Ministry of Higher Education & Scientific Research
Tikrit University
College of Veterinary Medicine
Postgraduate Division

Class:M.Sc. Veterinary Medical Pharmacology
Time : 3 hours
Form (1)

Competitive exam for postgraduate students-Master's program (2023-2024)

Note : Answer all following questions

Q1 \ Answer by (T) for correct statement or (F) for the false statement :(25M)

1-Agonist is a drug which binds to its "receptor" and produces its characteristic effect , have affinity and efficay.

2- Some drugs when taken by orall methode their response is not effectively due to first pass through the liver.

3- The rate of disribution of drugs depend on,blood flow, capillary permeabilit yand protein binding .

4-Bioavailability describes the proportion of the drug administered that is metabolised very quickly and thus is not available to induce a physiological effect.

5-Drug associated with the hepatic/renal toxic metabolite: N-acetyl-p-benzoquinone is diclofenac.

6-All preganglionic autonomic neurons secrete(Epinephrine).

7-Effective in treating both organophosphate and muscarine intoxication, give Diazepam.

8-Potassium iodide is expectorant acts both directly on the airway mucosa as well as reflexly.

9-Ranitidine and Cimetidine are histamine H2 blocker has most marked inhibitory effect on microsomal cytochrome P-450 enzyme .

10-The concepts of pharmacokinetics refer to (Agonist, antagonist, absorption and disribution).

11- Alkalinization of urine hastens the excretion of weakly basic drugs while acidification of urine hastens excretion of weakly acidic drugs.

12-The antagonism between adrenaline and histamine is called physiological antagonism because they have opposite physiological effects.

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13-The type combination of antimicrobial (Bactericidal + Bactericidal) is most likely to exhibit antagonism effect.

14-Select the drug which can improve urinary flow rate in benign prostatic hypertrophy without affecting prostate size is Prazosin.

15-Propranolol can be used to allay anxiety associated with Short-term stressful situations.

Q2 // Read the following questions carefully and answer (10M).

A. Classify pesticides, with examples.
B. Enumerates the steps of Management and treatment of any of toxicosis.
C. List the drugs under the Macrolids and Aminoglycoside groups.
D. Define the concepts (Pharmacology, Drug, Receptor).Answer only two.
E. Mention General Mechanism action of antibiotics.

Q3//**Multiple choice questions: Answer with T or F (15 M)**

1\ In pharmacodynamics:

1.( ) Pure Agonist has affinity for binding but low efficacy.

2.( ) Pure Antagonist has affinity for binding but no efficacy; blocks action of endogenous and exogenous ligands.

3.( ) Mixed Agonist-Antagonist produces an agonist effect at one receptor and an antagonist effect at another.

4.( ) Partial Agonist has affinity for binding plus efficacy.

2/ The following statements about paracetamol metabolism are:

1.( ) 95% of paracetamol dose is metabolized by glucuronide and sulphate conjugation.

2.( ) 5% of paracetamol dose is metabolized by glutathione conjugation.

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3.( ) Overdose of paracetamol causes hepatotoxicity due to glutathione depletion.

4.( ) Chronic alcohol consumption increases paracetamol toxicity.

3/All of the following are possible consequences of phase1 metabolism reaction:

1.( ) Production of toxic metabolite.

2.( ) Conversion of pharmacologically active to active substances.

3.( ) Conversion of pharmacologically inactive to active substances.

4.( ) Conjugation of a drug with an endogenous substance.

4/ All of the following statements about excretion of drugs are true:

1( ) Paracetamol may be excreted in saliva.

2.( ) Tetracyclines are detected in the breast milk of a nursing woman

3.( ) Renal excretion of drugs is urine pH dependent process

4.( ) Protein binding of drugs doesn't limit their glomerular filtration

5/ Congestive heart failure affects drug pharmacokinetics by:

1.( ) Increasing drug absorption.

2.( ) Reducing drug distribution to tissues.

3.( ) Elevating drug metabolism.

4.( ) Increasing drug excretion.

6/ Regarding aminoglycosides mechanism of action:

1.( )The overall effect is irreversible and lethal for the cell (bactericidal).

2.( ) Inside the cell they bind to specific 50S- ribosomal subunit.

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3. ( ) Reversibly inhibitors of protein synthesis in bacteria.

4.( ) They block formation of the initiation complex.

7\ Antiviral drugs:

1.( ) Are virustatic.

2. ( ) Acyclovir has clinical activity against HSV-1, HSV-2, and VZV.

3.( ) Acyclovir can be given orally only.

4.( ) The bioavailability of oral acyclovir is low (15-20%) and is unaffected by food.

8\ Ketoconazole :

1.( ) It is an Imidazoles.

2.( ) Fungistatic .

3.( ) Inhibit ergosterol synthesis by inhibition of fungal CYP P450 enzymes.

4.( ) Can be given during pregnancy.

9\ Oropharyngeal candidiasis is treated with:

1.( ) Nystatin .

2.( ) Clotrimazole.

3.( ) Amphotericin B .

4. ( ) Ketoconazole .

10/ Fluoroquinolones:

1.( ) Act through blocking of bacterial DNA synthesis by inhibiting bacterial topoisomerase II (DNA gyrase) and topoisomerase IV.

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2.( ) Inhibition of topoisomerase IV not interferes with separation of replicated chromosomal DNA into the respective daughter cells during cell division of bacteria.

3.( ) They are bacteriostatic.

4.( )Well absorbed orally (bioav. of 80–95%) and distributed widely in body fluids and tissues and effective in soft tissue and bone infections.

11/ Steroids regulatory actions in areas of inflammation include:

1.( ) increased vasodilatation and fluid exudation.

2.( ) decreased influx and activity of leukocytes.

3.( ) decreased clonal expansion of T and B cells and decreased action of cytokine – secreting T cells.

4.( ) increased activity of mononuclear cells, increased proliferation of blood vessels, exaggerate fibrosis.

12/corticosteroids mechanisms of action include:

1.( ) interact with specific receptor proteins in target tissues to regulate the expression of corticosteroid-responsive genes.

