UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 3rd Semester Examination, 2023

SEC1-P1-CHEMISTRY

PHARMACEUTICAL CHEMISTRY

NEW AND OLD SYLLABUS

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1.   Answer any *five* questions from the following: 1×5 = 5

  (a) What do you mean by chemotherapeutic agents?

  (b) What is efficacy of a drug?

  (c) Give an example of a bacteriocidal antibiotic.

  (d) Give the structure of ascorbic acid.

  (e) Give an example of a sulfone antibiotic.

  (f) What are CNS agents? Give an example.

  (g) Give two examples of antipyretic agents.

  (h) What is Dapsone?

GROUP-B

2.   Answer any *three* questions from the following: 5×3 = 15

  (a) (i) What is a broad-spectrum antibiotic? Give an example.   2+1

     (ii) Why is a narrow-spectrum antibiotic better than a broad-spectrum antibiotic?   2

  (b) (i) Give a green method of preparation of aspirin.   2

     (ii) What are bio-pesticides? Give an example.   2+1

  (c) (i) Give the structure of Phenobarbital. Describe its use as a drug.   1+2

     (ii) Name the four stages involved in the fermentation process of production of lysine.   2

  (d) (i) What is a cardiovascular drug? Give an example of a drug which maybe useful for the treatment of angina.   2+1

     (ii) What is NSAID? Give an example.   2

(e) (i) What do you understand by 'screening' in drug development? 3

(ii) Why cannot we use penicillin as an oral medicine? 2

GROUP-C

3. Answer any *two* questions from the following: $10 \times 2 = 20$

(a) Write short notes on the following: $2\frac{1}{2} \times 4 = 10$

   (i) Importance of Vitamin B_2 and B_{12} in human body

   (ii) Sulpha drugs

   (iii) Aerobic fermentation

   (iv) Non-antibiotic antimicrobial drugs.

(b) (i) Outline a synthesis for paracetamol and ranitidine. $2\frac{1}{2} \times 2 = 5$

   (ii) What is chloramphenicol? Mention some of its side effects. 1+2

   (iii) Write a short note on fat-soluble vitamins. 2

(c) (i) Name an antibiotic which may be used to treat tuberculosis. 1

   (ii) What is the full form of AIDS? Give an example of an anti-AIDS drug and outline its synthesis. 1+1+3

   (iii) Give the structure and medicinal use of curcumin. 3

   (iv) Write down the structure of zidovudine. 1

(d) (i) Name the heterocyclic ring present in trimethoprim. Outline its synthesis. 1+3

   (ii) What is a combination drug? Give an example. 2+1

   (iii) Name two antibiotics which can cross the blood-brain barrier. 2

   (iv) What is meant by half life of a drug? 1

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