REPUBLIC OF MOLDOVA
MINISTERY OF HEALTH AND SOCIAL PROTECTION
STATE UNIVERSITY OF MEDICINE AND PHARMACY
NICOLAE TESTEMIŢANU

TESTS
on clinical pharmacology
(for faculty of medicine)

CHISINAU
2014

REPUBLIC OF MOLDOVA
MINISTERY OF HEALTH AND SOCIAL PROTECTION
STATE UNIVERSITY OF MEDICINE AND PHARMACY
NICOLAE TESTEMIŢANU

PHARMACOLOGY AND CLINICAL PHARMACOLOGY
DEPARTAMENT

TESTS
on clinical pharmacology

(for faculty of medicine)

Under the editorship of V. GHICAVÎI – Corresponding Member of Academy of Science of Republic of Moldova

CHISINAU
CEP *Medicina*
2014

CZU 615(079)
T 46

Tests on clinical pharmacology were developed by the staff of Pharmacology and Clinical Pharmacology Departament

Victor Ghicavîi, Member of the Academy of Sciences of Moldova, Head of Department of Pharmacology and Clinical pharmacology Professor, PhD
Lilia Podgurschi, Associate professor, PhD, Clinical pharmacologist
Vadim Gavriluta, Associate professor, PhD, Clinical pharmacologist
Nicolae Bacinschi, Associate professor, PhD, Clinical pharmacologist

Technical editor: I. Taragan

Single- and multiple-choice tests are for V-th year students to increase their ability in understudying and improving knowledge in clinical pharmacology as well as to study for final test evaluation.

DESCRIEREA CIP A CAMEREI NAȚIONALE A CĂRȚII

Tests on clinical pharmacology: (for faculty of medicine) / State Univ. of Medicine and Pharmacy *Nicolae Testemițanu*, Pharmacology and Clinical Pharmacology Dep.; ed.: V. Ghivavîi. – Chișinău: CEP *Medicina*, 2014. – 127 p.
300 ex.
ISBN 978-9975-118-65-1.
615(079)
T 46

ISBN 978-9975-118-65-1

CONTIENTS

CLINICAL PHARMACOKINETICS AND PHARMACODYNAMICS

Task: Choose one correct answer.

1. Urinary excretion may be affected by:
   A. distribution in the body fluids
   B. protein binding
   C. gastric acidity
   D. activity of cytochrome P-450
   E. mechanism of excretion
2. Drug excretion with saliva may be important to:
   A. study of their mechanism of action
   B. study their pharmacokinetic profile
   C. determine their concentration in the blood or their free fraction
   D. study the metabolic functions of the liver
   E. diagnose blood circulation
3. Tick the characteristic of glucose-6-phosphate dehydrogenase deficiency:
   A. decreases the formation of reduced glutathione
   B. reduced transfer of glucose-6-phosphate to phosphogluconate
   C. it decreases the formation of oxidized glutathione
   D. increased resistance of red blood cells
   E. observed hemolysis
4. Which of the following describes an agonist?
   A. any substance that brings about a change in biologic function through its chemical action
   B. a specific regulatory molecule in the biologic system a drugs interaction with
   C. a drug that binds to a receptor and stimulates cellular activity
   D. a drug that binds to a receptor and inhibits or opposes cellular activity
   E. a drug aimed at parasites infecting the patient
5. What determines the degree of movement of a drug among body compartments?
   A. partition constant
   B. degree of ionization
   C. pH
   D. size
   E. all of the above

6. Which of the following is NOT a protein target for drug binding?
   A. side of action (transport)
   B. enzymes
   C. carrier molecules
   D. receptors
   E. ion channels
7. Which of the following is an example of a drug acting directly through receptors?
   A. protamine binds stoichiometrically to heparin anticoagulants
   B. adrenergic beta-blockers for thyroid hormone-induced tachycardia
   C. epinephrine for increasing heart rate and blood pressure
   D. cancer chemotherapeutic agents
   E. mannitol for subarachnoid hemmorhage
8. How does the glomerular filtration rate (GFR) change after the age of 40?
   A. it increase 1% each year
   B. it increases 2% each year
   C. it decreases 1% each year
   D. it decreases 2% each year
   E. it does not depend on age
9. If a drug is 80% bound to blood elements or plasma proteins, what part is considered the free form?
   A. 20%
   B. 40%
   C. 50%
   D. 80%
   E. 100%
10. Which of the following describes minimal effective concentration (MEC)?
   A. the minimal drug plasma concentration that can be detected
   B. the minimal drug plasma concentration to enter tissues
   C. the minimal drug plasma concentration to interact with receptors
   D. the minimal drug plasma concentration to produce effect
   E. the minimal drug plasma concentration to reach therapeutic levels

