

Question Paper

Date & Time: 02-May-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester IV - End Semester Examination MAY 2019

Exam Date: 02-05-2019

Medicinal Chemistry-I [PCH-BP402T]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

1) Diazepam gets metabolized into hydroxyl diazepam and this is an example of: (1)

Oxidation at allylic carbon atom

Oxidation at the carbon alpha to carbonyl imino group

Oxidation at benzylic carbon atom

Aromatic and side chain hydroxylation

2) 85% of drugs are ionized at which of the following pH given: (1)

2-5

7-12

1.5-8

neutral

3) Which of the following is not an inhalation anesthetic? (1)

Methoxyflurane

Chloroform

Barbiturates

Nitrous oxide

4) Which of the following is an anticholinergic bronchodilator? (1)

Cyclopentolate

Ipratropium

Glycopyrrolate

All of the above

5) What is the role of histidine residue in the active site of acetylcholinesterase enzyme? (1)

Acts as nucleophile

Forms a hydrogen bond with acetylcholine

Acts as an acid base catalyst

None of the above

6) Which is one wrong statement about bethanechol? (1)

It evidently possesses prominent and apparently stronger muscarinic activity for the GI-tract and the urinary tracts in comparison to the cardiovascular system

It has a beta methyl substitution

It is more muscarinic specific

Its hydrolytic stability of less than methacholine

7) What structural feature of pyridostigmine is mainly responsible for delaying the hydrolysis of acetylcholine by acetylcholinesterase enzyme? (1)

Pyrrole ring

Methyl carbamate.

Indolopyrrole ring

N-methyl group

8) Ing's rule of five is associated with (1)

Cholinergic agonists

Anticholinesterase drugs

Sympatholytic drugs

Anticholinergics

9) -----is partly responsible for the gastric toxicity associated with the administration of NSAIDs (1)

Benzene ring

Carboxylic acid group (-COOH)

Benzene ring and other carbon atoms

None

10) Indomethacin contains following ring system (1)

Pyridine

Pyrazine

Pyrrole

Piperidine

11) Replacement of N-methyl group of Morphine with N-allyl group results in (1)

Increase in analgesic activity

Drug acting as narcotic antagonist

Increase in antitussive property

Increase in addiction property

12) Indirectly acting adrenergic agents are (1)

Non- catecholamines

Catecholamines

Noncatecholamines and have methyl group attached to alpha carbon atom on ethyl amine side chain

Catecholamines and have methyl group attached to alpha carbon atom on ethyl amine side chain

Phentolamine is an example of (1)

Selective alpha receptor antagonist

Non selective alpha adrenergic antagonist

Selective Beta receptor antagonist

Non selective Beta receptor antagonist

4) Dichloro isoproterenol is an example of (1)

Adrenergic agonist

Adrenergic antagonist

Cholinergic antagonist

Partial adrenergic agonist

15) Pseudo ephedrine has the following configurations (1)

Erythro racemate

Threo racemate

Meso form

Geometrical isomeric form

16) The basic pre requisite for directly acting adrenergic agent is presence of (1)

3, 4 dihydroxy phenyl ethyl amine

3 hydroxy phenyl ethyl amine

3,5 dihydroxy phenyl ethyl amine

4 hydroxy phenyl ethyl amine.

17) Clonidine belongs to (1)

2aryl imidazole class

3aryl imidazole class

2 aryl imidazoline class

3 aryl imidazoline class

8) 2,4,6 trioxo hexahydro pyrimidine is (1)

Phenobarbital

Barbituric acid

Barbitone

Pentobarbital

9) The drug of choice for partial seizure is (1)

Diazepam

Carbamazepine

Sodium valproate

Ethosuximide

20) Example for a piperazine derivative

(1)

Fluphenazine

Carbamazepine

Thioridazine

Ethosuximide

II Long Answers

Answer all the questions.

1) 1A Classify beta adrenergic receptor antagonist. Write the structure of one non selective and one selective beta adrenergic receptor antagonist. Explain the biosynthesis of catecholamines. 2+1+2=5 Marks (10)

1B Outline the method of synthesis of propranolol and salbutamol 5 Marks

2) 2A Discuss the SAR, MOA and use of barbiturates 5 Marks (10)

2B. Write the structure and uses of 5 Marks

a) Triflupromazine

b) Trimethadone

c) Ethosuximide

d)

Chlorpromazine

III Short Answers

Answer all the questions.

1) 3A Enumerate the factors effecting drug metabolism (5)

3B List out the various physicochemical properties in drug action and explain any two of them. 1+4=5 Marks

2) Explain the mechanism of action of general anesthetics. Enumerate the characteristics of an ideal general anesthetic. Outline the synthesis of Halothane. (5)

3) Discuss how aryl carbamates act as reversible cholinesterase inhibitors. Outline the synthesis of neostigmine. (5)

4) 6A. What is organophosphorus poisoning? How pralidoxime act as an antidote? (5)

6B. Outline the synthesis of dicyclomine 3+2= 5 Marks

i) Outline the method of synthesis of diazepam and phenytoin. (5)

) Explain the chemistry of Narcotic antagonists giving examples. What are 4-phenylpiperidine derivatives of Morphine? Give the structural feature and give the synthesis of any one drug (5)

Write the synthesis of any one drug belonging to the class of Anthranilic acid derivatives. What is the mechanism of action of NSAIDs. (5)

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