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**ST—374—2022**

**FACULTY OF SCIENCE**

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

**MAY/JUNE, 2022**

**(New/CBCS Pattern)**

**ORGANIC CHEMISTRY**

**Paper-XVIII**

**CH-534/2A**

**(Medicinal Chemistry)**

**(Tuesday, 5-7-2022)**

**Time : 2.00 p.m. to 5.45 p.m.**

*Time— 3.45 Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt all questions.*

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

1. Attempt any *three* of the following : 15

(a) Explain the terms :

(i) Metabolites

(ii) Chemotherapy

(b) Explain the reduction reactions in Drug Metabolism.

(c) What are Soft Drugs ? Give their properties.

(d) Write a note on inhibition of bacterial protein synthesis.

(e) Give synthesis and SAR of Acedapsone.

2. Attempt any *three* of the following : 15

(a) Explain SAR of Chloramphenicol.

P.T.O.

- (b) Write in brief about the lipophilicity in QSAR studies.
- (c) Explain Induced fit theory for Drug Activity.
- (d) Discuss SAR of Coumarin derivatives.
- (e) What is Immunological Assay ? Explain.
3. (a) Explain the structural modification w.r.t. homologation and chain branching to increase the potency of drugs. 8

Or

Explain the Drug Distribution and Drug Elimination w.r.t. pharmacokinetics.

- (b) Give synthesis and SAR of 4-aminosalicylic acid. 7

Or

What are  $\beta$ -Lactum antibiotics ? Give synthesis of :

- (i) Penicillin-V
- (ii) Penicillin-G.
4. (a) How structure of protein is determined ? 8

Or

Explain process of structure based drug design.

- (b) Explain mechanism of action of Antibiotics. 7

Or

What are lead compounds ? Explain about the Lead Discovery.

5. (A) Choose the *correct* option : 5

(i) Pyridine nucleus is present in .....

- (a) Ethionamide (b) Isoniazid
- (c) Thioacetazone (d) Both (a) and (b)

- (ii) During drug metabolism tert-aliphatic amine are oxidised to.....
- (a) Imine (b) N-oxide  
(c) Nitrate (d) Oxime
- (iii) Three-dimensional structure of active site of enzyme is determined by.....
- (a) IR spectroscopy (b) NMR spectroscopy  
(c) X-ray crystallography (d) Both (a) and (b)
- (iv) Rifampicin is ..... antibiotic.
- (a)  $\beta$ -Lactum (b) Glycoside  
(c) Macrocyclic (d) Amino acid
- (v) Metabolic transformation of Aspirin to Salicylic acid is..... reaction.
- (a) Oxidation (b) Reduction  
(c) Hydrolysis (d) Rearrangement

(B) Write short notes on any *two* :

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- (a) Chemotherapeutic agents  
(b) Biological Defences  
(c) Mechanism of Blood Clotting.