2.( )changing the levels and arrangement of proteins synthesized by the various target tissues .

3.( ) receptors for corticosteroids are members of the nuclear receptor .

4.( ) affect carbohydrate and protein metabolism.

13/ Highly water soluble drugs:

1.( ) Do not usually penetrate CNS.

2.( ) Are readily excreted by kidney without prior metabolism.

3.( ) Are not absorbed from GIT.

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4.( ) May undergo enterohepatic circulation after glucuronide conjugation.

14\ In pharmacokinetics of Local Anesthetics:

1.( ) All local anesthetics are weak acids.

2.( ) Increasing the lipid solubility leads to faster nerve penetration, block sodium channels, and speed up the onset of action.

3.( ) The more tightly local anesthetics bind to the protein, the longer onset of action.

4.( ) The more non-ionized presented, the slowest the onset action.

15\ The mechanism of action of local anesthetics:

1.( ) Local anesthetics block the conduction in peripheral nerves that inhibited the nerve to excited and created anesthesia.

2.( ) LAs accelerates transmission of nerve impulses.

3.( ) The Local anesthetic action is a reversible reaction.

4.( ) The nerve loses depolarization and the capacity to create the impulse, the patient loses sensation in the area supplied by the nerve.

Q4//SHORT ASSAY QUESTIONS (10 M)

1. **What are the pharmacological effects of opioids?**
2. **What we mean by antiseptics and what are the uses of antiseptics?**
3. **What we mean by macrolides?**

A\ mention three members of them?

B\what are the mechanism of action of macrolides?

C\what are the clinical uses of macrolides?

D\what are the adverse effects of macrolides?

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4. In Non- steroidal anti-inflammatory drugs (NSAIDs) :

A: answer following

1\ Anti-inflammatory effects are due to:

2\ Analgesic effects are due to:

3\ Antipyretics effects are due to:

B: What are the adverse effects of NSAIDs?

5. A \ What are the Scientific names of the following vitamins:

1\ vitamin B1:

2\ vitamin B2:

3\ vitamin B3:

4\ vitamin B6:

5\ vitamin B9:

6\ vitamin B12:

7\vitamin A:

8\vitamin C:

9\vitamin D2:

10\vitamin D3:

11\ vitamin E:

12\vitamin K:

B\ Define disinfectant and what are the properties of ideal one?

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Q5\\ mention the site of secretion, target organ, and functions of the following hormones: *(10 M.)*

1. ADH.
2. Aldosterone.
3. LH.
4. Prolactin.
5. Epinephrine
6. Insulin.
7. T3.
8. Erythropoietin.
9. Calcitonin.
10. TSH.

Q6/ Define hormones &classification the types of hormones according chemical structure with examples *(5 M.)*

Q7/ Answer the following: *(5 M.)*

A\ Explain the mechanism of blood clotting..

B\ Describe the types of white blood cell and enumerate there functions only .

Q8/ Chose the most approprate answer of the following:

1. **Which of these hormones is made by the posterior pituitary?**
   a. FSH
   b. LH
   c. ACTH
   d. ADH

2. **The posterior pituitary stores and releases:**
   a. Growth hormone and prolactin.
   b. Prolactin and oxytocin.
   c. Oxytocin and antidiuretic hormone (ADH).
   d. ADH and growth hormone.

3. **Most hormones of the endocrine system are regulated by a:**
   a. Negative feedback mechanism.
   b. Positive feedback mechanism.

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c. Hormone-receptor complex.
d. Hormone-gene complex.

4. Which of the following statements about antidiuretic hormone (ADH) is incorrect?

a. ADH regulates the amount of water reabsorbed by the kidneys
b. ADH is also known as vasopressin
c. without ADH, the proximal parts of the nephron are impermeable to water
d. ADH is synthesized in the hypothalamus and stored in the pituitary gland
e. ADH plays a key role in the homeostatic process called osmoregulation

5. Coordination of complex movements by the cerebellum involves all the Following mechanisms, except :-

a- sequencing of movements
b- Decomposition of movements
c- Damping of movements
d- Timing of movements.

6. The central nervous system includes all the following components, except

a- spinal cord
b- Medulla oblongata
c- Autonomic ganglia
d- Diencephalon.

7. Most sensory receptors :-

a- are stimulated by different types of stimuli
b- Are stimulated only by specific stimuli
c- Possess a high threshold for their specific stimuli
d- Only 'b' and 'c' are correct

8. Once initiated, the receptor potential :-

a- spreads to a long distance along the sensory nerve fiber
b- Amplitude is not related to the strength of the stimulus
c- Always generates an action potential from the receptor
d- Stays for a variable period depending on the type of the receptor.

9. Pain receptors :

a- become more sensitive with prolonged stimulation
b- Are stimulated by prostaglandins
c- Are more numerous in viscera than other tissues
d- Include different morphological types.

10.Which of the following substances would NOT normally be expected to appear in urine?

a. water
b. B. urea
c. C. sodium ions
d. D. glucose
e. chloride ions.

11.The digestive enzymes of cellular compounds are confined to :

a. Lysosomes
b. (B) Ribosomes
c. (C) Peroxisomes
d. (D) Polysomes

12.The carbohydrate of the blood group substances is

a. Sucrose
b. Fructose
c. Arabinose
d. Maltose

13.Conversion of glucose to glucose-6- phosphate in human liver is by

a. Hexokinase only
b. Glucokinase only
c. Hexokinase and glucokinase
d. Glucose-6-phosphate dehydrogenase

14.Gluconeogenesis is decreased by

a. Glucagon
b. Epinephrine
c. Glucocorticoids
d. Insulin

15.The true statement about solutions of amino acids at physiological pH is

a. All amino acids contain both positive and negative charges
b. All amino acids contain positively charged side chains
c. Some amino acids contain only positive charge

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d. All amino acids contain negatively charged side chains.

