

University of Mosul

College of Veterinary Medicine

Department of Physiology,

Biochemistry and Pharmacology



Competitive examination/M.Sc.

in Veterinary Pharmacology and Toxicology

Time: 3 Hours

Date: 9 / 7 / 2024



Answer all the questions

Q1. Choose the correct answer from the following:

(80 marks)

1- Pharmacodynamics considers:

- (A) The way in which the body affects the drug
- (B) The effects of the drug on the body and the mode of drug action
- (C) Drug metabolism
- (D) Plasma-protein binding

2- Which of the following is a phase II drug metabolizing reaction?

- (A) Conjugation
- (B) Hydrolysis
- (C) Oxidation
- (D) Reduction

3- Bioavailability of drug refers to:

- (A) Percentage of administered dose that reaches systemic circulation in the unchanged form
- (B) Ratio of oral to parental dose
- (C) Ratio of orally administered drug to that excreted in the feces
- (D) volume of distribution

4- The renal clearance of a drug (weak organic base) is favored if the drug

- (A) Has low solubility in water.
- (B) Reduces renal blood flow.
- (C) Has a high degree of binding to plasma protein.
- (D) Is put in the ionized form by acidifying the urine.

5- The therapeutic index of a drug is a measure of its:

- (A) Safety
- (B) Potency
- (C) Efficacy
- (D) Dose variability

6- Which of the following is a correct statement regarding a partial agonist?

- (A) It is a drug that is able to produce the full cell/tissue response.
- (B) It is a drug that induces a response, but the maximum response is less than the maximum response to a full agonist.
- (C) It is a drug that binds to the receptor, suppressing the receptor's basal intrinsic activity.
- (D) A drug that undergoes bioactivation to the active drug

7- Which of the following represents a mechanism of antiviral action of Oseltamivir Phosphate against influenza A&B viruses.

- (A) Interference with viral cell binding
- (B) competitively inhibits a specific neuraminidase enzyme
- (C) Inhibits the activity of the viral RNA-dependent RNA-polymerase
- (D) interfere with ergosterol synthesis

8- The rate of drug absorption is greatest in:

- (A) The small intestine
- (B) The large intestine
- (C) The stomach
- (D) Esophagus

9- Drug act as decongestant like.....

- (A) Phenylephrine
- (B) Morphine
- (C) Ibuprofen
- (D) Naproxen

10- When two drugs with the same effect produce an effect greater than the sum of the effects of individual drugs [$1 + 1 > 2$]; such an effect is called :

- (A) Additive effect
- (B) Synergism
- (C) Potentiation
- (D) Antagonism

11- Which one of the following antinematodal drugs is effective against equine bots (*Gasterophilus*)?

- (A) Fenbendazole
- (B) Ivermectin
- (C) Piperazine
- (D) Pyrantel

12-Absorption of oral iron preparations can be facilitated by coadministering

- (A) Antacids
- (B) Tetracyclines
- (C) Phosphates
- (D) Ascorbic acid

13-Probiotics is :

- (A) These are live parasite cultures, which promote beneficial to health of the host.
- (B) These are live virus cultures, which promote beneficial virus health to the host.
- (C) These are live bacterial cultures, which promote beneficial microbial health to the host.
- (D) Inanimate materials

14-Which of the following sentences represents the mechanism of action of Omeprazole?

- (A) H₂-antihistamines inactivate H₂-receptors of parietal cells
- (B) Acid pump inhibitors inhibit the H⁺/K⁺- ATPase on the luminal (secretory) membrane of parietal cells and thus reduce H⁺ secretion
- (C) Acid pump stimulator inhibit the H⁺/K⁺- ATPase on the luminal (secretory) membrane of parietal cells and thus induce H⁺ secretion
- (D) Activation of H₁ receptors

15- Ondansetron is used clinically as a

- (A) Emetics
- (B) Antiemetics
- (C) Cytoprotectants
- (D) Anesthetic



16-Antitussive drug like.....

- (A) Codeine (B) Aceclofenac (C) Ketamine (D) Chloramphenicol

17- Leukotriene receptor antagonists are:

- (A) potent bronchoconstrictors and trigger inflammatory responses such as edema formation.
(B) Bronchoconstrictors and inhibits trigger inflammatory responses such as edema formation.
(C) Bronchodilator and inhibits trigger inflammatory responses such as edema formation.
(D) Inhalational anesthetics

18- The pharmacologic effects of Progesterone include.....

