 F. Y. M. Pha 09/04/25 Sem- I

Time: 3 Hours **Total Marks: (75)**

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

1. In presence of a competitive antagonist:
a. The maximum response can be achieved by increasing the concentration of the agonist
b. The maximum response of agonist can never be achieved
c. The maximum response can be achieved only if the antagonist is having intrinsic activity
d. The maximum response can be achieved using inverse agonist

2 An example of a receptor which has enzymatic property is:
a. Progesterone receptor
b. Insulin receptor
c. Thyroxine receptor
d. Glucagon receptor

3. The elimination rate constant (k) in a one-compartment model represents:
a. The time required for the drug to reach half of its initial concentration
b. The rate at which the drug is absorbed
c. The rate of drug elimination from the body
d. The concentration of drug in the liver

4. The quantitative dose response relationship is also termed as:
a All or none response
b Quantal response
c Therapeutic response
d Graded response

5 Adrenaline fails to produce an effect when administered orally because it is:
a Completely metabolized in the intestinal mucosa and liver before reaching systemic circulation
b Destroyed by gastric acid
c Not absorbed from the gastrointestinal tract
d Taken up by adrenergic nerve endings of the intestinal wall, liver and lungs

6 Select the correct statement for Isoproterenol:
a It is a beta1-selective agonist
b It is a beta2-selective agonist
c It is both an alpha- and beta-receptor agonist
d It is a nonselective beta receptor agonist

7. Dry mouth is commonly associated with the use of which class of drugs?
a. Antibiotics
b. Anticholinergics (cholinolytics)
c. Diuretics
d Antidepressants

8 Depolarizing blockers act on:
a Muscle endplate
b Motor nerve ending
c Spinal internuncial neurone
d Sodium channels in the muscle fibre

9 The MAO-B inhibitor useful in treatment of Parkinson's disease is:
a Levodopa
b Rasagiline
c Tolcapone
d Ropinirole

10 A melatonin receptor agonist introduced as new class for insomnia is:
a Etizolam
b Zolpidem
c Ramelteon
d Flumazenil

11 The antiepileptic drug lamotrigine works by:
a. Inhibiting sodium and calcium channels
b. Enhancing GABAergic transmission
c. Inhibiting glutamate release
d Blocking dopamine receptors

12. 12. Which of the following opioid drugs is most commonly used in the treatment of opioi overdose?
a. Tramadol
b Methadone
c Hydromorphone
d Naloxone

13. Which of the following is a direct thrombin inhibitor used in the treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE)?
a. Heparin
b. Warfarin
c. Dabigatran
d. Apixaban

14. Which class of drugs is most commonly used to arrest or reverse the progression of congestive heart failure?
a. Beta-blockers
b. Diuretics
c Vasodilators
d Neprilysin inhibitors

15 A pure class III antiarrhythmic drug is:
a Dofetilide
b Amiodarone
c Sotalol
d Quinidine

16. The primary mechanism of action of fibrates is to:
a. Inhibit cholesterol absorption in the intestines
b. Activate the PPAR-α receptor to increase lipoprotein lipase activity
c. Inhibit HMG-CoA reductase
d. Inhibit the production of LDL cholesterol in the liver

17 A 5HT antagonist with additional antihistaminic and anticholinergic property is:
a Mosapride
b Sumatriptan
c Ondansetron
d Cyproheptadine

18. An advantage of second-generation antihistamines over first-generation antihistamines is:
a. They cause more sedation and drowsiness
b. They have a longer duration of action
c. They have fewer anticholinergic side effects
d. They are less effective in treating allergic reactions

19 The primary therapeutic use of 5HT3 antagonists is as:
a Antimigraine drug
b Antiemetic drug
c Prokinetic drug
d Antidepressant drug

20 H_2 blockers are useful in the treatment of:
a Vertigo
b Motion sickness
c Allergic rhinitis
d Gastroesophageal reflux

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

1 Classify parasympathomimetic drugs and discuss the mechanism of action, therapeutic uses and potential poisoning associated with anticholinesterase agents.

2 Classify antiepileptics. Explain the mechanism of action and therapeutic uses of benzodiazepines in epilepsy. Add a note on advances in antiepileptics.

3 Classify antihypertensives based on the mechanism of action. Give the advantage of angiotensin receptor blockers over ACE inhibitors. Comment if a pregnant lady with hypertension can be treated with ACE inhibitors with justification.

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

1 Write a short note on 5HT antagonists and their clinical uses.

2. Compare and contrast the use of SSRIs and SNRIs in the treatment of depression.

3 Briefly describe the effector pathways of the G protein-coupled receptor.

4. Classify receptors according to their transduction pathways. Discuss in detail the mechanism of transduction of the JAK-STAT receptor.

5. Classify antihyperlipidemic drugs with examples. Write a note on advances in antihyperlipidemic drugs.

6 Explain the therapeutic roles of drugs modulating histaminic receptors.

7 Classify antianginal drugs with examples. Elaborate on nitrates as antianginal drugs.

8 Classify opioid analgesics. Comment on synthetic opioids.

9. Classify alpha-blockers with examples. Add a note on their therapeutic uses and adverse effects.

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