16. **the functions of plasma albumin are:**
    a. Osmosis
    b. Transport
    c. Immunity
    d. both (A)and (B)
17. **The main sites for oxidative deamination are**
    a. Liver and kidney
    b. Skin and pancreas
    c. Intestine and mammary gland
    d. Lung and spleen
18. **The ssential fatty acid:**
    a. Linoleic acid
    b. Linolenic acid
    c. Arachidonic acid
    d. All these
19. **Ketone bodies are synthesized in**
    a. Adipose tissue
    b. Liver
    c. Muscles
    d. (D) Brain
20. **Fatty liver may be caused by**
    a. Deficiency of methionine
    b. Puromycin
    c. Chronic alcoholism
    d. All of these

GOOD LUCK

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Q1-Read the following questions carefully and answer by choosing the most appropriate answers:- **(60M).**

1. It is one of the most widely used antiseizure drugs:

a. Carbamazepine.
b. Phenytoin.
c. Diazepam.
d. None of above.

2.One of the following drugs considered a prodrug:

a. Phenytoin.
b. Sodium valproate.
c. Eslicarbazepine.
d. All of them.

3- It's not metabolized by liver and excreted unchanged in urine:

a- Lorazepam.
b- Terazepam.
c- Both of them.
d- None of them.

4- The following drug can interact with ethosuximide:

a- Warfarin.
b- valproic acid.
c- Paracetamol.
d- All of them.

5- One of the following neurotransmitter is a target of Vigabatrin:

a- Ach.
b- GABA transaminase.
c- Norepinephrine.
d- Noradrenaline.

6- It mainly works centrally as antihypertensive and safe in pregnancy:

a- Methyldopa.
b- Clonidine.
c- Both of them.
d- None of them.

7- They are widely used B blockers in the treatment of hypertension:

a- Esmolol and atenolol.
b- Metoprolol and atenolol.
c- Propranolol and atenolol.
d- All of above.

8- Prazosin is acting mainly by blocking of: .

a- Muscarinic receptors.
b- Nicotinic receptors.
c- Both of them.
d- None of them.

9- Its acting by blocking calcium channel.

a- Chlorphenramine.
b- Dihyrphenramine.
c- Verapamil.
d- Clonidine.

10- The following drug is acting by inhibition of ACE:

a- Captopril.
b- Enalapril.
c- Both of them.
d- None of them.

11- Cromolyn can be considered as a:

a- H1 receptor antagonist.
b- Mast cell stabilizer.
c- Muscarinic receptor antagonist.
d- None of them .

12- Ergotamine is indicated for:

a- Angina pectoris.
b- Nausea and vomiting.
c- Migrane and headache.
d- None of them.

13- One of the following drugs is a Na/K ATPase inhibitor:

a- Ibuprofen.
b- Digoxin.
c- Diclofenac sodium.
d- All of them.

14- Milrinone downregulate the breakdown of:

a- cAMP.
b- cGMP.
c- Protein kinase.
d- None of them.

15- Flecanide is used pharmacologically as a:

a- Antianginal.
b- Antiprotozoal.
c- Antibacterial.
d- None of them.

16- The main site of action of hydrochlorothiazide is in the:

a- Proximal tubule.
b- Loop of henel.
c- Distal convoluted tubule .
d- Collecting duct.

17- In reference to mode of action, which hormone can be affected by spironolactone:

a- Dopamine.
b- Serotonine.
c- Aldosterone.
d- Histamine .

18- The following antibiotics is commonly used in treatment of skin acne:

a- Clindamycin.
b- Erythromycin.
c- Both of them .
d- None of them.

19- One of the following anticholinergic drugs can be used in the treatment COPD:

a- Atropine.
b- Ipratropium.
c- Scopolamine.
d- All of them.

20- In addition to its bronchodilator effect, theophylline has:

a- Antiprotozoal effect .
b- Antiepileptic effect.
c- Antineoplastic .
d- Anti-inflammatory effect

21- Effective in treating both organophosphate and muscarine intoxication.

a- Nicotine
b- Echothiophate (Phospholine)
c- Pilocarpine.
d- Atropine.

22- The insulin receptor is a:

a- Ion channel regulating receptor
b- Tyrosine protein kinase receptor.
c- G-protein coupled receptor.
d- None of the above.

23-Drug that acting as Beta adrenergic receptor blocker:-

a- Propranolol
b- phenoxybenzamine.

c- Ergotamine.
d- yohimbine.

24-Which of the following statements about NSAIDs is true

a- Most NSAIDs are weak acids.
b- Most NSAIDs are metabolised by the liver into active metabolites to have the longest half-lives of all NSAIDs.
c- Most NSAIDs are act by inhibitors of cyclooxygenase (COX) enzymes.
d- All of the above.

25-All preganglionic autonomic neurons secrete.

a- Epinephrine
b- Acetylcholine
c- Nicotine.
d- Dopamine.

26-Drug associated with the hepatic and renal toxic metabolite: N-acetyl-p-benzoquinone.

a- diclofenac
b- Meclofenamate
c- Acetaminophen
a- D- Aspirin.

27-Bromocriptine causes the following:

a- Prolactin release.
b- Vomiting.
b- c - Uterine contraction.
c- Impotence.

28-The following is a selective α2 adrenoceptor antagonist

a. Prazosin.
c- Phentolamine.
d- Yohimbine.
e- Clonidine.

29 -Which histamine H2 blocker has most marked inhibitory effect on microsomal cytochrome P-450 enzyme.

a- Cimetidine.
b- Ranitidine.
c- Roxatidine.
d- Famotidine.

30 - ---------- used in symptomatic treatment of myasthenia gravis, an autoimmune disease caused by antibodies to the nicotinic receptor at neuromuscular junctions.

a. Echothiophate.
b. Neostigmine.
c. Physostigmine.
d. Edrophonium.

31-Pinpoint pupils, coma, profuse sweating, salivation, bronchial hypersecretion, bronchospasm, and muscle weakness are most likely due to the toxic effects of?

a. Belladonna alkaloids.
b. Parathion.
c. Physostigmine overdose.
d. Epinephrine overdose.

32-Curare is often given before surgical operation to:

a. Prevent bronchial secretion
b. -Maintain the arterial blood pressurec.
c. Induce bronchodilatation
d. Relax the skeletal muscles.

