Pharmacology INI-25 (May) Reworked

Subject: Pharmacology
Topic: Immunomodulators
Subtopic: Thalidomide
Question Number: 1
Non-clinical Question:
Which of the following are correct statements about thalidomide?

1) Has antimetabolite action
2) Used in type 2 lepra reaction
3) Has teratogenic effect
4) Used in refractory cases of multiple myeloma

Options:

A. 1, 2, 3
B. 2, 3
C. 2, 3, 4
D. 3, 4

Correct Answer: C) 2, 3, 4

Subject: Pharmacology
Topic: CNS Pharmacology
Subtopic: Benzodiazepines vs. Barbiturates
Question Number: 2
Non-clinical Question:
Which of the following statements are true about benzodiazepines and barbiturates?

1) Flumazenil is an antidote for barbiturate
2) They cause additive sedation with alcohol
3) Thiopentone has short duration of action due to metabolism
4) They cause inhibition of GABA chloride channels

Options:

A. 1, 3
B. 2, 3
C. 2
D. 1, 4

Correct Answer: C) 2

Question Number: 3
Clinical Question:
Which of the following are the uses of $MgSO_4$?
1) Increase renal perfusion
2) Neuroprotection
3) Prevention of seizures
4) Prevention of abruption

Options:
A. 1, 3, 4
B. 2, 3, 4
C. Only 4
D. Only 3

Correct Answer: B) 2, 3, 4

Subject: Pharmacology
Topic: Drug Interactions
Subtopic: Carbamazepine & Erythromycin
Question Number: 4
Clinical Question:
A 28-year-old male with a history of generalized tonic-clonic seizures is on long-term carbamazepine therapy. He started taking erythromycin for a throat infection. Two days later, he presents with complaints of dizziness, diplopia, ataxia, and confusion. What is the most likely explanation for his symptoms?

Options:
A) Refractory seizures due to pharmacodynamic resistance
B) Carbamazepine toxicity due to drug interaction
C) Erythromycin toxicity due to enzyme induction
D) Decreased absorption of carbamazepine leading to subtherapeutic levels

Correct Answer: B) Carbamazepine toxicity due to drug interaction

Subject: Pharmacology
Topic: Pharmacokinetics
Subtopic: Phase 1 Reactions
Question Number: 5
Non-clinical Question:
What is the main role of phase 1 in xenobiotic metabolism?

Options:
A) To make the compound more permeable across membranes
B) To extract functional proteins through oxidase/reductase reactions
C) Introduce or expose functional groups for further metabolism
D) To directly conjugate the compound and facilitate excretion

Correct Answer: C) Introduce or expose functional groups for further metabolism

Subject: Pharmacology
Topic: Central Nervous System — Antihistamines & Tricyclic Antidepressants
Subtopic: Anticholinergic (antimuscarinic) effects of first-generation H_1-blockers and TCAs
Question Number: 6
Non-clinical Question:
Which of the following statements is true regarding the pharmacological relationship between imipramine and diphenhydramine?

Option:

A) Imipramine inhibits diphenhydramine's action
B) Diphenhydramine inhibits imipramine's action
C) Both block muscarinic receptors
D) Both are norepinephrine reuptake inhibitors

Correct answer: C) Both block muscarinic receptors

Subject: Pharmacology
Topic: Cardiovascular Pharmacology
Subtopic: Dopaminergic agonists — renal vasodilation (Fenoldopam)
Question Number: 7
Clinical Question:
A 62-year-old male with a history of coronary heart disease (CHD) and renal failure was admitted to the ICU with elevated blood pressure of 190/110 mmHg and declining urine output. The intensivist administers fenoldopam intravenously. How does this drug help in improving renal function in this patient?

Options:

A) D_1 agonism
B) D_2 antagonism
C) α antagonism
D) Muscarinic antagonism

Correct answer: A) D_1 agonism

Subject: Pharmacology
Topic: Lipid-lowering Agents
Subtopic : ATP-citrate lyase inhibitors
Question Number: 8
Non-clinical Question:
Which of the following is true regarding bempedoic acid?

1. It is a non-competitive inhibitor of ATP-citrate lyase
2. It is a dicarboxylic acid
3. It inhibits de novo cholesterol synthesis in hepatocytes
4. It can be used concomitantly with statins

Options:

A. 2, 3
B. 2, 3, 4
C. 1, 4
D. 3, 4

Correct answer: B) 2, 3, 4

Subject: Pharmacology
Topic: Pharmacokinetics
Subtopic: Loading dose calculations for orally administered drugs
Question Number: 9
Non-clinical Question:
Which pharmacokinetic parameters are used to determine the **loading dose** of an orally administered drug?

1. Volume of distribution (Vd)
2. Half-life
3. Plasma concentration
4. Bioavailability

Options:

A. 1, 2 and 3
B. Only 1
C. 1, 3 and 4
D. 1, 2, 3 and 4

Correct answer: C) 1, 3 and 4

Subject: Pharmacology / Toxicology
Topic: Hepatic Drug Toxicity
Subtopic: Patterns of drug-induced liver injury — cholestatic vs hepatocellular
Question Number: 10
Non-clinical Question:
Which drug is classically associated with cholestasis without significant portal inflammation?

Options:

A) Acetaminophen (paracetamol)
B) Amoxicillin-clavulanic acid
C) Isoniazid
D) Estrogen + androgen

Correct answer: D) Estrogen + androgen

Subject: Pharmacology / Endocrinology
Topic : Hypothalamic-Pituitary-Gonadal Axis Drugs
Subtopic: GnRH agonists/antagonists
Question Number: 11
Non-clinical Question:
Which of the following is NOT an indication for a GnRH antagonist?

Options:

A) Prevent premature LH surge during controlled ovarian stimulation (IVF)
B) Advanced prostate cancer
C) Treatment of hypogonadism
D) Endometriosis

Correct answer: C) Treatment of hypogonadism

Subject: Pharmacology / Regulatory (Note)
Topic: National legal schedules
Subtopic: Indian Drugs & Cosmetics act- drug schedules
Question Number: 12
Non-clinical Question:
Match the following drugs with their respective schedules:

a - Hepatitis B vaccine	1 - Schedule X
b - Veterinary drugs	2 - Schedule H
c - Morphine	3 - Schedule G
d - Insulin	4 - Schedule Z

Options:

A. A-3, B-1, C-2, D-4
B. A-4, B-1, C-3, D-2
C. A-2, B-1, C-4, D-3
D. A-2, B-4, C-1, D-3

Correct Answer: D) A-2, B-4, C-1, D-3

Subject: Pharmacology / Toxicology
Topic: Tolerance and Sensitization
Subtopic: Cross-tolerance vs reverse tolerance (sensitization)
Question Number: 13
Non-clinical Question:
Which of the following statements regarding cross tolerance and reverse tolerance is/are correct?

1. Cross tolerance can occur between morphine and fentanyl due to their action on μ-opioid receptors.
2. Reverse tolerance is seen with chronic use of cocaine, leading to increased susceptibility to seizures.
3. Cross tolerance is a form of pharmacokinetic tolerance only.
4. Reverse tolerance is typically associated with enzyme induction.

Options:

A. 1 and 2
B. 2 and 3
C. 3 and 4
D. 1, 2, and 4

Correct answer: A) 1 and 2

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