

Exam Date &amp; Time: 20-Jul-2022 (10:00 AM - 01:00 PM)



# MANIPAL ACADEMY OF HIGHER EDUCATION

## Medicinal Chemistry-I [PCH-BP402T]

Marks: 75

Duration: 180 mins.

### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) What structural feature of methacholine makes it more hydrolytically stable than acetylcholine

1) presence of carbamoyl group	2) Presence of $\beta$ -methyl and carbamoyl group	3) Presence of $\beta$ -methyl group	4) Presence of ester linkage	(1)
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- 2) Which of the following drug is used in the treatment of urinary incontinence

1) Atropine	2) Scopolamine	3) Cyclopentolate	4) Methantheline Bromide	(1)
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- 3) Which of the following class of opioids are obtained by removal of Ring-B, C and D of morphine

1) Morphinan	2) Benzomorphan	3) 4-phenyl Piperidine	4) Phenylpropyl amine	(1)
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- 4) Identify the number of asymmetric carbons in morphine

1) Two	2) Four	3) One	4) Five	(1)
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- 5) Why barbiturates are acidic in nature

1) Presence of hexahydropyrimidine ring system	2) As it a diacyl urea derivatives	3) Due to lactim-lactam tautomerization	4) Due to alkyl substituents on 5th carbon	(1)
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- 6) Which among the following is not a metabolite of chlordiazepoxide

1) Nordiazepam	2) Lorazepam	3) Oxazepam	4) Demoxepam	(1)
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- 7) Introduction of a polar group in to the aromatic group at C-5 of barbiturates increases the duration of action Why? (1)

1)	Increases the binding affinity to the GABA A receptor	2)	Decrease the lipophilicity	3)	Increases the lipid solubility	4)	Keep the drug in correct conformation
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8) Which of the following opioid drug is used in the treatment of diarrhoea

1)	Codeine	2)	Meperidine	3)	Diphenoxylate	4)	Pentazocine
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(1)

9) Which among the following drug has the IUPAC name 2-(2-Chlorophenyl)-2-(methylamino)cyclohexanone

1)	Ketamine	2)	Dicyclomine	3)	Fentanyl	4)	None of the above
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(1)

10) Which of the following drug is a aryl acetic acid derivative

1)	Indomethacin	2)	Ibuprofen	3)	Acceclofenac	4)	Mefenamic acid
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(1)

11) The compound which is not conjugated by methylation is

1)	aspirin	2)	nicotinamide	3)	isoniazid	4)	estrogen
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(1)

12) The drug which act by blocking dopamine receptor especially D2 receptor is

1)	haloperidol	2)	clozapine	3)	prochlorperazine maleate	4)	loxapine
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(1)

13) Isosterism is the process of

1)	Replacement similar group	2)	Replacement similar valence group	3)	Replacement similar mass number group	4)	Addition of group having different mass number
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(1)

14) Which of the following is the selective antagonist of alpha1 receptors

1)	Prazosin	2)	Clonidine	3)	Adrenaline	4)	Yohimbaine
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(1)

15) Metoprolol is a selective -----antagonist

1)	Alpha1	2)	Alpha2	3)	Beta 1	4)	Beta2
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(1)

16) Dimercaprol is a chelating agent used for the treatment of

(1)

1)	Arsenic poisoning	2)	Iron poisoning	3)	Lead poisoning	4)	Vanadium poisoning
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17) The most important physicochemical properties affecting the drug action

1)	Acid base properties	2)	Chelation	3)	Hydrogen bonding	4)	Partition coefficient	(1)
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18) Benorylate is hydrolysed to

1)	Paracetamol and diclofenac	2)	Paracetamol and morphine	3)	Paracetamol and aspirin	4)	Aspirin and diclofenac	(1)
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19) Which of the following substance is the first precursor of Adrenaline?

1)	DOPA	2)	Tyrosine	3)	Dopamine	4)	Nor adrenaline	(1)
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20) Which drug used in allergic reaction

1)	Naphazoline	2)	Isopurine	3)	Dopamine	4)	Ephedrine	(1)
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## II Long Answers

Answer all the questions.

- 21) Classify anticholinergics giving one structure from each class (5)
- A)
- B) Discuss the SAR of parasympathomimetic drugs (5)
- 22) Define anticonvulsant drugs. Classify them giving one structure from each class and discuss the SAR & MOA of hydantoins. (7)
- A)
- B) Outline the method of synthesis of ethosuximide (3)

## III Short Answers

Answer all the questions.

- 23) Write the common structural features or SAR of NSAIDs (5)
- 24) Discuss the SAR of barbiturates as sedative and hypnotics (5)
- 25) Outline the synthesis of mepclidine and procyclidine (5)
- 26) Outline the synthesis of ketamine (2.5)
- A)
- B) Briefly discuss the SAR of Sympathomimetic agents (2.5)

- 27) Write the structure and uses of the following.  
a) Salbutamol b) Tolazoline c) Chlorpromazine d) Loxapine (5)
- 28) Explain phase II reactions in drug metabolism (5)
- 29) Discuss in detail about the following physicochemical properties  
A) Hydrogen bonding B) Ionisation (5)

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