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Note:-

1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

Section A

Q.1 Select and write the correct answer.

(4)

1. Which amine acid is achiral?
A) alanine B) valine
C) proline D) histidine
2. DNA is polymer of unit of
A) sugar B) Amino acid
C) nucleotide D) ribose
3. Starch and cellulose are the compounds made up of many units of
A) Simple Sugar B) Fatty acid
C) glycerol D) Amino acid
4. Mutation of DNA occur due to change in the sequence of one of the following.
A) Bases B) ribose units
C) Phosphate unit D) Sugar unit

Q.2 Answer the following.

(3)

1. What product are expected when lactose is hydrolysed?
2. Is galactose an aldohexose or a ketohexose?
3. Which α -amino acid can cross link peptide chain?

Section B

Attempt any Four

- Q.3 Compare the molecular masses of the following compounds and explain the observed melting points. **(2)**

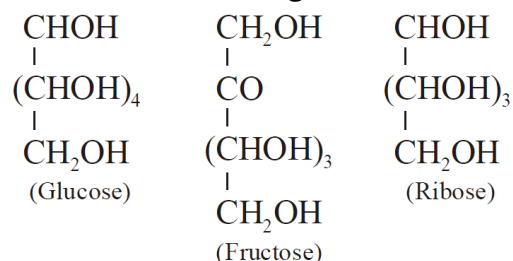
Formula	Molecular mass	Melting point
$\text{CH}_3-\underset{\text{NH}_2}{\text{CH}}-\text{COOH}$	89	293.5 °C
$\text{C}_5\text{H}_{11}-\text{NH}_2$	87	-55 °C
$\text{C}_3\text{H}_7-\text{COOH}$	88	-7.9 °C

- Q.4 Write a note on glycogen. **(2)**
- Q.5 When you chew plain bread, chapati or bhaakari for long time, it tastes sweet. What could be the reason? **(2)**
- Q.6 How is glucose prepared from sucrose? **(2)**

Q.7 Some of the following statements apply to DNA only, some RNA only and some to both label them accordingly. (2)

- a) The polynucleotide is double stranded. b) The polynucleotide contains uracil.
c) The polynucleotide contains D-Ribose d) The polynucleotide contains guanine.

Q.8 Observe the following structural formulae carefully and answer the questions. (2)



1. How many OH groups are present in glucose, fructose and ribose respectively?
2. Which other functional groups are present in these three compounds?

Section C
Attempt any Two

Q.9 Write the formation of nucleic acid structure. (3)

Q.10 Distinguish between globular and fibrous proteins. (3)

Q.11 What are the products of reaction of (3)

i. $\text{CH}_3 - \text{CO} - \text{CH}_3$ with $\text{NH}_2 - \text{OH}$? ii. $\text{CH}_3 - \text{CHO}$ with HCN ? iii. $\text{CH}_3 - \text{OH}$ with $\text{CH}_3 - \text{CO} - \text{O} - \text{CO} - \text{CH}_3$?

Section D
Attempt any One

Q.12 Explain four levels of proteins structure with example. (4)

Q.13 Give two evidence for the presence of Formyl group in glucose. (4)