SOLUTION TEST-A

1. Glucose and fructose both are monosaccharides. All monosaccharides are reducing sugars means they gives positive Fehling solution and Tollen's reagent test.

   The correct answer is (ii)

2. Denaturation means loss in biological activity of proteins. The denaturation results in destruction of secondary and tertiary structure while primary structure of proteins remains intact.

   The correct answer is (i)

3. Vitamin-E is an anti-oxidant.

   The correct answer is (iv)

4. The insulin is peptide hormone. Its function is to maintain glucose level in the blood stream.

   The correct answer is (ii)

5. The assertion is wrong.

   The momomeric with in DNA are held together by phosphodiester linkage whereas the two strands of DNA are held together by hydrogen bonding.

   The correct answer is (iii)

6. Hydrogen bonding
7. Vitamin-D
8. (i) Open-chain glucose does not give a crystalline product with $NaHSO_3$. Also, open chain glucose does not give orange-yellow precipitate with 2, 4-DNP

   (ii) $HOCH_2 - (CHOH)_4 - CHO \xrightarrow{Br_2} HOCH_2 - (CHOOH)_4 - COOH$

9. (i) Vitamin-K

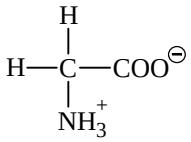
   (ii) Vitamin-C is known as ascorbic acid. The deficiency of this vitamin leads to a disease called scurvy.

10. (i) Two strands of DNA are not identical but complementary because if we know the sequence of bases on one strand of DNA, we can write a sequence of bases on the second strand of DNA. This base pairing is very specific as A pair up with T via two hydrogen bonds and G pair up with C via three hydrogen bonds.

    (ii) DNA replication is semiconservative because when DNA unwinds and splits into two strands, each single strand then synthesis another strand on its own. This is how cells multiply. But in each daughter cell, one of the strand is from the parent cell. Hence, the DNA replication is semi conservative.

11. (i) On reduction with HI / red P, glucose gives n-hexane. This reaction proves the presence of six carbon atoms in straight chain

$$HO - CH_2 - (CHOH)_4 - CHO \xrightarrow[\text{red P}]{HI} \underset{\text{n – hexane}}{CH_3 - CH_2 - CH_2 - CH_2 - CH_2 - CH_3}$$

    (ii) Simplest amino acid is glycine, its Zwitterion is 

    (iii) Male sex hormone: Testosterone

    Female sex hormone: Estradiol

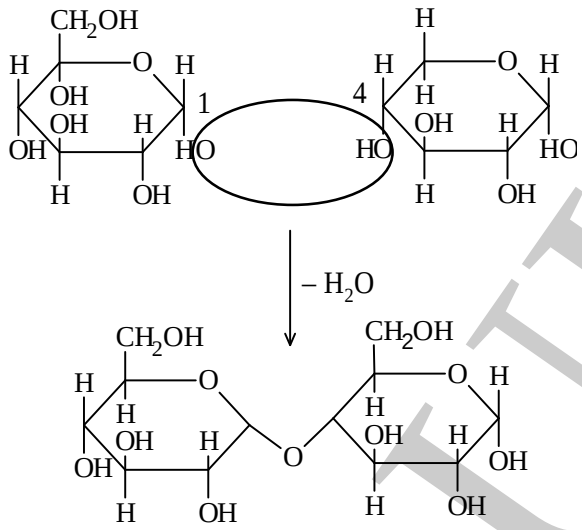
12. (i) Deoxyribose, phosphoric acid group PO_4^{3-}, thymine

    (ii) Invertase

    (iii) The water present in the egg helps in hydrolysing the peptide bond. This results in the coagulation of protein and egg on boiling becomes hard.

13. (i) Isoelectric point is a pH at which the Zwitterion doesn't move towards either of the electrode.

(ii) Glycosidic linkage is an ether linkage which joins the monosaccharides in a polysaccharides. This linkage is formed as a result of the intermolecular dehydration.



Glycosidic linkage

(iii) β-pleated sheet like structure is a secondary structure of protein in which the polypeptide chains are laying side by side. There exist intermolecular H-bonding between the chains. This structure of protein is more open.

14.

Vitamin	Sources	Deficiency disease
A	Milk, Butter, egg, fish, tomatoes, carrots	Night blindness, stunted growth, xerophthalmia.
B_6	Rice bran, yeast, meat, wheat, maize.	General weakness, insomnia, irritatabilty.
B_{12}	Milk, egg	Pernicious anemia, inflammation of tongue.

15. (i)

	Fibrous proteins		Globular proteins
•	They have thread like structure	•	They have a ball shape spheroidal structure
•	They are insoluble in water	•	They are soluble in water
•	They are unaffected by small change in temperature and pH	•	They are sensitive to small change in pH and temperature
•	Example: Keratin	•	Example: Haemoglobin

(ii) β-D-Glucose

(iii) Amylose

(iv)