3 Yr. Degree/4 Yr. Honours 1st Semester Examination, 2023 (CCFUP)

Subject : Chemistry

Course: CHEM1051 (SEC)

(Drugs and Pharmaceuticals)

Time: 2 Hours **Full Marks: 40**

The figures in the right hand margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

1. Answer *any five* questions: 2×5=10

(a) Define the term drugs. State any two properties/requirements of an ideal drug.

(b) What is antibiotic? Give two examples.

(c) Name a non-steroidal anti-inflammatory drug. State it's use(s).

(d) Dapsone is used to treat which disease?

(e) Condensation of phenyl ethyl malonic diethyl ester with urea in presence of metallic sodium yields which drug? Write its formula.

(f) For treatment of which disease is glyceryl trinitrate used (i) as spray or tablet (ii) as 0.2% ointment?

(g) In which class of antibiotic does chloramphenicol belong? Draw its structure.

(h) Write the uses of diazepam.

2. Answer *any two* questions: 5×2=10

(a) (i) Outline a synthesis of Dapsone starting from p-chloronitrobenzene.
(ii) Cite any two common side effects of dapsone. 3+2

(b) (i) Which disease is treated by acyclovir?
(ii) Draw the structures of:
(I) Sulfapyridine (II) Sulfadiazene (III) Sulfamethoxazole 2+3

(c) Outline the synthesis of:
(i) glyceryl trinitrate
(ii) Ibuprofen from isobutyl benzene 2+3

(d) (i) Starting from benzene outline a general synthesis of sulfonamide.
(ii) What are sulfonamides mainly used to treat? 4+1

3. Answer *any two* questions: 10×2=20

(a) (i) How can you synthesize acyclovir?

(ii) State two side effects of acyclovir.

(iii) What is the chemical name of AZT?

(iv) Draw the structure of AZT.

(v) What is antiviral agent? 3+2+1+2+2

(b) (i) What do you understand by the term analgesic and antipyretic?

(ii) What is aspirin used for? What are its side effects?

(iii) Outline a synthesis of paracetamol. (2+2)+(2+2)+2

(c) (i) State the class to which trimethoprim belong.

(ii) State two uses of trimethoprim.

(iii) Draw the structure of trimethoprim.

(iv) Outline the synthesis of trimethoprim. 1+2+2+5

(d) Match the following: 2×5=10

Group-A	Group-B
(I) Antibiotic	(p) Acyclovir
(II) HIV/AIDS	(q) Sulphacetamide
(III) C.N.S. Agent	(r) Penicillin
(IV) Antiviral	(s) AZT
(V) Antifungal	(t) Diazepam