

**U.G. 5th Semester Examination - 2021**

**CHEMISTRY**

**[HONOURS]**

**Course Code : CHEM(H)CC-P-11/PR**

**[PRACTICAL]**

Full Marks : 20

Time : 2 Hours

*The figures in the right-hand margin indicate marks.*

Answer any **four** questions:

5×4=20

1. a) Nickel cannot precipitate with DMG in acidic media. Why?
- b) What are the basic principles of gravimetric analysis?
- c) What is the oxidation state of Cl in bleaching powder? 2+2+1
2. Write a brief procedure for the determination of percentage of Cu in brass solution. 5
3. a) Define  $R_f$  value in chromatographic separation.
- b) Write down the principle for the separation of Co(II) and Ni(II) ions. 2+3

4. a) In titration of ferric iron with  $\text{KMnO}_4$  the end point is not permanent pink, the colour fades after 15 seconds. Why?
- b) Give the two commercial uses of bleaching powder.
- c) Write down the balanced chemical reaction for the preparation of  $\text{Mn}(\text{acet})_3$ . 2+1+2
5. a) Write down the principle for the estimation of available oxygen from pyrolusite by standard  $\text{KMnO}_4$  solution.
- b) Write down the composition of portland cement. 3+2
6. a) What is DMG? Give its structure.
- b) Write down the principle for the estimation of iron from portland cement by standard  $\text{KMnO}_4$  solution. 2+3
7. a) What is the end point colour in the iodometric titration of dichromate and thiosulphate? Why does the green colour suddenly appear at the end point?
- b) What is the basic difference between iodometric and iodimetric titration?
- c) What type of indicator is starch? Explain its working. 2+1+2

[Turn over]