B.Sc (H) chemistry
Carbohydrate Assignment
Semester-VI

Q1 Draw the more stable chair conformer for α-D-fructopyranose.

Q2 Give two products of the reaction of an aldohexose with excess $(MeO)_2SO_2$ (dimethyl sulfate) or MeI in conc. NaOH. Explain their formation

Q3 Would you expect glycosides to react with either Fehling's or Tollen's reagent? Explain.

Q4 Explain why inverting the configuration of C5 of D-glucose doesn't give L-glucose.

Q5 Give the structure of D-ribose, a constituent of RNA, if it gives the same osazone as D-arabinose

Q6 Which D-aldohexose are oxidized by HNO3 to give meso-aldaric acid. Give one example.

Q7 Explain the fact that in aqueous NaOH, fructose is in equilibrium with an aldohexose i.e. glucose, accounting for the positive Fehling's test

Q8 Supply structures for A through D given

An aldohexose $\xrightarrow{aq.\ Br_2}$ A $\underset{\text{Pyridine}}{\rightleftharpoons}$ B $\xrightarrow{H^+}$ C $\xrightarrow[CO_2]{Na\text{-}Hg}$ D

What is the net change of this sequence.

Q9 Give the structure of D-arabinose, the aldose isolated after subjecting D-mannose, the C2 epimer of glucose, to a Ruff degradation

Q10 Describe the digestive disorder known as lactose intolerance.