11. If a patient misses three doses of his daily drug, which of the following (in general) is the best solution?
    A. to take a 4x dose at the next dose time
    B. to wait 3 more days (week total) then return to normal regimen
    C. to do nothing and continue normal regimen
    D. to set up an appointment to have the patient evaluated
    E. to prescribe a higher dosage pill so missed doses will have less effect
12. Which of the following drug permeation mechanisms occurs across epithelial tight junctions and is driven by a concentration gradient?
    A. aqueous diffusion
    B. lipid diffusion
    C. carrier molecules
    D. endocytosis and exocytosis
13. Which of the following drug permeation mechanisms uses the Henderson- Hasselbalch equation for the ratio of solubility for weak acids or weak bases?
    A. aqueous diffusion
    B. lipid diffusion
    C. carrier molecules
    D. endocytosis and exocytosis
14. Which of the following drug permeation mechanisms is used for peptides, aminoacids, glucose, and other large or insoluble molecules?
    A. aqueous diffusion
    B. lipid diffusion
    C. carrier molecules
    D. endocytosis and exocytosis
15. Which of the following is the amount of absorbed drug per administered amount?
    A. bioavailability
    B. bioequivalence
    C. drug absorption
    D. bioinequivalence
    E. dosage
16. Which of the following is NOT needed for drug bioequivalence?
    A. the same active ingredients
    B. the same strength or concentration
    C. the same dosage form

D. the same route of administration
E. the same side effects

17. What bioavailability is assumed for intravenous (IV) dosages?
    A. 0%
    B. 25%
    C. 50%
    D. 75%
    E. 100%
18. Although morphine (Avinza, Oramorph SR, MS Contin) is well-absorbed when administered orally (PO), how much of the drug is metabolized on its first pass through the liver?
    A. 90%
    B. 70%
    C. 50%
    D. 30%
    E. 10%
19. Which of the following is NOT a pharmacokinetic process?
    A. alteration of the drug by liver enzymes
    B. drug metabolites are excreted with urine
    C. movement of drug from the gut into general circulation
    D. the drug causes dilation of coronary vessels
    E. the drug is readily deposited in fat tissue
20. Which of the following can produce a therapeutic response? A drug that is:
    A. bound to plasma albumin
    B. concentrated in the bile
    C. concentrated in the urine
    D. not absorbed from the GI tract
    E. unbound to plasma proteins
21. Which of the following is the most proper description of steroid hormones with respect to their ability to gain an access to intracellular binding sites?
    A. they cross the cell membrane via aqueous pores
    B. they have a high permeability coefficient
    C. they are passively transported via membrane carriers
    D. they require vesicular transport
    E. their transport requires the hydrolysis of ATP

22. If the pKa of Aspirin (acetylsalicylic acid) is 3.5 and the pH of the stomach is 2.5, how much Aspirin is in the protonated species in the stomach and is this amount available for absorption?
    A. _ 91%; Yes
    B. _ 91%; No
    C. _ 9%; Yes
    D. _ 9%; No
23. What percentage of Aspirin would be ionized in the blood compartment (pH = 7.4) assuming pH is 7.5 and Aspirin pKa is 3.5?
    A. (10,000 - 1) / 1 = 99.99%
    B. (100 - 1) / 1 = 99%
    C. none
    D. 1 / (100 - 1) = 0.9%
    E. 1 / (10,000 - 1) = 0.009%
24. If the pH – pKa = –1, what percentage of weak base is nonionized?
    A. 99
    B. 90
    C. 50
    D. 10
    E. 1
25. If the pH – pka = 2, what percentage of weak acid is nonionized?
    A. 99
    B. 90
    C. 50
    D. 10
    E. 1
26. The principle of drug manipulation for excretion of a drug out of the renal tubule can be accomplished by:
    A. acidifying the urinary pH
    B. adjusting the urinary pH to protonate weakly acidic drugs
    C. adjusting the urinary pH to unprotonate weakly basic drugs
    D. adjusting the urinary pH to ionize the drug
    E. by neutralizing the urinary pH
27. Aspirin is a weak organic acid with a pKa of 3.5. What percentage of a given dose will be in the lipid-soluble form at a stomach pH of 1.5?
    A. about 1%
    B. about 10%
    C. about 50%

