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**AI—240—2017**

**FACULTY OF SCIENCE**

**M.Sc. (Second Year) (Third Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2017**

**(CBCS Pattern)**

**ORGANIC CHEMISTRY**

**Paper XVI (CH-534/2A)**

**(Medicinal Chemistry—I)**

**(Friday, 17-11-2017)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt All questions.*

*(ii) Figures to the rights indicate full marks.*

1. Solve any *three* of the following : 15
  - (a) Discuss use of chaulmoogra and hydnocarpus oil for treatment of leprosy.
  - (b) What are prodrugs ? How are they designed ?
  - (c) Explain the role of hydrolysis reaction in drug metabolism.
  - (d) Explain the terms pharmacodynamics and pharmacophore.
  - (e) Write a note on inhibition of cell wall synthesis.
  
2. Attempt any *three* of the following : 15
  - (a) Discuss mode of action of chloramphenicol.
  - (b) Give the concept of biological assay.
  - (c) Discuss Hansch method used for QSAR study.
  - (d) Explain occupancy theory for drug activity.
  - (e) What are coagulants ? Offer synthesis of 4-hydroxy coumarin.
  
3. (a) Explain absorption and distribution of drugs with respect to pharmacokinetics. 8

*Or*

How are bioisosterism and Ring-chain transformation useful in structural modification for increasing potency and therapeutic index of drugs ?

P.T.O.

- (b) Discuss structure and activity of benzyl penicillin. 7
- Or*
- Discuss structure and activity of streptomycin and dihydro-streptomycin.
4. (a) Discuss elementary treatment of enzyme inhibition with respect to pharmacodynamics. 8
- Or*
- How is structure of protein determined ?
- (b) Discuss disorganization of the cytoplasmic membrane. 7
- Or*
- How will you identify active part in lead modification ?
5. (A) Select the correct alternative from the following : 5
- (i) Pyridine nucleus is present in .....
- (a) Ethionamide (b) Isoniazid
- (c) Thioacetazone (d) Both (a) and (b)
- (ii) In metabolism of drugs, tertiary aliphatic amines are oxidised to .....
- (a) Imine (b) N-oxides
- (c) Nitrate (d) Oxime
- (iii) Three dimensional structure of the active site of enzyme is often determined by .....
- (a) IR spectroscopy (b) NMR spectroscopy
- (c) X-ray crystallography (d) None of these
- (iv) ..... is an example of aliphatic diamine.
- (a) 4-amino salicylic acid (b) Thioacetazone
- (c) Isoniazid (d) Ethambutol

- (v) ..... reaction is involved in metabolic transformation of Aspirin to salicylic acid.
- (a) Oxidation (b) Hydrolysis  
(c) Reduction (d) Rearrangement
- (B) Write short notes on any *two* : 10
- (i) Chemotherapeutic agents  
(ii) Surface active agents  
(iii) Action of anticoagulant.