

U.G. 1st Semester Examination - 2025**CHEMISTRY****[Skill Enhancement Course (SEC)]****Course Code: CHEM-SEC-T-01****(Pharmaceutical Chemistry)****[NEP-2020]**

Full Marks: 35

Time: 1½ Hours

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

1. Answer any five questions from the following:

1×5=5

- a) What is therapeutic agent?
- b) Write down the structure of Diazepam? Mention it one use.
- c) What is NSAID? Give an example.
- d) What are sulphonamides?
- e) Give an example of each acidic and basic amino acid.
- f) What are anti-inflammatory agents? Give an example.
- g) What happen when Vitamin C is exposed in air?
- h) What is AZT?

[Turn over]

2. Answer any two questions from the following:

5×2=10

- a) How aspirin could be prepared from phenol?
How aspirin helps to prevent the risk of heart attack or strokes? 3+2
- b) Synthesize sulfacetamide from suitable starting materials. Write down two uses of the drug. 3+2
- c) Name one drug which is used as antiepileptic. How could it be synthesized? What are the effects of excess intake of vitamin C on human being? 1+2+2
- d) What are drugs? What are the ideal requirements of a drug? What are broad spectrum and narrow spectrum drugs? 1+2+2

3. Answer any two questions from the following:

10×2=20

- a) What is fermentation? Write down the differences between aerobic and anaerobic fermentation. How will you prepared the followings commercially i) Vitamin C ii) Ethyl alcohol. 1+3+3+3
- b) What is Phenobarbital? Write its structure and uses. Write down uses of chloromycetin? How could be paracetamol synthesized? Why vitamin B₂ is also called Lactoflavin? 1+2+2+3+2

- c) Write down the chemical name of vitamin B₁₂. Also indicate metal ion and its oxidation state present in it. Name the fungus used in the preparation penicillin industrially. How will you prepare rectified alcohol commercially? What are the key conditions for a compound to act as antibiotic? 1+2+1+3+3

d) Give a brief account on the following:

- i) Antipyretic agents
- ii) Glyceryl trinitrate
- iii) Drug discovery
- iv) Magnesium bisilicate (antacid) 2+3+3+2