

**Semester-I, M.Sc. (Industrial Chemistry) Examination**

**October / November - 2015**

**Paper- IC- 2: Instrumentation**

**Subject Code: 2741**

**Time: 2.30 Hours**

**Total Marks: 70**

- Que.-1 Write a short note. (Any two) 14
- (1) Bimetallic thermometer (3) Resistance thermometer  
(2) Falling sphere viscometer (4) Hydrometer
- Que.-2 Write a brief note on direct reading spectro-colorimeter with neat sketch 14
- OR
- Que.-2 What is density? Write a note on specific gravity balance with its sketch. 14
- Que.-3 What is liquid level measurement? Explain direct liquid level measurement in detail. 14
- OR
- Que.-3 Give complete detail of quadrupole mass spectrometer. 14
- Que.-4 Calculate any two.
- (1) 4.9 gm  $\text{H}_2\text{SO}_4$  is dissolved in distilled water to make 3 liter aqueous solution. Find out its pH. 07
- (2) 1.0 gm NaOH is dissolved in distilled water to make 5 liter aqueous solution. Find out its pH. 07
- (3) Find out pH of 0.00042M aqueous solution of KOH. 07
- (4) Find out pH of 0.03M aqueous solution of  $\text{HNO}_3$ . 07
- Que.-5 What potentiometric titrations? Explain it in detail. 14
- OR
- Que.-5 What is chromatography? State & explain types of Paper Chromatography with detail. 14