



PG – 820

IV Semester M.Sc. Degree Examination, June 2016

(NS)

CHEMISTRY

C-404-OC : Medicinal Organic Chemistry

Time : 3 Hours

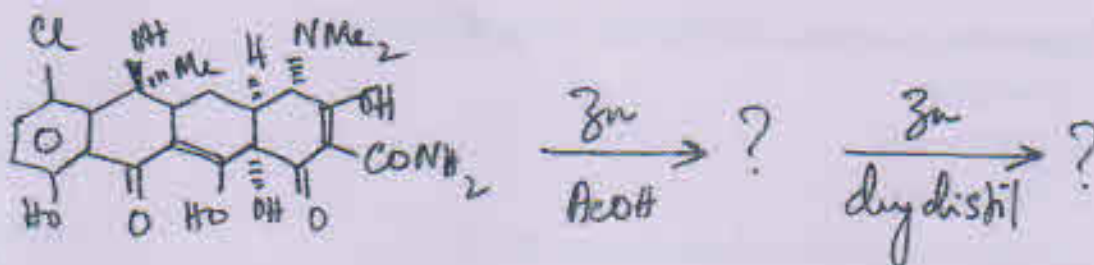
Max. Marks : 80

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

1. Answer any ten of the following :

(10×2=20)

- What are generics ? Give an example for a generic drug.
- Write one test to identify the presence of cholesterol in a mixture of natural extract.
- Complete the sequence :



- Sketch a synthesis of sorbitrate.
- Convert 1-chloro-4-nitrobenzene to dapsone.
- Differentiate  $LD_{50}$  from  $ED_{50}$ .
- Outline the mode of action of AZT.
- Write the conformational structure of streptomycin and indicate the components.
- Formulate a synthesis of buspirone.
- Indicate how cholesterol is a 'Janus-faced' molecule.
- Highlight the structural differences between gestogens and corticosteroids.
- What are MDR-microorganisms ? How do they form ?

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2. a) Outline the total synthesis of cholesterol.  
b) Sketch the synthesis and mode of action of (i) Ibuprofen (ii) Chlorpheniramine. (8+4=12)
3. a) Give an account of drug-receptor interactions.  
b) Describe the Barbier-Wieland degradation.  
c) Convert dihydrostreptomycin to streptomycin. (4+4+4=12)
4. a) Write the general structure of benzodiazepines. Sketch a synthesis of alprazolam and give its therapeutic category.  
b) Convert penicillin-G to amoxicillin.  
c) Discuss the rate theory of drug-receptor interactions. (4+4+4=12)
5. a) What are anti-neoplastic agents? Sketch the synthesis and mode of action of (i) cyclophosphamide (ii) 6-mercaptopurine.  
b) Outline the total stereospecific synthesis of griseofulvin. (6+6=12)
6. a) Sketch the synthesis and give the mode of action of:  
i) Atenolol  
ii) Ciglitazone  
iii) Phenytoin.  
b) Describe combination chemotherapy of TB. (3+3+3+3=12)
7. Write notes on:  
i) Anti-malarial drugs.  
ii) Hormone and natural-products in cancer chemotherapy.  
iii) Oral contraceptives.  
iv) QSAR. (3+3+3+3=12)