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AY—240—2018

FACULTY OF SCIENCE

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

MARCH/APRIL, 2018

(CBCS Pattern)

ORGANIC CHEMISTRY

Paper XVI (CH-534/2A)

(Medicinal Chemistry-I)

(Tuesday, 17-4-2018) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) Attempt *All* questions.

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

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

   (*a*) Write a note on interference in the bacterial nucleic acid synthesis.

   (*b*) What is the role of oxidation in drug metabolism ?

   (*c*) Give the concept of prodrug and soft drug. Give the classification of prodrugs.

   (*d*) Explain the terms : Pharmacodynamics and Pharmaceutics.

   (*e*) Offer the synthesis of cycloserine.

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

   (*a*) What are anticoagulants ? Give the synthesis of dicoumarol.

   (*b*) Discuss about rate theory of drug activity.

   (*c*) Offer the synthesis of chloramphenicol.

   (*d*) Write a note on electronic parameters used in QSAR study.

   (*e*) What is assay of drug ? Explain chemical assay.

3. (*a*) Explain elementary treatment of enzyme inhibition with respect to pharmacodynamics. 8

P.T.O.

Or

Discuss about use of homologation and bioisosterism in structure modification to increase potency of drugs.

(*b*) Discuss SAR of sulphones as antileprotic drugs. 7

Or

Discuss structure activity and mode of action of cephalosporin.

4. (*a*) Discuss Hammet equation and Hansch method used in QSAR study. 8

Or

Explain distribution and metabolism of drug with respect to pharmacokinetics.

(*b*) Discuss structure activity of tetracycline. 7

Or

How is functional group modification used in drug design and development ?

5. (A) Select the *correct* alternative from the following : 5

(*i*) Benzene and thiophene are examples of .....

(*a*) Isomers

(*b*) Isosters

(*c*) Bioisosters

(*d*) Stereoisomers

(*ii*) Cycloserine is an analog of .....

(*a*) Pyridine

(*b*) Pyrrole

(*c*) D-alanine

(*d*) Benzene

(*iii*) Increase in partition coefficient value of a drug ..... the drug activity.

(*a*) increases

(*b*) decreases

(*c*) no change

(*d*) none of the above

(*iv*) According to rate theory of drug activity, agonist have rate of .....

(*a*) association rate slow

(*b*) dissociation rate slow

(*c*) association and dissociation fast

(*d*) association and dissociation slow

(*v*) ..... will form reversible inhibition with adenosine deaminase.

(*a*) Aryl adenine

(*b*) Amines

(*c*) Thiophenol

(*d*) 9-benzyl adenine

(B) Write short notes on (any *two*) : 10

(*i*) Vitamin K-analogues

(*ii*) Hydrolysis in drug metabolism

(*iii*) Chemical defences.