

B.Sc. 4th Semester (Honours) Examination, 2019**Subject : Chemistry****Paper : SEC-2****(Pharmaceutical Chemistry)****Time: 2 Hours****Full Marks: 40***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer *any five* questions from the following: 2×5=10
 - (a) What do you mean by analgesic? Give one example. 1+1=2
 - (b) Name two antifungal agents and draw their structures. 1+1=2
 - (c) How will you synthesise paracetamol? 2
 - (d) Name one cardiovascular drug and draw its structure. 1+1=2
 - (e) Name one antileprosy drug and draw its structure. 1+1=2
 - (f) State true or false: 1+1=2
 - (i) Chloramphenicol is an antifungal agent.
 - (ii) Ibuprofen is an anti-inflammatory agent.
 - (g) What do you mean by aerobic and anaerobic fermentation? 1+1=2
 - (h) Draw the core structure of Cephalosporin. Give one use of this drug. 1+1=2
2. Answer *any two* questions from the following: 5×2=10
 - (a) How will you synthesise aspirin and glyceryl trinitrate from appropriate starting material? 2+2+1=5
Give one use of aspirin.
 - (b) Name one central nervous system depressant. Describe its synthesis. Give one use of ibuprofen. 1+3+1=5
 - (c) Describe the fermentation procedure of ethyl alcohol and citric acid. 2½+2½=5
 - (d) Draw the general structure of penicillin. What are the properties of penicillin? 2+3=5

3. Answer any two questions from the following:

10×2=20

- (a) (i) Name one antiviral agent and an HIV-AIDS related drug. How will you synthesise them?
- (ii) What are the main classes of antibiotics?
- (iii) What do you mean by antipyretic agents? Give one example. $(2+2+2)+2+(1+1)=10$
- (b) (i) Draw the chemical structure of chloramphenicol. How does it work? What are the uses of this drug?
- (ii) What are the roles of Vitamin B₂ and Vitamin B₁₂ in human body? $(1+3+2)+(2+2)=10$
- (c) (i) Give a comprehensive account of Cephalosporins and provide appropriate examples.
- (ii) Describe the synthesis of chloramphenicol from *p*-nitroacetophenone.
- (iii) Which types of bacteria are killed by streptomycin? $(3+2)+4+1=10$
- (d) (i) Describe the synthesis of ibuprofen from isobutyl benzene.
- (ii) Why is ibuprofen called anti-inflammatory drug?
- (iii) Name any five potent central nervous system (CNS) stimulants and given their structures. $3+2+(2\frac{1}{2}+2\frac{1}{2})=10$
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