Question Paper

Exam Date & Time: 06-Jun-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmacology - I [PHA-BP404T-S1]

Marks: 75 **Duration: 180 mins.**

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) Which among the following requires energy via hydrolysis of ATP for the transport process? (1)

- Passive diffusion
- Passage of drugs through paracellular spaces.
- Transport of drugs via Multidrug resistance associated protein (MRP 2)
- Transport of drugs through organic cation transporter (OCT)

2) A 60 kg man was given 600 mg of the drug X intravenously. 10 minutes later, the plasma levels of the drug was found to be 2 mg/dl. What is the apparent volume of distribution of X? (1)

- 30 litres
- 3 litres
- 300 litres
- 0.3 litres

3) Which among the following adrenergic beta receptor antagonists blocks alpha receptors as well? (1)

- Propranolol
- Pindolol
- Labetalol
- Metoprolol

4) Co-administration of which of the following drugs can result in reversal of adrenaline mediated vasomotor effect? (1)

- Phentolamine
- Atropine
- Propranolol
- Physostigmine

5) All the following drugs are useful in the management of Parkinson's disease except- (1)

- Selegiline
- Bromocriptine
- Pramipexole
- Risperidone

6) Which among the following shows minimal extrapyramidal side effects? (1)

- Chlorpromazine
- Trifluoperazine
- Clozapine

Haloperidol

7) A patient consumed toxic doses of diazepam and is unconscious. Which among the following would be the best treatment strategy? (1)

Use barbiturates to treat BZD overdose
Use an inverse agonist of the BZD receptors, like beta carbolines, to wake the patient.
Use an antagonist of the BZD receptor, like flumazenil.
Use a GABA-chloride channel blocker like bicuculline to counter BZD induced CNS depression.

8) All the following drugs affect serotonergic neurotransmission, except- (1)

Clorgyline
Amitriptyline
Fluoxetine
Methyldopa

9) Which among the following is an indicator of adrenaline turnover in the body? (1)

Vanillylmandelic acid
Homovanillic acid
5-hydroxyindoleacetic acid
Imidazole acetic acid

10) Which of the following CYP isozymes metabolize the greatest number of drugs? (1)

CYP2D6
CYP2C8/9
CYP3A4/5
CYP1A1/2

11) The therapeutic index is the measure of- (1)

Rate of absorption
Duration of action
Efficacy and safety
Onset of action

12) Fastest acting receptor/transduction mechanism is (1)

Adenylyl cyclase-cyclic AMP pathway
Phospholipase C-IP3:DAG pathway
Intrinsic ion channel operation
Nuclear receptor

13) True statement regarding inverse agonist is (1)

Binds to the receptor and causes intended action
Binds to the receptor and causes opposite action
Binds to the receptor and causes no action
Binds to the receptor and causes submaximal action

14) Which of the following best describes the mechanism of action of scopolamine? (1)

Irreversible antagonist at nicotinic receptor
Irreversible antagonist at muscarinic receptor
Reversible antagonist at muscarinic receptor
Reversible antagonist at nicotinic receptor

15) All are cholinergic agents EXCEPT (1)

- Gallantamine
- Donepezil
- Tacrine
- Memantine

16) The drug not used for analgesia in a patient of head injury is (1)

- Morphine
- NSAIDs
- Rofecoxib
- Acetaminophen

17) The following symptoms may be seen in opium withdrawal (1)

- Tremors
- Lacrimation
- Dry nose and mouth
- Constipation

18) Which of the following drugs is an antagonist to diazepam (1)

- Flumazenil
- Domperidone
- Bromocriptine
- Naloxone

19) Which of the following local anaesthetics belongs to the ester group? (1)

- Procaine
- Bupivacaine
- Lignocaine
- Mepivacaine

20) Which of the following agents do not act via GABA-A receptors? (1)

- Zopiclone
- Benzodiazepines
- Thiopentone
- Promethazine

II Long Answers

Answer all the questions.

1) Explain the cardio-vascular effects of adrenaline, and list the uses of adrenergic agonists. (10)

2) Classify receptors with an example. Explain the signal transducer mechanisms operating in different G protein-coupled receptors. (10)

III Short Answers

Answer all the questions.

1) Explain how plasma protein binding affects drug action. (5)

2) Giving examples, list and explain factors affecting drug absorption across cell membranes (5)

3) Explain the plateau principle of drug accumulation on repeated oral dosing (5)

4) Explain the general adverse effects and uses of first-generation anti-psychotics. (5)

5) Explain the mechanism of action of the following drugs: a) Lidocaine; b) Disulfiram (5)

6)	Describe the pharmacological actions of morphine on CNS. List the clinical uses and contraindications of morphine.	(5)
7)	Explain the anti-epileptic mechanisms of a) phenytoin and b) carbamazepine.	(5)

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