33-Antithyroid drugs exert the following action:

a. Inhibit thyroxine synthesis.
b. Block the action of thyroxine on pituitary.
a- Block the action of TSH on thyroid.
b- Block the action of thyroxine on peripheral tissues.

34-Insulin release from pancreatic β cells is augmented by the following except:

a. Ketone bodies.
b. Glucagon.
c. Vagal stimulation.
d. Alfa adrenergic agonists.

35-Dexamethasone differs from prednisolone in that it is:

a. Longer acting.
b. More potent.
c. More selective.
d. All of the above.

36-The most popular form of hormonal contraception is:

a. Combined estrogen + progestin oral pill.
b. Phased estrogen + progestin oral pill.
c. Postcoital estrogen + progestin pill.
d. Depot progestin injection.

37-Actions of oxytocin include the following except:

a. Vasoconstriction.
b. Increased water reabsorption in renal collecting ducts.
c. Contraction of mammary myoepithelium.
d. Release of prostaglandins from endometrium.

38-Oxytocin is essential for:

a. Initiation of labour
b. Formation of milk
c. Milk ejection reflex
d. Both A and C are correct

39-Ergometrine stops postpartum haemorrhage by:

a. Causing vasoconstriction of uterine arteries.
b. Increasing tone of uterine muscle.
c. Promoting coagulation.
d. Inducing platelet aggregation.

40-The vitamin that is regarded to be a hormone is:

a. Vitamin D.
b. Vitamin C .
c. Vitamin B12 .
d. -Vitamin A.

41-Class of carbohydrate which cannot be hydrolyzed further, is known as?

a. Monosacchride.
b. Disaccharide.
c. Polysaccaride .
d. Proteoglycan

42-In which of the following forms, glucose is stored in plants?

a. Glycogen.
b. Starch.
c. Dextrin.
d. Cellulose.

43- Number of hydrogen bonds between adenine and thymine?

a. 1
b. 2
c. 3
d. 4

44-**Which of the following is NOT an endocrine gland?**

a. Pituitary
b. Hypothalamus
c. Parathyroid
d. Pancreas

45- Name the hormone, which is released by the posterior pituitary.

a. Oxytocin
b. TSH
c. ICSH
d. Prolactin

46- Identify the purine base of nucleic acids in the following

a. Adenine
b. Cytosine
c. Thymine

d. Uracil

47-Enzymes are polymers of

a. Amino acids
b. Hexose sugar
c. Fatty acids
d. Inorganic phosphate

48-Which of the following is an example of monosaccharide?

a. Galactose
b. Sucrose
c. Lactose
d. Maltose

49-**Name those purine bases which are commonly found in DNA and RNA?**

a. Adenine and guanine
b. Cytosine and thymine
c. Adenine and thymine
d. Cytosine and guanine

50-When molecules are being built by chemical reactions it is called:-

a. Anabolism.
b. Catabolism.
c. Fermentation.
d. Respiration.

51 .Which is not a function of the hypothalamus?

a. Affect heart rate
b. Control temperature
c. Affect water balance
d. Secrete FSH

52. **Which of these hormones is made by the posterior pituitary?**

a. FSH
b. LH
c. ACTH
d. ADH

53. **The posterior pituitary stores and releases**:

a. Growth hormone and prolactin.
b. Prolactin and oxytocin.
c. Oxytocin and antidiuretic hormone (ADH).

d. ADH and growth hormone.

54. The central nervous system includes all the following components, except:-

a- spinal cord
b- Medulla oblongata
c- Autonomic ganglia
d- Diencephalon.

55. Which of the following divisions is NOT a part of the peripheral nervous system?

a. brainstem
b. sympathetic
c. parasympathetic
d. sensory
e. enteric

56- Which of the following white blood cells is capable of phagocytosis?

a. Basophil
b. Eosinophil
c. Lymphocyte
d. Neutrophil

57- **Platelets are formed from what type of cell؟**

a. Melanocytes
b. Macrophages
c. Astrocytes
d. Megakaryocytes.

58- An increased white blood cell count is indicative of which disease؟

a. Lupus
b. Leukemia
c. Anemia
d. Melanoma

59-The two main divisions of the central nervous system are:

a. nerves and neurons
b. cerebral cortex and cerebrospinal fluid
c. brain and spinal cord
d. Spinal cord and nerves.
e. Cerebral cortex and brainstem.

60- The function of the myelin sheath found on myelinated neurons is to:

a. nourish them
b. insulate them
c. protect them
d. support them

Q2-Read the following questions carefully and answers briefly: (30M).

1-Why phenobarbital is preferred in the chronic treatment of epilepsy?

2 - Mention one example of osmotic diuretics.

3-Why 3% of lidocaine reaches the plasma after oral administration?

4-What is the main difference between loratidine and disloratidine in terms of sedative effect?

5-What are the primary vital signs to maintain in the poisoned case.

6- Mention the general management and treatment of toxicosis.

7- Classify antibiotic according to the mechanism of action with example.

8- Classify cholinergic and adrenergic receptor.

9- Describe relation between receptors and effected factors.

10- Define blood and enumerate the functions & composition of it.

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جامعة تكريت

Competitive Exam
2021-2022

Class .M. Sc. .
Subject: Pharmacology
Time : 3hr

Note :Answer for all questions

Pharmacology *(70Pts)*

Q1-Read the following questions carefully and answer briefly.

(30pts / Each 1.5 pt)

[1] What is the major factor That play an important role in the absorption of sedative-hypnotic drugs.

[2] Is it true for all seductive-hypnotic drugs cross placental barrier, yes or no.

[3] What is special about Alprazolam in terms of oral absorption.

[4] Mention three examples of Benzodiazepines.

[5] Its important to understand how Benzodiazepines work, can you briefly explain their mechanism of action.

[6] How can you manage the sedative hypnotic overdose?

[7] Do barbiturates have the same mechanism of action as benzodiazepine? Yes or no if no mention it.

[8] Which receptors are involved in the mechanism of action of Carbamazepine?

