

Question Paper

Exam Date & Time: 12-Jun-2019 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester IV - End Semester Examination JUNE 2019

PCH-BP 402T: Medicinal Chemistry I

Date: 12 June 2019

Medicinal Chemistry-I [PCH-BP402T]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

Instructions: Answer ALL questions.

1) Phenox benzamine belongs to the following class of drugs (1)

Alpha haloalkylamine

Beta haloalkylamine

Beta halo alkoxy amine

Alpha halo alkoxy amine

2) The following drug is used in the management of Raynaud's Syndrome (1)

Tolazoline

Salbutamol

Atenolol

Phenylephrine

3) Which of the following groups when introduced on pyridine Nitrogen of Morphine increases the activity? (1)

N-Cyclopropyl

N-Phenyl

N-Phenylethyl

N-ethyl

4) Which of the following moiety is essential for the activity of Anthranilic acid derivatives (1)

-NH

-CH₂

-O-

-SO₂

5) Removal of ring D and the oxygen bridge of Morphine gave following series of compounds (1)

Morphinans

Phenylpropylamines

Benzomorphans

Narcotic
antagonists

6) Half-life of a drug depends upon which of the following property of a drug molecule? (1)

Surface activity

Partition coefficient

Protein binding

Ionisation

7) The IUPAC name 2-chloro-1,1,2-trifluoroethyl-difluoromethyl ether is (1)

Enflurane

Isoflurane

Sevoflurane

Halothane

8) Which of the following reactions is not a Phase-I metabolic transformation (1)

Reduction to ketones

Monoamine oxidation

Conjugation of alcohols

Ester hydrolysis

9) The carbamoyl group of carbachol makes it a potent cholinergic agonist why? (1)

It acts as a metabolically susceptible group

It interacts with a hydrophilic pocket in the binding site.

It acts as a steric shield to protect the ester group.

It protects the neighbouring ester group by means of an electronic effect

10) Which of the following reversible cholinesterase inhibitor is used for the treatment of Alzheimer's disease (1)

Physostigmine

Pyridostigmine

Endrophonium chloride

Tacrine

11) Which of the following drug/s is used in the treatment of organophosphorus poisoning (1)

Pralidoxime

Atropine

Malathion

Rivastigmine

12) What structural feature of pralidoxime is most critical for acetylcholinesterase reactivation? (1)

Aromaticity of Pyridine ring

Electrophilicity of positively charged nitrogen

Nucleophilicity of hydroxylimino group

Aromaticity of pyrimidine

13) Tetrahydrofuran ring is present in which of the following drug

(1)

Pilocarpine

Neostigmine

Methacholine.

Bethanechol

The basic structure of Loxapine is

(1)

Dibenzo
diazepine

Dibenzo oxapine

Dibenzo azepine

carbamazepine

15) One of the long acting Barbiturates is:

(1)

Mephobarbital

Secobarbital

Pentobarbital

Amobarbital

6) Adrenaline is an example of

(1)

Alpha adrenergic agonist

Alpha and Beta adrenergic agonist

Beta adrenergic agonist

Beta adrenergic antagonist

The structural pre requisite for the beta -2 selectivity for adrenergic agonist resides in

(1)

Iso propyl group

Ethyl group

Methyl group

Tert. butyl
group

The drug which is used for absence seizure is

(1)

Phenobarbital

Carbamazepine

Sodium
valproate

Phenytoin

Example for a phenothiazine derivative

(1)

Risperidone

Clozapine

Haloperidol

Promazine

Hypnotic drugs are used to treat

(1)

Psychosis

Epilepsy

Sleep
disorders

Dementia

II Long Answers

Answer all the questions.

- 1) 1A Explain the importance of any three physicochemical properties in relation to the drug action. 5M (10)
1B Classify general anesthetics with one example and its structure under each class. Outline the synthesis of Ketamine HCl. 5M
- 2) What are Adrenergic agents? Classify them by giving one structure under each class. Explain the bio synthesis of catecholamines. Outline the synthesis of propranolol (10)

III Short Answers

Answer all the questions.

- 3) Classify anticholinergics giving one structure from each class. (5)
- 4) Give the synthesis of carbachol and dicyclomine. (5)
- 5) Discuss the SAR cholinergic blockers. (5)
- 6) Classify phenothiazine derivatives as antipsychotic drugs giving one structure from each class. Discuss the SAR of benzodiazepines 2+3 =5 M (5)
- 7) Write the structure and uses of (5)
a) Diazepam b) Phenobarbital c) Phenytoin d) Meprobamate.
- 8) Classify opioid analgesics giving examples. Write the structure of Morphine. (5)
- 9) Give the synthesis of Diclofenac and Mefenamic acid. Write the IUPAC nomenclature of these two drugs. What are the uses of salicylates? (5)

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