08/05/2025
S.Y. B Pharm
Sem-IV
Semester Exam

Duration: 3 hours

Total marks: 75M

N.B .: 1. All questions are compulsory.
2. Figures to the right indicate full marks.

Q.I Choose the appropriate option for following multiple choice-based questions. 20M

Each question carries one mark.

1. Phase I reactions are also called as……..
   a. Conjugation
   b. Functionalization
   c. Glucuronidation
   d. Methylation

2. Which of the following drug containing imide exhibits GABA agonistic activity?
   a. Triclofos
   b. Zolpidem
   c. Ethchlorvyonol
   d. Glutethimide

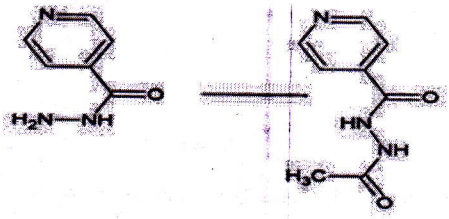
3. Which of the following is a non-catecholamine sympathomimetic drug?
   a. Adrenaline
   b. Ephedrine
   c. Dopamine
   d. Isoprenaline

4. Removal of N-methyl group from Ketamine produces……
   a. Methanamine
   b. Enamine
   c. Nor ketamine
   d. Desnamine

5. Which of the following is not a direct acting parasympathomimetic agent?
   a. Carbachol
   b. Pilocarpine
   c. Bethanechol
   d. Physostigmine

6. Thioridazine has …… side chain attached to Phenothiazine moiety.
   a. Propyl dialkylamino
   b. Propyl piperazine side chain
   c. Alkyl piperidyl side chain
   d. Hydrocarbon

7. Identify the metabolic pathway involved in the following conversion



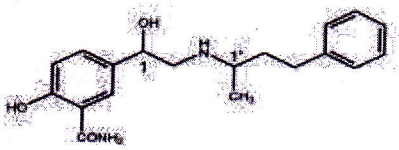
a. N-acetylation
b. Methylation
c. Oxidation
d. Hydrolysis

8. Which of the following act by blocking Sodium Channel?
a. Phenytoin
b. Phensuximide
c. Trimethadione
d. BZD

9. Which of the following is a μ antagonist?
a. Meperidine
b. Naloxone
c. Methadone
d. Codeine

10. Indomethacin, a NSAID is ..... derivative.
a. Aryl acetic acid
b. Aryl anthranilic acid
c. Oxicam
d. Salicylic acid

11. Which of the following isomers of Labetalol exhibit mixed a β-antagonistic activity?
a. 1S 1'R
b. 1S 1'S
c. 1R 1'S
d. 1R 1'R



12. Which of the following NSAIDS can inhibit platelet aggregation?
a. Phenylbutazone
b. Sulindac
c. Mefenamic acid
d. Sodium salicylate

13. Analgesic activity of morphine is associated with ..... isomer
a. Dextro rotatory
b. Laevorotatory
c. Racemic
d. None of above

14. All of the following are the structural features of agonist at μ receptor **EXCEPT___**
    a. Aromatic ring A
    b. Basic N protonated at physiological PH
    c. 3- Hydroxy
    d. N- allyl

15. Which of the following is an ultra-short-acting barbiturate used as general anaesthetic?
    a. Amobarbital
    b. Thiopental
    c. Phenobarbital
    d. Pentobarbital

16. Maximum potency is obtained in Homatropine when the distance between ring and substituted carbons is……
    a. 3C
    b. 2C
    c. 6C
    d. 1C

17. Codeine is ……morphine and has ……properties.
    a. 3- methoxy, antitussive
    b. 6-methoxy, analgesic
    c. 3,6- dimethoxy, antitussive
    d. 3- methoxy, analgesic.