[9] What is the similarity and difference between phenytoin and primidone in terms of mechanism of action?

[10] As an opioid agonist, does Morphine considered a full or partial agonist? And what is the receptor is activated?

[11] Enumerate three calcium channel blockers which can be used in the treatment of hypertension.

[12] Explain briefly how clonidine lowers blood pressure.

[13] Explain the mechanism of action of Ranolazine.

[14] What is the main side effect spironolactone.

[15] Mention one clinical use of Terazosin.

[16] Classification antibiotic according to the mechanism of action.

[17] Mention adverse effect of aminoglycosides.

[18] 1- Mechanism action of penicillins.

[19] Enumerate the drugs in the group of Macrolides.

[20] Adverse effect of Tetracyclines.

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Q2-Answer by True (T) or False(F) for the following questions *(20 pts / Each 1 pt)*

[1] Somatropin activates the growth hormone receptors and induces IGF-1 release.

[2] Bromocriptine can activate K+2 receptor and lead to decrease the prolactin secretion from the pituitary gland

[3] Desmopressin can be used clinically to treat Pituitary diabetes insipidus.

[4] Human chorionic gonadotropin (hCG) can activate FSH receptor and mimic its action.

[5] Follitropin alfa can mimic the action of LH through the stimulating of FSH receptors.

[6] The most important drug in the treatment of organophosphate poisoning is Diazepam.

[7] Propranolol can be used to allay anxiety associated with Short-term stressful situations.

[8] Carvedilol is the Select β-adrenergic blocker that has additional α1 blocking, vasodilator and antioxidant properties.

[9] Mucokinetic is a drug which increased airway mucus secretion.

[10] Omeprazole stimulated gastric acid secretion without affecting cholinergic, histaminergic or gastrin receptors.

[11] Alkalinization of urine hastens the excretion of weakly basic drugs.

[12] The most important factor governing absorption of a drug from intact skin is lipid solubility of the drug.

[13] High plasma protein binding generally makes the drug short acting.

[14] The plasma half life of penicillin-G is longer in the new born because their tubular transport mechanisms are not well developed

[15] Select the drug which can improve urinary flow rate in benign prostatic hypertrophy without affecting prostate size is Prazosin.

[16] The most common treatment for a gout attack is a nonsteroidal anti-inflammatory drug (NSAID).

[17] 17-Nonsteroidal anti-inflammatory drugs are useful in treatment pain because they block opiate receptor.

[18] Biotransformation of drugs is primarily directed toconvert lipid soluble drugs into nonlipid soluble metabolites.

[19] Cyclic AMP, Inositol trisphosphate and Diacylglycerols serve as intracellular second messengers in receptor mediated signal transduction.

[20] The antagonism between adrenaline and histamine is called physiological antagonism because they have opposite physiological effects.

Q3-Read the following questions carefully and answer by choosing the most appropriate answers *(20 pts / Each 1 pt)*

[1] The main difference between first and second generation is
- **a.** more sedative.
- **b.** less sedative.
- **c.** both of above.
- **d.** none of above.

[2] One of these drugs are the active metabolite of antihistamines
- **a.** Promethazine.
- **b.** Doxylamine.
- **c.** Desloratadine.
- **d.** Acrivastine.

[3] Two of the following drugs have been withdrawn from the treatment of nausea and vomiting due to the teratogenic effect.
- **a.** Cinnarizine and meclizine.
- **b.** Diphenhydramine and chlorpheniramine.
- **c.** Carbamazepine and terazosin.
- **d.** Phenytoin and phenobarbital.

[4] Ketansirin is a well-known serotonin antagonist which block serotonin receptor:
- **a.** Competitively
- **b.** Uncompetitively.
- **c.** Both of them.
- **d.** None of them.

[5] Ergonovine can be used clinically to induce
- **a.** Uterine smooth muscle contraction.
- **b.** Bronchial smooth muscle relaxation.
- **c.** Both of above.
- **d.** None of above.

[6] What are the protein structures called that are expressed within the cell membranes and interact with endogenous signalling molecules or some drugs to initiate an intracellular response.
- **a.** Enzymes.
- **b.** Hormones.
- **c.** Ligands.
- **d.** Receptors.

[7] Which statement about partial agonists is true:-
- **a.** Partial agonists are molecules that can always cause a maximal response irrespective of the presence of antagonists.
- **b.** Partial agonists are molecules that have affinity toward the target receptor but no efficacy.
- **c.** Partial agonists are molecules that have affinity and efficacy toward the target receptor.
- **d.** Partial agonists are molecules that have an agonistic effect on the receptor, but only ever achieve a submaximal response.

[8] Which of the following is the correct definition of bioavailability:
- **a.** Bioavailability describes the proportion of the drug administered that is metabolised very quickly and thus is not available to induce a physiological effect.
- **b.** Bioavailability describes the ability of the administered drug metabolites to cause undesirable physiological effects.
- **c.** Bioavailability is used to describe the fraction of the dose of drug administered that is present within the body and facilitates the desired physiological effects.
- **d.** Bioavailability is the length of time an administered drug is present in the body and thus is available to cause a physiological effect.

[9] Drug associated with the hepatic/renal toxic metabolite: N-acetyl-p-benzoquinone.
- **a.** diclofenac.
- **b.** meclofenamate.
- **c.** acetaminophen.
- **d.** aspirin.

[10] 10-Select the fastest acting inhaled bronchodilator.
- **a.** Ipratropium bromide.
- **b.** Formoterol.
- **c.** Salbutamol.
- **d.** Salmeterol.

[11] 11-Which histamine H2 blocker has most marked inhibitory effect on microsomal cytochrome P-450 enzyme.
- **a.** Cimetidine.
- **b.** Ranitidine.
- **c.** Roxatidine.
- **d.** Famotidine.

[12] 12-Codeine is used clinically as
- **a.** Analgesic.
- **b.** Antitussive.
- **c.** Antidiarrhoeal.
- **d.** All of the above.

[13] The following expectorant acts both directly on the airway mucosa as well as reflexly.
- **a.** Potassium iodide.
- **b.** Guaiphenesin.
- **c.** Terpin hydrate.
- **d.** Bromhexine.

