M Pharm Sem I (Semester) 4/1/2024

Time: 3 Hours Total Marks: (75) MPL 102T

Q I. Choose the ONE best answer and write it down **20 Marks**

1. Which of the following is a common side effect associated with the use of antipsychotic medications?
A. Hypertension
B. Extrapyramidal effects
C. Increased libido
D. Diarrhoea

2. What happens when an inverse agonist binds to a constitutively active receptor?
A. It increases the receptor's basal activity
B. It has no effect on the receptor
C. It decreases the receptor's basal activity
D. It switches the receptor to an inactive state

3. Which of the following is a non-depolarizing neuromuscular blocking agent used in surgical procedures?
A. Pancuronium
B. Succinylcholine
C. Neostigmine
D. Bethanechol

4. What is the primary use of edrophonium, a short-acting choline esterase inhibitor?
A. In anaphylaxis treatment
B. In myasthenia gravis diagnosis
C. In asthma management
D. Glaucoma treatment

5. Which of the following is a potential advantage of using beta-1 selective blockers (beta-1 antagonists) over non-selective beta-blockers?
A. Lower risk of bradycardia
B. Enhanced bronchodilation
C. Reduced risk of peripheral vasoconstriction
D. Greater antiarrhythmic effects

6. Which opioid is often used in the treatment of opioid dependence due to its long duration of action and slow onset of withdrawal symptoms?
A. Fentanyl
B. Buprenorphine
C. Methadone
D. Tramadol

7. What is the primary function of protein binding?
A. To increase drug absorption
B. To enhance drug metabolism
C. To prolong drug half-life
D. To facilitate drug excretion

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8. Which class of drugs is commonly prescribed for the treatment of depression that acts by increasing the levels of 5-HT and norepinephrine in the brain?
A. Benzodiazepines
B. ACE inhibitors
C. Selective serotonin reuptake inhibitors
D. Calcium channel blockers

9. Which of the following antihypertensive agents is a direct renin inhibitor?
A. Enalapril
B. Losartan
C. Aliskiren
D. Amlodipine

10. Which anti-ischemic drug primarily works by inhibiting platelet aggregation and is commonly used in secondary prevention after myocardial infarction?
A. Clopidogrel
B. Nitroglycerin
C. Isosorbide dinitrate
D. Diltiazem

11. What is the primary mechanism of action of indirect-acting sympathomimetics?
A. Stimulation of adrenergic receptors
B. Inhibition of norepinephrine release
C. Blockade of adrenergic receptors
D. Inhibition of monoamine oxidase (MAO)

12. Ezetimibe primarily acts by:
A. Inhibiting HMG-CoA reductase
B. Increasing HDL cholesterol
C. Inhibiting cholesterol absorption in the small intestine
D. Inhibiting lipoprotein lipase

13. Direct oral anticoagulants (DOACs) exert their anticoagulant effect by inhibiting which of the following?
A. Vitamin K epoxide reductase
B. Thrombin
C. Factor Xa
D. Platelet aggregation

14. Which drug is commonly used to reverse opioid overdose by binding to opioid receptors and reversing the effects of opioids?
A. Haloperidol
B. Diazepam
C. Disulfiram
D. Naloxone

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15. An antihistaminic drug with appreciable anti-serotonin action is:
A. Promethazine
B. Cyproheptadine
C. Fexofenadine
D. Methysergide

16. What structural feature is common among ligand-gated ion channels and receptor tyrosine kinases?
A. Seven transmembrane domains
B. G protein coupling
C. Intracellular enzymatic activity
D. Extracellular ligand-binding domain

17. Kinins are involved in:
A. Vasoconstriction
B. Vasodilation
C. Platelet aggregation
D. Allergy initiation

18. What is the primary mechanism of action of local anesthetics?
A. Inhibition of acetylcholine esterase
B. Enhancement of GABAergic activity
C. Blockade of sodium channels
D. Inhibition of beta-adrenergic receptors

19. What is the primary therapeutic use of 5-HT3 receptor antagonists?
A. Migraine treatment
B. Gastrointestinal prokinetic effects
C. Treatment of insomnia
D. Prevention of chemotherapy-induced nausea and vomiting

20. A high volume of distribution suggests:
A. Limited drug absorption
B. Significant binding of the drug to tissues or cellular components
C. Rapid drug elimination
D. Low lipid solubility of the drug

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Q. II. Answer any TWO of the following: 20 Marks

1. Classify receptor transduction mechanisms. Give an account of different types of enzyme-linked receptors with their mechanisms of transduction and examples.
2. Classify antiepileptic drugs with examples. Write a short note on barbiturates and hydantoins as antiepileptic drugs with their mechanism of action and applications.
3. Classify antihypertensive drugs with examples. Give an account of angiotensin receptor blockers and beta blockers.

Q. III. Answer any SEVEN of the following questions: 35 Marks

1. Explain in brief the dynamics of biotransformation.
2. Classify NSAIDs with examples. Discuss the mechanism of action and the common side effects of NSAID use.
3. Classify H1 antagonists with examples. Give various uses of H1 antihistaminic drugs.
4. Classify sympathomimetics with examples. Add a short note on alpha-2 agonists.
5. Classify local anesthetic drugs with examples. Elaborate on the amide class with newer advances.
6. Classify anticoagulants with examples. Write a brief note on direct thrombin inhibitors.
7. Classify calcium channel blockers with examples. Give their mechanism of action and uses.
8. Classify opioid drugs with examples, giving a brief description of the various types of synthetic opioids.
9. Classify parasympatholytic drugs with examples. Give an account of the nondepolarizing neuromuscular blockers.

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