

## M.Sc. Semester-3 Examination

504

Chemistry (O)

March-2024

Time : 2-30 Hours]

[Max. Marks : 70]

**Instructions:** (1) All questions are compulsory.  
 (2) Figures to right indicate full marks.

**Question – 1. Write the following.**

(i) Why new drug development is essential ? Discuss it. 7-MARKS  
 (ii) Write a note on “Quantitative structure activity relationship”. 7-MARKS

**OR**

(i) Discuss Structural variations among tetracycline and penicillin. 7-MARKS  
 (ii) What is Hard drug and soft drug ? Write a note on importance of physio chemical parameters like lipophilicity and partition coefficient for API (Drug). 7-MARKS

**Question – 2. Write the following.**

(i) Give synthesis and uses of: Isoniazid (INH) and Ethambutol. 7-MARKS  
 (ii) Give synthesis and uses of: Daraprim and Chloroquine. 7-MARKS

**OR**

(i) Give synthesis and uses of: Atenolol and Methyl dopa. 7-MARKS  
 (ii) Give synthesis and uses of: Alprazolam and Ibuprofin. 7-MARKS

**Question – 3. Write the following.**

(i) Discuss the difference between batch versus continuous operation. 7-MARKS  
 (ii) Discuss sulphonation of Naphthalene,  $\alpha$ -Naphthol and  $\beta$ -Naphthol at various concentration of  $H_2SO_4$  and temperature. 7-MARKS

**OR**

(i) Discuss the importance of GLP and GMP in industry. 7-MARKS  
 (ii) Write a note on green catalysts and solvents with suitable examples. 7-MARKS

**Question – 4. Write the following.**

(i) Discuss various types of filtration in brief. 7-MARKS  
 (ii) What is TLC ? Explain TLC with mobile phase and Stationary phase. 7-MARKS

**OR**

(i) Write a note on extraction. 7-MARKS  
 (ii) Write a note on GC and Column Chromatography. 7-MARKS

(P.T.O.)

**Question – 5. Attempt any seven out of twelve.**

14-MARKS

1. Define: docking.
2. Define: pro-drug.
3. What is Antimalarial agents ?
4. Give structure and use of DDS (Dapsone).
5. Define: Cardiovascular drugs.
6. What are Psychoactive drugs ?
7. What is patents?
8. What is Oleum?
9. Define: one pot reaction.
10. What can be separated by fractional distillation ?
11. What is SFC used for ?
12. What is the main principle of HPLC ?