[14] The following is a selective α2 adrenoceptor antagonist
- **a.** Prazosin.
- **b.** Phentolamine.
- **c.** Yohimbine.
- **d.** Clonidine.

[15] Effective in treating both organophosphate and muscarine intoxication.
- **a.** Nicotine
- **b.** Echothiophate (Phospholine)
- **c.** Pilocarpine .
- **d.** Atropine .

[16] All prega nglionic autonomic neurons secrete.
- **a.** Epinephrine
- **b.** Acetylcholine
- **c.** Nicotine.
- **d.** Dopamine.

[17] Neostigmine is preferred over physostigmine for treating myasthenia gravis because.
- **a.** It is better absorbed orally.
- **b.** It has longer duration of action.
- **c.** It has additional direct agonistic action on nicotinic receptors at the muscle end plate.
- **d.** It penetrates blood-brain barrier.

[18] Which of the following statements about NSAIDs is true
- **a.** Most NSAIDs are weak acids
- **b.** Most NSAIDs are metabolised by the liver into inactive metabolites to have the longest half-lives of all NSAIDs.
- **c.** Most NSAIDs are act by inhibitors of cyclooxygenase (COX) enzymes.
- **d.** All of the above.

[19] 19-Alpha adrenergic receptor blocker
- **a.** Phentolamine (Regitine)
- **b.** phenoxybenzamine (Dibenzyline).
- **c.** Terbutaline (Brethine
- **d.** A & B

[20] Timolol eye drops are preferred over pilocarpine eye drops by glaucoma patients because.

a. Timolol is more effective than pilocarpine.
b. Timolol acts by enhancing uveo-scleral outflow.
c. Timolol produces less ocular side effects.
d. There are no contraindications to timolol.

Toxicology *(10 pts / Each 5 pts)*

Q4 -Read the following questions carefully and answer.

A-Classification of pesticides with examples .

B-Enumerates the steps of Mangment and treatment of any of toxicosis.

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Physiology *(15Pts)*

Q5: Choose the correct answers: *(10 pts / Each 1 pt)*

[1] Which is not a function of the hypothalamus?
a) Affect heart rate
b) Control temperature
c) Affect water balance
d) Secrete FSH

[2] Which of these hormones is made by the posterior pituitary?
a) FSH
b) LH
c) ACTH
d) ADH

[3] The posterior pituitary stores and releases:
a) Growth hormone and prolactin.
b) Prolactin and oxytocin.
c) Oxytocin and antidiuretic hormone (ADH).
d) ADH and growth hormone.

[4] Most hormones of the endocrine system are regulated by a:
a) Negative feedback mechanism.
b) Positive feedback mechanism.
c) Hormone-receptor complex.
d) Hormone-gene complex.

[5] The endocrine gland responsible for the body's circadian rhythm is the:
- **a)** Thymus gland.
- **b)** Pineal gland.
- **c)** Parathyroid gland.
- **d)** Pituitary gland.

[6] The central nervous system includes all the following components, except :-
- **a)** spinal cord
- **b)** medulla oblongata
- **c)** autonomic ganglia
- **d)** diencephalon

[7] Most sensory receptors :-
- **a)** are stimulated by different types of stimuli
- **b)** are stimulated only by specific stimuli
- **c)** Possess a high threshold for their specific stimuli
- **d)** only 'b' and 'c' are correct

[8] The central nervous system is connected with the peripheral nervous system by all the following types of nerve fibers, except:-
- **a)** postganglionic autonomic fibers
- **b)** preganglionic autonomic fibers
- **c)** somatic motor fibers
- **d)** autonomic sensory fibers

[9] The sensory system is involved in all the following, except :-
- **a)** initiation of reflex movements
- **b)** initiation of voluntary movements
- **c)** learning processes
- **d)** initiation of emotional responses.

[10] Which of the following divisions is NOT a part of the peripheral nervous system?
- **a)** brainstem
- **b)** sympathetic
- **c)** parasympathetic
- **d)** sensory
- **e)** enteric

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Q6: Answer the following *(5 pts/ Each 2.5 pts)*

A. Write about hemoglobin structure and functions.

B. Enumerate the plasma proteins and explain functions of them.

Biochemistry *(5Pts)*

Q7: Choose the correct answers: *(5 pts / Each 0.5 pt)*

[1] **Thyroid hormone:**
a. Decrease the absorption of carbohydrate from the intestine
b. Exerts a positive feedback action on TSH production
c. Indirectly increases the nitrogen excretion
d. Has a does not have any action on the cardiac muscle

[2] **Human growth hormone is also called as:**
a. Cortisol
b. Somatomammotropin
c. a-melanocyte stimulating hormone
d. Somatotropin

[3] The place of the enzyme molecule into which the substrate fits is:
a. Active site
b. Coenzyme
c. Peptide
d. Key part

[4] **Chemicals (other than the substrate) that affect enzyme activity are called:**
a. Exhibitors
b. Activators
c. Inhibitors
d. Inactivators

[5] **Enzymes belong to which group of chemicals:**
a. Proteins
b. Polysaccharides
c. Lipids
d. Phospholipids

[6] The hormonal action on the target organs depends on all the following factors except:
a. Cyclic AMP
b. Adenylate cyclase
c. Receptor
d. ADP

[7] One of the following factors does not affect the enzyme activity:
a. pH
b. Temperature
c. Isoenzyme concentration
d. Substrate concentration

الإسم التاريخ

اسئلة الامتحان التنافسي / الادوية

الاجابة عن جميع الاسئلة

1. Bioavailability of drug refers to: *نقاط: 1*

- ○ . Percentage of administered dose that reaches systemic circulation in the unchanged form.
- ○ Ratio of oral to parenteral dose.
- ○ Ratio of orally administered drug to that excreted in the urine
- ○ . Ratio of drug excreted unchanged in urine to that excreted as metabolites

2. The most important factor governing absorption of a drug from intact skin is: *نقاط: 1*

- ○ Molecular weight of the drug.
- ○ Site of application.
- ○ Lipid solubility of the drug.
- ○ Nature of the base used in the formulation.