D. about 90%
E. about 99%

28. For which of the following drugs is excretion most significantly accelerated by acidification of the urine?
    A. weak acid with pKa of 5.5
    B. weak acid with pKa of 3.5
    C. weak base with pKa of 7.5
    D. weak base with pKa of 7.1
29. In wcich of the following routes of administration the bioavailability is 100%?
    A. oral
    B. intravenous
    C. intraosseous
    D. cerebrospinal fluid
    E. whatever route attains the target drug concentration in plasma (CT)
30. What organ is responsible for metabolism in the "first pass effect"?
    A. brain
    B. heart
    C. kidney
    D. liver
    E. spleen
31. Which of the following routes of administration has a bioavailability of about 80–100%, is usually very slow absorbing, and has a prolonged duration of action?
    A. intravenous
    B. intramuscular
    C. subcutaneous
    D. rectal
    E. transdermal
32. Which of the following routes of administration is the most convenient, although it may have bioavailability from 5 to 100%?
    A. oral
    B. intravenous
    C. intramuscular
    D. subcutaneous
    E. transdermal

33. Which of the following enteral administration routes has the largest first-pass effect?
    A. sublingual
    B. buccal
    C. rectal
    D. oral
34. Which of the following administration routes is not often used, is painful, and has a risk of infection and adhesion?
    A. epidural
    B. intraarterial
    C. intraperitoneal
    D. intravenous
    E. intraosseous
35. Which of the following is NOT an advantage of prolonged release medications?
    A. less frequent administration
    B. therapeutic effect overnight
    C. lower incidence of side effects
    D. patient compliance
    E. more fluctuation in plasma concentration
36. Which of the following would receive a drug slowly?
    A. liver
    B. brain
    C. fat
    D. muscle
    E. kidney
37. Which of the following is the least important for passage through capillary walls but is the most important for passage through the cell wall?
    A. molecular size
    B. lipid solubility
    C. diffusion constant
    D. pH
    E. pKa
38. Which of the following is the most important for movement through capillary walls?
    A. molecular size
    B. lipid solubility
    C. diffusion constant

D. pH
E. pKa

39. Which of the following locations would most trap a lipid soluble drug?
    A. blood
    B. intestines
    C. brain
    D. stomach
40. What type of drugs can cross the blood-brain barrier (BBB)?
    A. large and lipid-soluble
    B. large and lipid-insoluble
    C. small and lipid-soluble
    D. small and lipid-insoluble
41. Which of the followind plasma proteins to acidic drugs, such as phenytoin, bind primarily to?
    A. α1-fetoprotein (AFP)
    B. gc globulin
    C. albumin
    D. α 1-acid glycoprotein (AAG)
    E. transcortin
42. Which of the followind plasma proteins to basic drugs, such as lidocaine, bind primarily to?
    A. α 1-fetoprotein (AFP)
    B. gc-globulin (GcG)
    C. albumin
    D. α 1-acid glycoprotein (AAG)
    E. transcortin
43. What does a decrease in drug-protein binding lead to?
    A. decrease in the unbound drug concentration
    B. increase in free drug
    C. increase in rate of drug elimination
    D. decrease in volume of distribution
44. Which of the following locations can accumulate lipid-soluble drugs, has little or no receptors, and can hold distributed drugs like barbiturates?
    A. liver
    B. kidney
    C. brain