- (A) Hyperemia, hypertrophy, and edema during estrus.
(B) Desensitize the myometrium to oxytocin (i.e., it prevents uterine contractions during pregnancy).
(C) Contractions during pregnancy.
(D) Induction of abortion

19- The agent used to treat tapeworm infestations is.....

- (A) Praziquantel (B) Diloxanide furoate (C) Pentamidine (D) Thialbendazole

20- Which of the following concentrations represents the isotonic concentration used in fluid therapy?

- (A) 7.2% (B) 5% (C) 0.9% (D) 0.5%

21- Which of the following represents mechanism of action of Amprolium?

- (A) Inhibiting nuclear division
(B) Prevents coccidia from utilizing thiamine by blocking thiamine receptors.
(C) Prevents coccidia from utilizing thiamine by stimulation of thiamine receptors.
(D) Inhibit viral replication

22- Which of the following is a common effect of muscarinic stimulant drugs?

- (A) Hypertension (B) Inhibition of sweat glands (C) Miosis (D) Mydriasis

23- Which of the following drug causes bronchoconstriction?

- (A) Atropine (B) Propranolol (C) Amphetamine (D) Naloxon

24- Which of the following represents the mechanism of antifungal action of azole?

- (A) Inhibition of cell wall synthesis (B) Inhibition of cell membrane synthesis
(C) Inhibition of ergosterol synthesis (D) Inhibition of bacterial protein synthesis

25- Alpha₁ receptors causes.....

- (A) Cardiac contraction (B) Vasodilation (C) Mydriasis (D) Miosis

26- Furosemide is

- (A) Osmotic diuretics (B) Loop diuretics (C) Carbonic anhydrase inhibitors (D) Decongestant

27- First order kinetics of the drugs is called when.....

- (A) A constant fraction of the drug is removed in per unit time
(B) A constant amount of the drug is removed in per unit time
(C) Total amount of the drug is removed in one hour
(D) Total amount of the drug is removed in first passage through the kidneys

28- Benzodiazepines belong to drugs.

- (A) Hypnotic (B) Analgesic (C) Anesthetic (D) Antipyretic

29- Strychnine antagonizes receptor in the spinal cord.

- (A) GABA (B) Glycine (C) Aspartate (D) Ach

30- Morphine acts on receptor in the CNS.

- (A) opioid (B) Glycine (C) Aspartate (D) GABA

31- Methylxanthines derivatives cause

- (A) Stimulation of the brain (B) Inhibition of the brain (C) Bronchoconstriction (D) Miosis

32- The mechanism of action of cephalosporins through:

- (A) Inhibiting the bacterial cell membrane functions
(B) Inhibiting the bacterial cell wall synthesis
(C) Inhibiting the bacterial protein synthesis
(D) Inhibiting the DNA gyrase

33- Which of the following drugs is a centrally acting antitussive:

- (A) Dextromethorphan (B) Acetylcysteine (C) Pseudoephedrine (D) Diclofenac

34- The mechanism of action of flouroquinolones through:

- (A) Inhibiting the bacterial cell wall (B) Inhibiting the bacterial DNA gyrase
(C) Inhibiting the bacterial cell membrane (D) Inhibiting the bacterial protein synthesis

35- 1st generation of H₁-antihistamines causes as a side effect.

- (A) Anti-androgenic activity. (B) Sedation (C) Diarrhea (D) Abortion

36- Loratidine does not cause sedation because

- (A) It is ionized and does not cross the blood-brain barrier
(B) It has short duration of action
(C) It is high protein bound
(D) It is a prodrug