3. Biotransformation of drugs is primarily directed to: *نقاط: 1*

- ○ Activate the drug.
- ○ Inactivate the drug.
- ○ Convert lipid soluble drugs into nonlipid soluble metabolites
- ○ Convert nonlipid soluble drugs into lipid soluble metabolites

4. Receptor agonists possess: *نقاط: 1*

- ○ . Affinity but no intrinsic activity.
- ○ . Intrinsic activity but no affinity
- ○ Affinity and intrinsic activity with a + sign.
- ○ Affinity and intrinsic activity with a – sign.

5. Drug efficacy' refers to: *نقاط: 1*

- ○ The range of diseases in which the drug is beneficial.
- ○ The maximal intensity of response that can be produced by the drug.
- ○ The dose of the drug needed to produce therapeutic effect.

6. Select the drug which can improve urinary flow rate in benign prostatic hypertrophy without affecting prostate size: *1 :نقاط*

- ○ Amphetamine
- ○ Prazosin.
- ○ Finasteride

7. Which of the following diuretics would be most useful in a patient with cerebral edema? *1 :نقاط*

- ○ Acetazolamide.
- ○ Amiloride.
- ○ Mannitol.

8. Following is an antagonist of ganglion type nicotinic receptors:- *1 :نقاط*

- ○ Tubercurarine.
- ○ Trimethaphan.
- ○ bungarotoxin

9. Yohimbine is an antagonist of -------receptors:- *1 :نقاط*

- ○ α1.
- ○ α2
- ○ both (a) and (b).

10. The anti-muscarinic agent preferred in the management of motion sickness is:- *1 :نقاط*

- ○ Atropine methonitrate.
- ○ Scopolamine
- ○ Homatropine methyl bromide.

11. Belladonna poisoning is best treated with:- *1 :نقاط*

- ○ Neostigmine.
- ○ Physostigmine.
- ○ Adrenaline.

12. β3 receptor is present in. *1 :نقاط*

- ○ Adipose tissue.
- ○ Smooth muscle.
- ○ . Heart.

13. - Propanolol has most prominent. *1 :نقاط*

- ○ Alpha effects.
- ○ . Beta effects.
- ○ Alpha and Beta effects

14. Which of the following anti-muscarinic drugs is short acting mydriatic ? *1 :نقاط*

- ○ Atropine.
- ○ Homatropine
- ○ Tropicamide.

15. - Which of the following is a very long-acting β2 - selective agonist that is used for asthma prophylaxis? *1 :نقاط*

- ○ Aminophyline.
- ○ Salmeterol.
- ○ Ipratropium.

16. Estrogens:- *1 :نقاط*

- ○ Block bone resorption.
- ○ Maintain negative calcium balance
- ○ Decrease HDL levels.

17. Action of norepinephrine and epinephrineare terminated by: *1 :نقاط*

- ○ Reuptake into nerve terminal.
- ○ Dilution by diffusion and uptake at extra-neuronal site.
- ○ Metabolic transformation.
- ○ all the above

18. To be a useful inhaled glucocorticoid the drug should have. *1 :نقاط*

- ○ High oral bioavailability
- ○ Low oral bioavailability.
- ○ Additional bronchodilator activity

.

19. Addition of clavulanic acid to amoxicillinis to: *1 :نقاط*

- ○ . Decrease the renal excretion of amoxicillin.
- ○ Enhance the anti-bacterial activity of amoxicillin.
- ○ Decrease the biotransformation of amoxicillin.

20. Progesterone:- *1 :نقاط*

- ○ Increases muscular contractility of fallopiantubes.
- ○ Decreases the frequency of LH pulses.
- ○ Increases the myometrial contractions.

21. Antithyroid drugs exert the following action. *1 :نقاط*

- ○ Block the action of thyroxine on peripheraltissues.
- ○ Block the action of thyroxine on pituitary.
- ○ Block the action of TSH on thyroid.
- ○ Inhibit thyroxine synthesis.

22. The drug that can directly release histamine from mast cells without involving antigen-antibody reaction is: *1 :نقاط*

- ○ Aspirin.
- ○ Procaine
- ○ Morphine.

23. The following is a selective 5-HT4 agonist: *1 :نقاط*

- ○ Buspirone.
- ○ Sumatriptan.
- ○ Cisapride.

24. The following prostanoid is a potent inducer of platelet aggregation: *1 :نقاط*

- ○ Prostacyclin.
- ○ Prostaglandin E2.
- ○ Thromboxane A2.

25. Montelukast blocks the action of the following autacoid: *1 :نقاط*

- ○ Prostacyclin.
- ○ Platelet activating factor.
- ○ Leukotriene C4/D4.

26. Select the drug which inhibits cyclooxygenase irreversibly: *1 :نقاط*

- ○ Aspirin.
- ○ Mephenamic acid.
- ○ Naproxen.

27. N-acetyl cysteine is beneficial in acute paracetamol poisoning because: *1 :نقاط*

- ○ It reacts with paracetamol to form a nontoxic complex
- ○ It inhibits generation of the toxic metabolite of paracetamol.
- ○ It replenishes hepatic glutathione which in turn binds the toxic metabolite of paracetamol.

28. Which of the following is a G protein coupled receptor:- *1 :نقاط*

- ○ Muscarinic cholinergic receptor.
- ○ Nicotinic cholinergic receptor.
- ○ Glucocorticoid receptor.

29. The LD50 is best described as which of the following: *1 :نقاط*

- ○ The dose at which 50 % of all test animals die.
- ○ The dose at which 50 % of the animals demonstrate a response to the chemical.
- ○ The dose at which all of the test animals die.

30. Two most important sites for drug elimination: *1 :نقاط*

- ○ pulmonary and liver.
- ○ liver and gastrointestinal tract.
- ○ kidney and liver.

31. Which of these is true of the endocrine system? *1 :نقاط*

- ○ secretes hormones that are transported to target cells by blood
- ○ . causes changes in metabolic activities
- ○ effects are prolonged
- ○ All of above are true.