D. fat
E. fetus

45. Which of the following locations has a high blood flow and is the site of excretion?
    A. liver
    B. kidney
    C. brain
    D. fat
    E. fetus
46. Which of the following is NOT a phase II substrate?
    A. glucuronic acid
    B. sulfuric acid
    C. acetic acid
    D. amino acids
    E. alcohol
47. Which of the following reactions is phase II and NOT phase I?
    A. oxidations
    B. reductions
    C. conjugations
    D. deaminations
    E. hydrolyses
48. Which of the following metabolically active tissues is the principle organ of drug metabolism?
    A. skin
    B. kidneys
    C. lungs
    D. liver
    E. gastrointestinal tract
49. What is the goal of the P450 system (microsomes pinched off from endoplasmic reticulum)?
    A. metabolism of substances
    B. detoxification of substances
    C. increase of pH in compartments containing substances
    D. decrease of pH in compartments containing substances
    E. A and B
50. Which of te following concepts is true in cases when a patient who is a chronic user of barbiturates would need more drug to produce the same effects?
    A. increased induction
    B. decreased induction

C. increased inhibition
D. decreased inhibition

51. Which of the following are the drugs that induce CYP 1A2 and have their metabolism induced by 1A2?
    A. carbamazepine and phenobarbital; theophyline and warfarin
    B. phenobarbitol and phenytoin ; phenytoin and warfarin
    C. carbamazepine and phenytoin; warfarin
    D. carbamazepine; cyclosporine
52. Which of the following are the drugs that inhibit CYP 1A2 and have their metabolism inhibited by 1A2?
    A. SSRIs; phenytoin and warfarin
    B. amiodarone and cimetidine; phenytoin and warfarin
    C. cimetidine, erythromycin, and grapefruit juice; theophyline and warfarin
    D. cimetidine and erythromycin; cyclosporine
53. Which of the following groups of people is the least likely to have biotransformation effects due to altered hepatic function?
    A. infants
    B. adults
    C. elderly
    D. chronic alcoholics
    E. acetaminophen overdosage
54. One liter contains 1,000 mg of a drug. In one hour, 900 mg of the drug remains. What is the clearance?
    A. 100 mL
    B. 100 mL/hr
    C. 1 mg/ml
    D. 100 mg
    E. 1 mg/sec
55. To maintain a drug concentration at steady state, the dosing rate should equal the elimination rate. Which of the following is true? (CL = Drug Clearance)
    A. dosing rate = CL + target concentration
    B. dosing rate = CL - target concentration
    C. dosing rate = CL * target concentration
    D. dosing rate = CL / target concentration
56. Which of the following is the most useful in determining the rate of elimination of a drug, in general?
    A. drug concentration in urine (renal elimination)
    B. drug concentration in stool (bilary elimination)

C. drug concentration in blood
D. drug concentration in brain
E. drug oxidation rate

57. For first-order drug elimination, given the half-life equation of t(1/2) is (0.693 * Vd) / CL. How many half-lives would be necessary to reach a steady state (_95%) without a loading dose?
A. 1 to 2
B. 2 to 3
C. 3 to 4
D. 4 to 5
E. 5 to 6

58. If a drug with a 2-hour half-life is given in an initial dose of 8 mcg/ml, assuming first-order kinetics, how much drug will be left 6 hours?
A. 8 mcg/ml
B. 4 mcg/ml
C. 2 mcg/ml
D. 1 mcg/ml
E. 0.5 mcg/ml

59. A target concentration of 7.5 mg/L of theophylline is required for a 60 kg patient. What is the loading dose, given the following: Vd = 0.5 L/kg, Cl = 0.04 L/kg/hr, t(1/2) = 9.3 hr?
A. 0.5 L/kg * 60 kg * 7.5 mg/L = 225 mg/h, infusion
B. 0.5 L/kg * 60 kg * 7.5 mg/L = 225 mg, bolus
C. 0.04 L/kg/hr * 60 kg * 7.5 mg/L = 18 mg/h, infusion
D. 0.04 L/kg/hr * 60 kg * 7.5 mg/L = 18 mg, bolus

60. Which of the following is NOT an approach to drug development?
A. chemical modification of a known molecule
B. random screening for biologic activity (e.g. natural products)
C. rational drug design
D. combination of known drugs (e.g. Tylenol with codeine)
E. biotechnology and cloning

