α-aminoacid exist as dipolar ion (Zwitter ion).

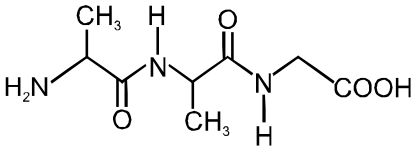
(4) All of these

42. The tripeptide is written as Glycine-Alanine-Glycine. The correct structure of the tripeptide is :

(1) 

(2) 

(3) 

(4) 

43. The non-protein portion of a protein is called :

(1) Functional group (2) Characteristic group

(3) Prosthetic group (4) Enolic group

44. Which of the following is a fibrous protein ?

(1) Haemoglobin (2) Albumin (3) Keratin (4) Enzymes

45. Glucose and fructose are :

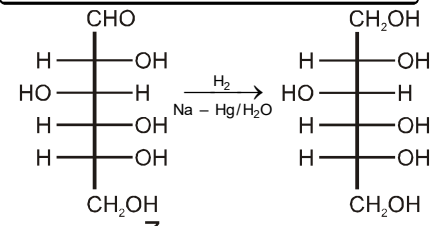
(1) Optical isomers (2) Tautomers (3) Functional isomers (4) Chain isomers.

SPP Answers

1.	(1)	**2.**	(4)	**3.**	(4)	**4.**	(2)	**5.**	(4)	**6.**	(1)	**7.**	(2)
8.	(1)	**9.**	(1)	**10.**	(3)	**11.**	(3)	**12.**	(4)	**13.**	(2)	**14.**	(4)
15.	(2)	**16.**	(2)	**17.**	(1)	**18.**	(4)	**19.**	(2)	**20.**	(3)	**21.**	(3)
22.	(2)	**23.**	(2)	**24.**	(4)	**25.**	(4)	**26.**	(3)	**27.**	(4)	**28.**	(2)
29.	(2)	**30.**	(4)	**31.**	(2)	**32.**	(4)	**33.**	(1)	**34.**	(4)	**35.**	(2)
36.	(4)	**37.**	(1)	**38.**	(3)	**39.**	(3)	**40.**	(3)	**41.**	(4)	**42.**	(3)
43.	(3)	**44.**	(3)	**45.**	(3)								

SPP Solutions

1.



2. $C_6H_{12}O_6 \xrightarrow[3O_2]{\text{Zymase}} C_2H_5OH + 4CO_2 + 3H_2O$

3. Glucose is a monosaccharide where as oligosaceharides are those which have 2-10 monosaccharide units

4. Lactose is found in milk so also called as milk sugar.

5. Commonest disaccharide (sucorse) has molecular fomula $C_{12}H_{22}O_{11}$.

6. Starch is hydrolysed by the enzyme diastase (also called β-amylase) to maltose

10. Glucose contain – CHO group so used for silvering of mirror.

11. Glucose is a hydrate of carbon $C_6(H_2O)_6$ and dehydration on heating with conc, H_2SO_4

13. Because (1), (3), (4) have hemiacetal structure.

15. Anaerobic respiration of glucose produces $CH_3CH_2OH + CO_2$.

16. Neoprene $-(CH_2 - \underset{Cl}{\underset{|}{C}} = CH - CH_2)_n-$ is a polymer of $CH_2 - \underset{Cl}{\underset{|}{C}} = CH = CH_2$ (chloroprene).

17. Iron present in haemoglobin is in ferrous state.

18. The essential amino acids are valine, leucine.

20. Carbohydrates have been classified on the basis of sugars and non-sugars, reducing character, hyrolysis (complexity of structure).

22. α-D-Glucopyranose and β-D-Glucopyranose are anomers.

23. 6 membered ring with oxygen making a center is pyranose form.

24. Glucose does not contain ketonic group.

26. Glucose and fructose both reduce fehling's solution.

27. Fibrinogen is protein responsible for blood clotting.

28. Natural silk is a protein and all are polymers..

29. The common source of carbohydrates, fat and proteins is Milk.

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39.

Bakelite	$\longrightarrow$	Phenol and methanal
Dacron	$\longrightarrow$	1, 2-dihydroxyethane and dimethyl terepthalate
Nylon-66	$\longrightarrow$	1, 6-hexanedioic acid and 1, 6-diamino hexane
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