18. Which of the following is an atypical antipsychotic belonging to be dibenzodiazepine class?
    a. Chlorprothixene
    b. Loxapine
    c. Chlorpromazine
    d. Clozapine

19. Identify the **INCORRECT** pair
    a. Salicylates: Sodium salicylate
    b. Oxicam: Piroxicam
    c. Anthranilic acid derivative: Meclofenamate
    d. Aryl propionic acid derivative: Phenacetin

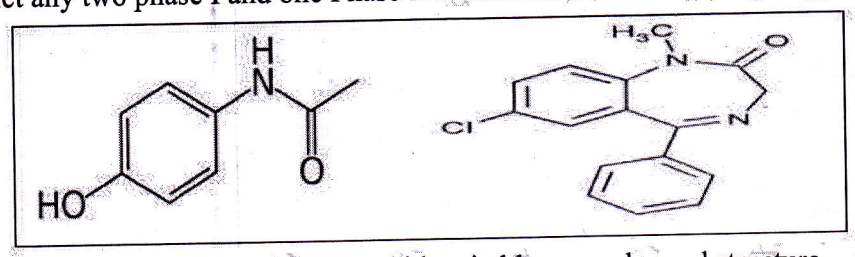
20. Ionized form helps drug to ……..
    a. Cross the physiological barrier
    b. Interact with the receptor
    c. Reach to the site of action
    d. Both b and c

Q.II Answer **<u>any two</u>** of the following three questions. 20M

A [i] What are Parasympatholytic agents? Classify them based on chemical class with suitable examples. Draw one structure from each class. 5M

[ii] Give mechanism of action, therapeutic uses and outline the synthesis of Carbachol along with reaction conditions and necessary reagents. 5M

B [i]Discuss Bioisosterism, classify it. Give an account on its applications. 5M
[ii]Predict any two phase I and one Phase II metabolite of the following 5M



C [i] Discuss SAR of μ-receptor agonists with suitable examples and structure. 5M
[ii] Give name, draw structure, predict the metabolism for Inhalation anaesthetics. 3M
[iii] Illustrate the mechanism of action of opioid analgesics. 2M

Q.III Answer **any seven** of the following nine questions. **35M**

A Discuss the mechanism of action and SAR (ureide class) of anticonvulsant drugs. 5M

B Outline the synthetic scheme of Phenylephrine, indicating the reagents used. Draw the structures of β_2 adrenergic agonists. 5M

C Explain the factors affecting drug metabolism. 5M

D Draw the structures and write chemical class of given sympatholytic agents. 5M
Pentolamine, Carvedilol, Prazosin, Atenolol, Tolazoline

E Elaborate on phenothiazine and ring analogues of phenothiazine as antipsychotics. 5M

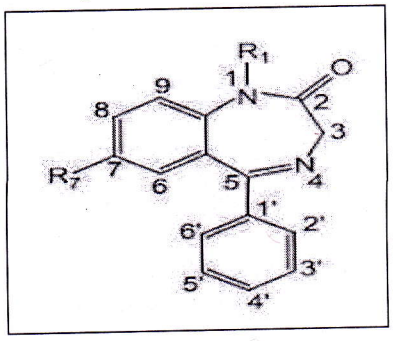
F [i] Outline the synthetic route and give necessary reagents and reaction conditions required for Methadone hydrochloride. 3M
[ii] Write the name and structures of opioid antagonists. 2M

G Give chemical classification of NSAIDS with one example of each class (draw structures) 5M

H Match the following 5M

Drug	Column A	Column B
1. Pilocarpine	a) Directly acting cholinergic agent	i)Trimethyl benzene ammonium chloride
2. Neostigmine	b) Diagnostic agent in myasthenia gravis	ii)Ethyl trimethyl ammonium
3. Pralidoxime	c) Cholinomimetic alkaloid	iii)Imidazole ring
4. Acetylcholine	d) Irreversible cholinesterase inhibitor	iv)Pyridine ring
5. Edrophonium	e) Treatment of myasthenia gravis	v) Phenol ring

I Predict the effect of following changes in the given benzodiazepine nucleus. Support answer giving suitable examples wherever necessary 5M
[i] Substitution at position 6,8,9
[ii] Saturation of double bond at 4,5
[iii] Substitution of electron withdrawing group at C_7
[iv] Presence of 3-hydroxyl group
[v] Fusion of another heterocyclic ring to BZD nucleus at position 1,2



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