



IV Semester M.Sc. Examination, June 2017
(CBCS)
CHEMISTRY
C404 – OC : Medicinal Organic Chemistry

Time : 3 Hours

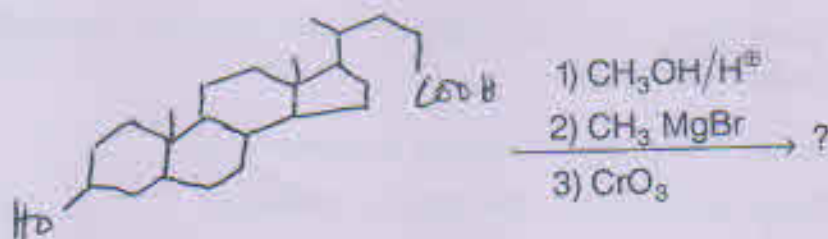
Max. Marks : 70

Instruction : Answer question 1 and any five of the remaining.

1. Answer any ten of the following :

(10×2=20)

a) Complete the equation and name the product :



- b) Draw the conformational structure of streptomycin.
- c) Highlight the structural differences between aureomycin and oxytetracycline.
- d) Sketch the mode of action of aspirin.
- e) What are mitotic inhibitors ? Illustrate with an example.
- f) How is 1-chloro-4-nitro-benzene converted into dapsone ?
- g) Name and draw the structure of a natural product which is an anti-carcinolytic agent.
- h) Give an example and mode of action of a cardiovascular drug with peripheral sympathetic functions.
- i) What are barbiturates ? Write their general structure and give their therapeutic capacity.
- j) Formulate the synthesis of cyclophosphamide.
- k) Sketch a synthesis of Diels hydrocarbon.
- l) What are local anti-infective agents ? Give their general mode of action.



2. a) Outline Clark's theory of drug receptor interactions. Mention the drawbacks of the theory.
b) Highlight the Barton reaction for the synthesis of androsterone.
c) Establish the size of ring A in steroids. (4+3+3=10)
3. a) Convert diosgenin into progesterone.
b) Sketch Torgon's total synthesis of estrone.
c) Write a note on oral contraceptives. (3+4+3=10)
4. a) Elucidate the structure of cephalosporin-c.
b) How is 6-aminopenicillanic acid converted into semi-synthetic penicillins? Illustrate with suitable examples. (6+4=10)
5. a) Discuss Woodward's structural elucidation of aureomycin.
b) Sketch the synthesis and highlight the mode of action of :
i) Ibuprofen
ii) Chlorpheniramine
iii) Metformin. (4+6=10)
6. a) Define anti-virals. Outline the synthesis and mode of action of azidothymidine (AZT).
b) Give the chemical synthesis of diltiazem and its mode of action.
c) Give an example of an anti-viral drug with adamantane backbone and comment on its mode of action. (3+4+3=10)
7. a) Give the synthesis and therapeutic capacities of
i) Sorbitrate
ii) Ethionamide
iii) Phenytoin.
b) Briefly discuss the SAR of psychotropic drugs. (6+4=10)
8. Write short notes on :
a) DOTS treatment of TB
b) Synthesis of ciprofloxacin.
c) Mode of action of phenylalanine containing antineoplastic drugs. (4+3+3=10)