

Day : Monday  
Date : 30/10/2017

Time : 3:00 P.M. TO 5:00 P.M.  
Max. Marks : 40.

W-2017-0658

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.

**SECTION-I**

**Q.1** Attempt any **TWO** of the following: (10)

- a) What is digestion in gravimetric analysis? Describe in detail Ostwald's ripening of ppt.
- b) Describe method for determination of pH by potentiometry.
- c) Discuss in brief the instrumentation of thermogravimetric analysis.

**Q.2** Attempt any **TWO** of the following: (10)

- a) With the help of a block diagram describe in short the instrumentation of AAS.
- b) Explain the measurement of specific rotation by using polarimeter.
- c) What precautions can be taken to minimize co-precipitation and post precipitation.

**SECTION-II**

**Q.3** Attempt any **TWO** of the following: (10)

- a) Describe any two methods to determine the end point of potentiometric titration.
- b) Write a note on hollow cathode lamp.
- c) Discuss the various applications of TGA.

**Q.4** Attempt any **TWO** of the following: (10)

- a) The specific rotation of fructose containing 6 gm per lit is to be determined when angle of rotations  $+2.5^\circ$  and tube length is 25 cm. Calculate specific rotation and also molar rotation of glucose.
- b) The solubility product of  $\text{Mg}(\text{OH})_2$  is  $1.14 \times 10^{-11}$  at  $25^\circ\text{C}$ . Calculate the solubility of  $\text{Mg}(\text{OH})_2$  in water in gm/ lit and moles/ lit.
- c) The specific rotation of Nicotine is  $162^\circ$  at 589 mm. What is the concentration of solution in moles/ lit, if rotation is  $0.52^\circ$  with length of the tube is 10 cm?

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