61. Which of the following is considered a therapeutic index (or ratio)?
A. T.I. = TD50 / ED50
B. T.I. = LD50 / ED50
C. T.I. = ED50 / TD50
D. T.I. = ED50 / LD50
E. A and B

62. Which of the following can be used as a relative indicator of the margin of safety of a drug?
    A. LD 50
    B. ED 50
    C. EC 50
    D. TD 50
    E. T.I.
63. Which of the following is the most relevant use of therapeutic index?
    A. guide for toxicity in therapeutic the setting
    B. multiple measures of effectiveness are possible (e.g. aspirin)
    C. measure of impunity with which an overdose may be tolerated
    D. toxicities may be idiosyncratic (e.g. propranolol in asthmatics)
64. Which of the following refers to an increased intensity of response to a drug?
    A. idiosyncratic
    B. hyporeactive
    C. hyperreactive
    D. hypersensitive
    E. tolerance
65. Which of the following refers to tachyphylaxis?
    A. responsiveness increased rapidly after administration of a drug
    B. responsiveness decreased rapidly after administration of a drug
    C. responsiveness increased rapidly after maintenance of a drug (hypersensitive)
    D. responsiveness decreased rapidly after maintenance of a drug (desensitized)
66. Which of the following is increased in intracellular concentration due to second messengers such as IP3?
    A. K+
    B. Ca++
    C. Cl
    D. Na+
    E. Mg++
67. Which of the following describes the pathway of nitric oxide (NO)?
    A. stimulates guanylyl cyclase, increases cGMP concentration, vasodilation
    B. stimulates guanylyl cyclase, decreases cGMP concentration, vasodilation

C. stimulates guanylyl cyclase, increases cGMP concentration, vasoconstriction
D. inhibits guanylyl cyclase, increases cGMP concentration, vasodilation
E. inhibits guanylyl cyclase, decreases cGMP concentration, vasoconstriction

68. A patient is in the hospital and is stable on digoxin 0.175 mg IV qd (daily). How much digoxin in mg. would you need to give your patient orally, given that the bioavailability for oral digoxin tablets is 0.7?
A. (0.175 * 0.7) / (1.0) = 0.1225 mg
B. (0.175 * 1) / (0.7) = 0.25 mg
C. (0.175 + 0.7) / (1.0) = 0.875 mg
D. (0.175 + 1) / (0.7) = 1.67 mg
E. no change is necessary

69. A patient diagnosed with type 2 diabetes is administered an oral dose of 0.1 mg chloropropamide, an insulin secretagogue and weak acid with a pKa of 5.0. What is the amount of this drug that could be absorbed from the stomach at pH 2.0?
A. 99.9 μg
B. 90 μg
C. 50 μg
D. 0.05 mg
E. 0.01 mg

70. A patient presents with acute-onset cirrhosis of the liver. He is found to have hypoalbuminemia. In severe cirrhosis it is expected that AAG will be decreased, but the patient presents with increased AAG due to the inflammatory response. Which of the following is the most likely cause?
A. increased acidic drug binding and increased basic drug binding
B. increased acidic drug binding and decreased basic drug binding
C. decreased acidic drug binding and increased basic drug binding
D. decreased acidic drug binding and decreased basic drug binding

71. Specify the clinical particularity of the half-life:
A. it permits to determine the rate of excretion of drugs from the body
B. it permits to determine in which media of the body the drugs penetrate
C. it permits to determine the dose and the intervals between doses of drugs

D. it permits to determine the penetration of drugs into the cell
E. it determines the diffusion of drugs into the extracellular space

72. Which metabolic mechanisms is characteristic of intestine?
A. methylation
B. conjugation with sulfuric acid
C. acetylation
D. glucuronyl conjugation
E. binding to glutathione

Task: Choose two or more correct answers.

