Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech (CT)/SEM-6/CT-602/2010

2010

GLASS — II

Time Allotted : 3 Hours Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A
(Objective Type Questions)

1. Answer *all* questions. 10 × 1 = 10

   i) Danner process is meant for making flat glass. *Yes/No*

   ii) Mechanical stress cannot be removed by annealing. *Yes/No*

   iii) Annealing Lehr length depends of temperature profile. *Yes/No*

   iv) Level of glass is a good indicator for Tank Furnace Operation. *Yes/No*

   v) Glass Tube Rejection rates are lower than that of bulbs. *Yes/No*

vi) Chemical durability test measures only Na ions in solution. *Yes/No*

vii) Seeds & bubbles cannot be removed in a Tank Furnace. *Yes/No*

viii) Viscosity at Furnace exit is higher than that at IS machine entry. *Yes/No*

ix) Glass needs to be harder for better blowing in IS machine. *Yes/No*

x) For flatness, Fourier waves decay is important in float glass. *Yes/No*

GROUP – B
(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Give technical data & their importance of Tin Bath in the float process.

3. Give details of Danner process of making bulbs.

4. Give comparison of rejection rates in tubes and bulbs.

5. For creating different thickness in four container glasses, how will viscosity-temperature curves evolve ?

6. Show the calculations of Fourier waves decay in a float process.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. Using the well-known Adams-Williams mechanism of annealing, indicate the proposal of Lillie. How Stokes' Law is applied in refining ? 8 + 7

8. Give details of container glass process and use viscosity-temperature curves at important points of production and their control. 6 + 9

9. What do you understand by compositional engineering ? By taking two chemical components in each case, discuss three important properties of glasses and their control. 6 + 9

10. How to adjust IS machine parameters in terms of viscosity-temperature curves at different stages of the production process ? Give examples. 9 + 6

11. Write short notes on any *four* of the following : $4 \times 3\frac{3}{4}$

    i) Tube manufacture

    ii) Amber glass production

    iii) Optical glass production

    iv) Importance of Critical Stress Intensity Factor

    v) Kinetic equations for chemical durability.