- 37- most widely used analgesic drug in race horses.
(A) Aspirin (B) Phenylbutazone (C) Naproxen (D) Ketamine
- 38- Which of the following is the most frequently seen adverse effect of the NSAIDs?
(A) Agranulocytosis (B) Gastric ulcers (C) Hepatitis (D) CNS stimulation
- 39- Which of the following drugs is used for treatment of inflammatory and immune-mediated disease?
(A) Dexamethasone (B) Fentanyl (C) Ephedrine (D) Morphine
- 40- Which one of the following antitrepatodal drugs is most effective against immature *Fasciola hepatica* in cattle?
(A) Albendazole (B) Clorsulon (C) Praziquantel (D) Amprolium
- 41- Agonist activity on the alpha 2 receptor is the mechanism of action of:
(A) Codeine (B) Xylazine (C) Yohimbine
- 42- Agonist activity on the beta 2 receptors is the mechanism of action of:
(A) Salbutamol (B) Propranolol (C) Bisoprolol
- 43- Which of the following statements concerning drug receptors is true?
(A) Drug receptors play an important role in the bioavailability of a drug.
(B) Drugs cannot act unless they are first released from a drug receptor.
(C) Drugs cannot act unless they are first bound to a receptor.
- 44- Succinylcholine has short duration of action in because of high level of pseudocholinesterase.
(A) Horse (B) Sheep (C) Mice
- 45- All of the following concerning the pharmacological actions of aspirin are true, except:
(A) reversible inhibition of COX-1. (B) significant drug interaction with anticoagulants.
(C) GI ulceration and hemorrhage.
- 46- A diuretic which decreases calcium excretion via increased absorption in the distal tubule and is thus used to prevent calcium oxalate bladder stones, is
(A) hydrochlorothiazide (B) ethacrynic acid (C) urea
- 47- Which one of the following opioids has a strong antitussive effect but is only a mild analgesic?
(A) Fentanyl (B) Morphine (C) Codeine
- 48- The antiemetic actions of metoclopramide is
(A) Inhibition of H-1 histamine receptors in the vomiting center
(B) Stimulation of dopaminergic receptors in the CRTZ
(C) Inhibition of dopaminergic receptors in the CRTZ

49- Imidocarb is used to treat

- (A) Cryptosporidosis (B) Babesiosis (C) Giardiasis

50- Which one of the following statements best describes the disinfectants?

- (A) compound that is applied to living tissue to reduce the possibility of bacterial infection
(B) process that eliminates most of pathogenic organisms from an inanimate object
(C) compound that is applied to living tissue to reduce the possibility of viral infection

51- The mechanism of action of Flouroquinolones through.....

- (A) Inhibiting the bacterial nucleic acid synthesis
(B) Inhibiting the bacterial cell membrane functions
(C) Inhibiting the bacterial protein synthesis

52- Local anesthetics blocks channel and reversibly prevent the depolarization of the nervous tissue.

- (A) Potassium (B) Calcium (C) Sodium

53- Phenothiazine derivatives causes dry mouth through its action on.....

- (A) Nicotinic receptor (B) GABA receptor (C) Muscarinic receptor

54- Preanesthetics used with general anesthetics like.....

- (A) Xylazine (B) Ketamine (C) Propofol

55- The mechanism of action of sulfonamides through.....

- (A) Competing with PABA (B) Inhibiting the bacterial DNA gyrase
(C) Inhibiting the bacterial penicillinase

56- Aminoglycosides causes as a side effect.

- (A) Ototoxicity and nephrotoxicity (B) Anemia (C) GIT disturbances

57- Tetracyclines causes as a side effect.

- (A) Stains the teeth of the newborn with yellowish color
(B) Neurotoxicity (C) Ototoxicity

58- The changes in the binding sites is a type of resistance to

- (A) Chloramphenicol (B) Penicillines (C) Sulfonamides

59- Development of alternate metabolic pathway is a type of resistance to

- (A) Sulfonamides (B) Cephalosporines (C) Tetracyclines

60- The mechanism of action of through inhibiting the bacterial cell membrane functions

- (A) Tetracyclines (B) Clindamycin (C) Polymyxin B



61- The treatment used for sulfur toxicity in ruminants is.....

- (A) Methylene blue
- (B) Activated charcoal
- (C) Thiamine supplementation

62- The effect of carbon monoxide (CO) on hemoglobin is

- (A) Increases its ability to transport oxygen
- (B) Displaces oxygen, forming carboxyhemoglobin (COHb)
- (C) Causes hemoglobin to break down

63- Pollutant contributes to the formation of acid rain through its oxidation is

- (A) NO₂
- (B) CO₂
- (C) SO₂

64- The toxic effect caused by sulfur oxide (SO₂) is

- (A) Pulmonary edema
- (B) Chronic obstructive ventricular disease
- (C) Bronchitis due to bronchoconstriction and increased mucus secretion

65- The pollutants that not considered a true pollutant but contributes to the greenhouse effect is.....