1. Note the parameters of pharmacokinetics:
A. half-life of elimination
B. volume of distribution
C. dose
D. mechanism of action
E. bioavailability
2. Which of the following statements define the clinical significance of plasma concentration?
A. it determines the therapeutic efficacy of the drugs
B. it is important to define the binding of drugs to plasma proteins
C. it determines the probability of side effects
D. it indicates the correlation of the drug concentration with the place of action
E. it determines the dosing interval
3. Which of the following statements define the clinical values of volume of distribution?
A. it determines the rate of excretion of drugs from the body
B. it determines in which media of the body the drugs penetrate
C. it determines the penetration of drugs into the cell
D. it determines the dose and the intervals between doses of drugs
E. it determines the diffusion of drugs into the extracellular space
4. Tick the clinical features of the free fraction of drug:
A. it does not penetrate through the membrane
B. it determine the pharmacological effect
C. it is exposed to biotransformation
D. it determine the long latency period
E. it define great activity and short duration of action

5. Mark clinical features of the bound fraction of drugs
   A. the bound fraction is NOT able to pass through the membrane
   B. it determine the pharmacological effect
   C. it has a shorter latent period
   D. it define great activity and short duration of action
   E. it define a lower activity and greater duration of action
6. Which mechanisms are characteristic of drug excretion through the kidneys?
   A. active and passive tubular secretion
   B. glomerular filtration
   C. pinocytosis
   D. facilitated diffusion
   E. active and passive reabsorption
7. Tick the parameters characterizing the pharmacodynamic effect
   A. global pharmacological effect
   B. power of action
   C. selectivity of action
   D. primary pharmacological effect
   E. intensity of action
8. Tick the parameters of drug safety:
   A. the maximum therapeutic dose
   B. range of therapeutic action
   C. maximum single dose
   D. therapeutic index
   E. loading dose
9. Tick which traits are characteristic of idiosyncrasy:
   A. more pronounced manifestation of the known effects
   B. it is a kind of tolerance
   C. it can determine the gene polymorphism
   D. manifestation of special effects
   E. it is caused by the presence of antigens
10. Tick the characteristic features of the Rebound syndrome:
   A. it develops after withdrawal of analogue of endogenous substances
   B. it develops after withdrawal of pharmacological agonist
   C. it develops after withdrawal of the pharmacological antagonist
   D. there is an increase in the number of sensitive receptors
   E. marked decrease in the number of sensitive receptors

11. What features are characteristic of withdrawal syndrome?
    A. it develops after withdrawal of analogue of endogenous substances
    B. it develops after withdrawal of pharmacological agonist
    C. marked impaired secretion of endogenous substances
    D. marked increase in the number of sensitive receptors
    E. marked decrease in the number of sensitive receptors
12. Tick the characteristics of butyrylcholinesterase failure:
    A. it increases the effect of antidepolarizing muscle relaxants
    B. it increases the effect of depolarizing muscle relaxants
    C. it increases the hydrolysis of acetylcholine
    D. it reduces the hydrolysis of acetylcholine
    E. it eliminates the pharmacological effects
13. Tick the characteristics of catalase deficiency:
    A. the effect of hydrogen peroxide increases
    B. the hydrogen peroxide activity reduces
    C. the effect of ascorbic acid increases
    D. the formation of molecular oxygen decreases
    E. the formation of atomic oxygen decreases
14. Tick the characteristics of acetyltransferase failure:
    A. increased acetylation of drugs in persons with slow acetylation
    B. decreased acetylation of drugs in persons with fast acetylation
    C. increases the half-life of drugs in persons with slow acetylation
    D. increases the half-life of drugs in persons with fast acetylation
    E. reduced half-life of drugs in persons with fast acetylation
15. Tick the characteristics of glycoprotein P deficiency:
    A. it increases in the pumping function of the intestinal wall
    B. it reduces pump function in the intestinal wall
    C. it reduces the concentration of drug in the blood
    D. it increases the concentration of drug in the blood
    E. it reduces the effect of drugs
16. Xenobiotics are considered:
    A. endogenous
    B. exogenous
    C. inorganic poisons
    D. toxins
    E. ligands

ANSWER KEY

Clinical pharmacokinetics and pharmacodynamics

Task: one correct answer

1) B
2) B
3) A
4) C
5) E
6) A
7) C
8) C
9) A
10) D
11) C
12) A
13) B
14) C
15) A
16) E
17) E
18) A
19) D
20) E
21) B
22) A
23) A
24) D
25) E
26) D
27) E
28) C
29) B
30) D
31) E
32) A
33) D
34) C
35) E
36) C
37) B
38) A
39) D
40) C
41) C
42) D
43) C
44) D
45) B
46) E
47) C
48) D
49) E
50) D
51) A
52) C
53) B
54) B
55) C
56) C
57) D
58) D
59) B
60) D
61) E
62) E
63) C
64) C
65) B
66) D
67) A
68) B
69) A
70) C
71) C
72) B

Task: two or more correct answers.

