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Hatkhowapara, Azara, Ghy-17

2024

B.Pharm. 4th Semester End-Term Examination

MEDICINAL CHEMISTRY – I

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following MCQs : (20 × 1 = 20)

- (i) _____ is the enzyme involved in Phase II metabolism
- (a) MAO
 - (b) N-acetyl tranferase
 - (c) Methytransferases
 - (d) Both (a) and (c)
- (ii) Which of the following anticholinergic drug is used in COPD?
- (a) Telenzepine
 - (b) Ipratropium bromide
 - (c) Dicyclomine
 - (d) All of the above
- (iii) Which of the following chemical agent/agents inhibit the release of acetylcholine into synapse?
- (a) Cocaine
 - (b) Tricyclic antidepressants
 - (c) Vesamicol
 - (d) Hemicholinium

[Turn over

- (iv) Which of the following is the starting material for the synthesis of Phenylephrine?
- (a) Chloroacetylphenol (b) α -naphthol
(c) Malonic acid (d) Epichlorhydrin
- (v) _____ alkaloids are used in the treatment of migraine.
- (a) Indole (b) Ergot
(c) Quinoline (d) Tropane
- (vi) The drug of choice used in belladonna poisoning is _____.
- (a) Physostigmine (b) Pethidine
(c) Oxybutynin (d) Bethacholine
- (vii) Mixed $\alpha + \beta$ blocker is _____.
- (a) Labetalol (b) Celiprolol
(c) Esmolol (d) Atenolol
- (viii) Administration of cholinomimetics in the heart causes.
- (a) Angina pectoris
(b) Bradychardia
(c) Tachycardia
(d) Congestive heart failure
- (ix) Benzodiazepines binding site on GABA receptors is on _____ subunit
- (a) α (b) β
(c) μ (d) Both (a) and (b)
- (x) Barbiturate preferred in the induction of general anaesthesia is _____.
- (a) Amylobarbitone
(b) Butobarbitone
(c) Thiopentone
(d) Pentobarbitone
- (xi) Which of the following is not metabolized by liver?
- (a) Oxazepam (b) Diazepam
(c) Flurazepam (d) Nitrazepam
- (xii) Which of the following anticholinergics is used as preanesthetic medication?
- (a) Glycopyrrolate
(b) Hyoscine
(c) Flavoxate
(d) Darifenacin

(xiii) Atypical antipsychotics blocks _____ receptor

- (a) D₂ (b) 5HT_{2A}
- (c) D₁ (d) 5HT_{1A}

(xiv) Xerostomia is defined as _____

- (a) the sensation of oral dryness
- (b) one type of anaemia
- (c) lack of sleep
- (d) none of the above

(xv) Lithium directly affects which of the following ion

- (a) Sodium (b) Magnesium
- (c) Potassium (d) Calcium

(xvi) Which of the following is the drug of choice for atonic seizures?

- (a) Valproate
- (b) Ethosuccimide
- (c) Carbamazepine
- (d) Phenytoin

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(xvii) _____ is an anti-epileptic drug that possesses carbonic anhydrase inhibition

- (a) Topiramate
- (b) Vigabatrin
- (c) Zonisamide
- (d) Carbamazepine

(xviii) Naltrexone is used for which of the following poisoning

- (a) Cannabis (b) Heroin
- (c) Atropine (d) Diazepam

(xix) NSAIDs that is available as eye drops is _____

- (a) Indomethacin (b) Ketorolac
- (c) Aspirin (d) Sulindac

(xx) Which of the following NSAIDs is least acidic in nature?

- (a) Nabumetone
- (b) Aceclofenac
- (c) Diclofenac
- (d) Acetaminophen

2. Attempt short answers (Answer any Seven) :

(7 × 5 = 35)

- (a) Write a note on SAR of sympathomimetics.
- (b) Explain the catabolism of adrenaline and nor-adrenaline with chemical reactions involved.
- (c) Elaborate acetylcholinesterase inhibitors and their use in neurodegenerative disease.
- (d) Distinguish between Sympathetic and Parasympathetic neurons.
- (e) Enlist examples of enzyme inducers and enzyme inhibitors.
- (f) Give the chemical reactions involved in the biosynthesis of epinephrine.
- (g) Classify typical and atypical antipsychotics.
- (h) Summarize the drug interactions of Propranolol.
- (i) Write the synthesis of Tolazoline and Carbamazepine and give their clinical uses.

3. Attempt long answers (Answer any two)

(2 × 10 = 20)

- (a) Write the synthesis of Phenytoin and Ethosuximide. Give their MOA in relation to epilepsy. (5+5 = 10)
- (b) Explain Phase I metabolism with chemical reactions. (10)
- (c) Summarize the distribution of muscarinic and adrenergic receptors and briefly explain their pharmacological effects in the body. (5+5 = 10)