 PG/IIIS/CEM/304/24 (CBCS)

M. Sc. 3rd Semester Examination, 2024

CHEMISTRY

PAPER – CEM-304 (CBCS)

Full Marks : 50

Time : 2 hours

Answer **all** questions

The figures in the right hand margin indicate marks

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

GROUP—A

Answer any **four** questions : 2×4

1. What are pharmacodynamics and pharmacokinetics ?

2. How ADME are essential for the study of pharmacokinetics of drugs ?

3. What is metabolite-antagonism ?

4. Draw the structure of retinol and state its function.

5. How will you prepare nicotinamide ?

6. Draw the structure of Quinghaosu and state its function.

GROUP–B

Answer any **four** questions : 4×4

7. What are receptors ? Discuss the binding modes of drugs with receptors. What are catalytic receptors ?

8. Explain Paul-Ehrlich model for drug-receptor interaction. What are DNA Receptors ?

9. With the help of mechanism describe the inactivation of prostaglandin synthase.

10. Outline a scheme for the synthesis of Phenobarbital.

11. What is hydroxychloroquine used for ? How will you synthesize it ?

12. How will you synthesize Triazolam ? What is its function ?

GROUP–C

Answer any **two** questions : 8×2

13. "Captopril binds with Enzyme ACE and blocks it". Explain the process and sketch the diagram. Write down the synthetic steps involved in the preparation of captopril from a suitable compound. $4 + 4$

14. Why Salbutamol is known as agonistic drug ? Write down the synthesis of Salbutamol. Why ranitidine is called an antagonistic drug ? Write down the synthesis of Ranitidine. $2 + 2 + 2 + 2$

15. State the sources of vitamin E. What are the physiological functions of this vitamin ? What are diseases caused by the deficiency of this vitamin ? How will you synthesize (+)-β-tocopherol ? 2 + 2 + 2 + 2

16. Suggest a scheme each for the synthesis of pyridoxine and miconazole. 5 + 3

[Internal Assessment — 10 Marks]