32. Name the gland that is located at the base of the throat, just inferior to the laryngeal prominence (Adam's apple). *1 :نقاط*

- ○ Pituitary.
- ○ Pineal gland.
- ○ Thyroid

33. In the pancreas, which are the cells that secrete insulin, decrease the blood levels of glucose. *1 :نقاط*

- ○ delta.
- ○ alpha
- ○ beta

34. The endocrine gland responsible for the body's circadian rhythm is the: *1 :نقاط*

- ○ Thymus gland.
- ○ Pineal gland
- ○ Parathyroid gland

35. Endocrine glands differ from exocrine glands in that: *1 :نقاط*

- ○ Endocrine glands are ductless and exocrine glands release secretions at the body's surface or into ducts.
- ○ Endocrine glands release hormones, whereas exocrine glands release waste.
- ○ . Endocrine glands are all interconnected; whereas exocrine glands act completely independently.

36. Which is not a function of the hypothalamus? *1 :نقاط*

- ○ Affect heart rate
- ○ Control temperature
- ○ Affect water balance
- ○ Secrete FSH

37. Which of these hormones is made by the posterior pituitary? *1 :نقاط*

- ○ LH
- ○ ACTH
- ○ ADH

38. Which of the following hormones are responsible for the "fight-or-flight" response? *1 :نقاط*

- ○ Epinephrine and norepinephrine.
- ○ Insulin and glucagon.
- ○ Thyroxin and melatonin.

39. Most hormones of the endocrine system are regulated by a: *1 :نقاط*

- ○ Negative feedback mechanism
- ○ Positive feedback mechanism
- ○ Hormone-receptor complex.

40. The Glucagon is *1 :نقاط*

- ○ accelerates the conversion of glycogen into glucose.
- ○ slows down glucose formation from lactic acid.
- ○ decreases the conversion of glycogen into glucose.

41. The central nervous system includes all the following components, except :- *1 :نقاط*

- ○ . spinal cord
- ○ medulla oblongata
- ○ autonomic ganglia
- ○ diencephalon

42. . The central nervous system is connected with the peripheral nervous system by all the following types of nerve fibers, except :- *1 :نقاط*

- ○ . postganglionic autonomic fibers
- ○ preganglionic autonomic fibers
- ○ . somatic motor fibers

43. The sensory system is involved in all the following, except :- *1 :نقاط*

- ○ . initiation of reflex movements
- ○ . initiation of voluntary movements
- ○ learning processes

44. The two-element sensory receptors differ from other types of receptors in being:- *نقاط: 1*

- ○ . more numerous composed of specialized cells at the sensory nerve terminals
- ○ more widely spread in the body
- ○ more sensitive
- ○ . composed of specialized cells at the sensory nerve terminals

45. 15. Sensory receptors are classified functionally according to the following criteria, except : *نقاط: 1*

- ○ A. their location in the body
- ○ B. the nature of tissues in which they are found
- ○ C. the nature of stimuli acting on them

46. Most sensory receptors :- *نقاط: 1*

- ○ are stimulated by different types of stimuli
- ○ are stimulated only by specific stimuli
- ○ possess a high threshold for their specific stimuli

47. . A specific stimulus produces a receptor potential by *نقاط: 1*

- ○ . inhibiting Na + influx into receptor
- ○ . inhibiting K + efflux from receptor
- ○ . enhancing Na + influx into receptor

48. . Receptor potential initiated by an adequate stimulus :- *نقاط: 1*

- ○ develops always at it full magnitudes
- ○ undergoes temporal summation only
- ○ . undergoes spatial summation only
- ○ could initiate an action potential

49. . Once initiated, the receptor potential :- *نقاط: 1*

- ○ spreads to a long distance along the sensory nerve fiber
- ○ amplitude is not related to the strength of the stimulus
- ○ always generates an action potential from the receptor
- ○ stays for a variable period depending on the type of the receptor

50. Receptor potential generates :- *1 :نقاط*

- ○ . an electrotonic current which is transmitted along sensory fibers to the CNS
- ○ a nerve impulse at the receptive region of the receptor
- ○ . a state of hyperpolarization of the receptor membrane
- ○ D. a nerve impulse at the spike initiating region of the receptor

51. ---------- restores normal calcium concentration by acting directly on bone and kidney and acting indirectly on intestinal mucosa *1 :نقاط*

- ○ Growth Hormone
- ○ Thyroid hormones
- ○ Parathyroid hormones

52. is synthesized from Nicotinamide, a member of vitamin B complex. *1 :نقاط*

- ○ Tetra hydrofolate
- ○ Nicotinamide Adenine Dinucleotide
- ○ Thiamine pyrophosphate

53. Which of the following is NOT an anterior pituitary hormone: *1 :نقاط*

- ○ (Prolactin
- ○ Follicular stimulating hormone
- ○ Alpha-Melanocyte stimulating hormone
- ○ Antidiuretic hormone

54. - The velocity of enzyme reaction increases when --------- of the medium is increased. *1 :نقاط*

- ○ pH
- ○ temperature
- ○ Substrate Concentration

55. insulin *1 :نقاط*

- ○ Stimulates gluconeogenesis
- ○ Is synthesized directly
- ○ Increases the uptake of glucose from the peripheral cells
- ○ Inhibits lipolysis

56. All of the following are the adrenal gland hormones except: *1 :نقاط*

- ○ Epinephrine
- ○ Mineralocorticoids
- ○ ADH
- ○ Glucocorticoids

57. Amine-derived hormones are derivatives of the amino acids tyrosine and tryptophan. Examples are catecholamines and thyroxine. *نقاط: 1*

○ صحيح ○ خطا

58. . The thyroid gland synthesizes and secretes: GH and TSH *نقاط: 1*

○ صحيح ○ خطا

59. coenzyme is a low molecular weight organic substance, which the enzyme cannot exhibit any reaction. *نقاط: 1*

○ صحيح ○ خطا

60. The substance upon which an enzyme acts, is called the Co-enzyme *نقاط: 1*

○ صحيح ○ خطا