- (A) CO
- (B) NO₂
- (C) CO₂

66- The main health effect that caused by ozone (O₃) is

- (A) Chronic bronchitis
- (B) Pulmonary edema
- (C) Lung ulcer

67- The major source of lead (Pb) exposure in animals is

- (A) Contaminated water
- (B) Automobile exhaust
- (C) Lead-containing paints and gasoline

68- The main chronic effect of cadmium (Cd) exposure is

- (A) Nausea and vomiting
- (B) Fever and pulmonary edema
- (C) Bone deformation and arthritis

69- The primary toxic action of mercury (Hg) is

- (A) Inhibits cytochrome P450 enzymes
- (B) Causes oxidative stress in tissues
- (C) Inhibits SH-enzymes, leading to protein synthesis inhibition

70- The common source of nitrate (NO₃) intoxication in ruminants is

- (A) Industrial emissions
- (B) Over-fertilized plants such as sorghum and corn
- (C) Contaminated water

71- Na- bicarbonate used in Ethylene glycol toxicity to correct the -----

- (A) Acidosis
- (B) alkalosis
- (C) hypocalcemia.

72- ----- is the antidote for botulism toxicity.

(A) Penicillin (B) diazepam (C) activated charcoal.

73- ----- competitive inhibition of alcohol dehydrogenase to prevent metabolism of ethylene glycol to toxic acidic intermediated .

(A) Ethanol (B) Methylene pyrazol (C) Corticosteroid.

74- Fluoroacetate inhibit ----- enzyme and prevents the conversion of citric to isocitrate in the cycle.

(A) aconitase (B) pyruvate dehydrogenase (C) isocitrate

75- Glycerol monoacetate proved a beneficial effect in the treatment of poisoned animal with -----

(A) zinc phosphide (B) fluoroacetate (C) warfarin.

76- Gastric lavage consist of ----- suspension of fuller' s earth.

(A) 20% (B) 30% (C) 40% .

77- ----- is the antidote of Arsenic toxicity .

(A) BAL (B) activated charcoal (C) atropine sulphate.

78- In dogs more than 90% of bits located in the-----

(A) abdomen (B) head (C) head and extremities.

79- ----- used in the treatment of snakes bits.

(A) Atropine sulphate (B) Barbiturate (C) Diphenhydramine

80- Methylene blue is the antidote for-----

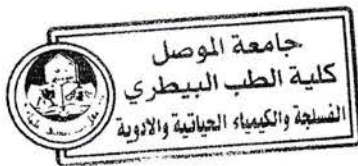
(A) carbaryl toxicity (B) Na- chlorates toxicity (C) arsenicals toxicity.

Q2. Answer the following by marking T (True) or F (False): (20 Marks)

- 1- Agonist activity on the alpha 2 receptors is the mechanism of action of yohimbine.
- 2- Primary clinical use of diuretics in veterinary medicine is in the prevention and treatment of generalized edema or severe local edema.
- 3- Bromhexine is a mucolytic by inhibiting the hydrolysis of acid mucopolysaccharides that significantly contributes to mucus viscosity
- 4- Diphenhydramine classified as second generation of antihistamine .
- 5-Ivermectin have a high safety margin in ruminants, horses but the Collie dogs show high sensitivity to it.

- 6- Combination therapy using amphotericin B and flucytosine has been shown to be synergistic against cryptococcal meningitis .
- 7- Clearance is the ratio of the rate of elimination of a drug to the concentration of the drug in the plasma or blood.
- 8-The therapeutic window is the safe range between the minimum toxic concentration of a drug and the minimum therapeutic concentration.
- 9- Postfungal effect is the persists of antifungal effect after drug concentrations have declined.
- 10-The clinical use of the antiviral drug (cytarabine) in veterinary medicine is limited because is very selective in their antiviral activity.
- 11- Poison is only liquid or gas that interfere with the life process.
- 12- Maximum tolerable dose is the highest dose that can be tolerated by the living organism with detectable toxic effects.
- 13- Fecal elimination is the important route because of the common exposure of ingested toxins
- 14- Safety is the probability that specific exposure or dose will produce a toxic effects.
- 15- Toxicity is the intrinsic ability of quantity of poison under certain conditions to induce poisoning or death.
- 16- Delayed toxic effects is the effects that occur after a lapse of time.
- 17- Teratogenesis is an alteration of the genetic material in the nucleus of cells in ways that can be transmitted during cell division.
- 18- All animals are susceptible to poisoning with NSAIDs.
- 19- we can use apomorphine for dogs and cats as emetic drug.
- 20- Accidental overdose or inappropriate therapy are the main source of poisoning with drugs.

GOOD LUCK



Handwritten signature of Dr. Jaber Jaber Al-Jabbar, Head of the Department of Pharmacology and Therapeutics, Faculty of Veterinary Medicine, University of Mosul.

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