1) A, B, E
2) A, C, D
3) B, C, E
4) B, C, E
5) A, E
6) A, B, E
7) B, C, E
8) C, D
9) C, D
10) B, C
11) A, C
12) B, D
13) B, D
14) B, D
15) C, E
16) B, C, D

DRUGS ACTING ON RESPIRATOTY SYSTEM

Task: Choose one correct answer

1. Which β-adrenomimetic has the duration of action of 10-12 hours?
   A. fenoterol
   B. salbutamol
   C. terbutaline
   D. formoterol
   E. isoprenaline
2. Which adrenomimetic is more effective in hypoglycemic coma?
   A. Ethylephrine
   B. Propranolol
   C. norepinephrine
   D. epinephrine
   E. salbutamol
3. Which group of drugs is used as bronchodilator remedies?
   A. M-cholinomimetics
   B. M-cholinoblockers
   C. N-cholinomimetics
   D. N-cholinoblockers
   E. anticholinesterases
4. What is the therapeutic effect of sympathomimetics in bronchial asthma?
   A. vasodilation
   B. striated muscle stimulation
   C. cardiac stimulation
   D. vasoconstriction with hypertension, weak bronchoconstriction
   E. bronchodilation and inhibition of histamine release by reaction Ag + Ac
5. Bronchodilator effect of sympathomimetics, administered by inhalation, occurs:
   A. in 4 days
   B. slowly
   C. quickly
   D. at the end of the first week of treatment
   E. systematically, over a month of treatment

6. When does the effect of corticosteroids appear in intravenous administration?
   A. 10-15 minutes after administration
   B. one month after systematical administration
   C. in 5-7 days of systematical administration
   D. over 12 to 14 hours after administration
   E. over 24-72 hours after administration
7. Tick the antitussive drug with mixed mechanism of action:
   A. glaucine
   B. oxeladine
   C. dextromethorphan
   D. benbroperine
   E. stoptusin
8. What effect is characteristic of prenoxdiazine (libexine)?
   A. local anesthetic, antitussive, antispasmodic
   B. antitussive, expectorant, broncholitic, anti-inflammatory
   C. bronchodilator and antitussive drug with mixted mechanism of actin
   D. antitussive drug with mixted mechanism of action
   E. central antitussive drug
9. Pick out the bronchodilator drug related to xanthine: atropine
   A. orciprenaline
   B. epinephrine
   C. theophylline
   D. ketotifen
9. Tick out the bronchodilator drug belonging to sympathomimetics:
   A. isoprenaline
   B. ephedrine
   C. atropine
   D. salbutamol
   E. clonidine
10. Tick the side effect of theophylline:
   A. bradycardia
   B. increased myocardial oxygen demand
   C. depression of respiratory centre
   D. elevation of arterial blood pressure
11. Tick the drug which is a 5-lipoxygenase inhibitor:
   A. budesonide
   B. sodium cromoglycate
   C. zileuton

D. beclometazone
E. prednisolone

12. Tick the drug which is a leucotriene receptor antagonist:
    A. sodium cromoglycate
    B. zafirlucast
    C. zileuton
    D. triamcinolone
    E. aminophylline
13. When is the maximum effect of inhaled glucocorticoids gained:
    A. 20-30 minutes after ihalation
    B. 12 hours after inhalation
    C. 24 hours after inhalation
    D. 5-7 days after systematical inhalation
    E. 1 month after systematical inhalation
14. Indications for administration of histamine H1 antagonists are the following, EXCEPT:
    A. prevention or treatment of allergic reactions symptoms (rhinitis, urticaria)
    B. management of seizure states
    C. nausea and vomiting in pregnancy ("morning sickness")
    D. treatment of sleep disorders
15. The side effect of histamine H1 antagonists of first-generation is:
    A. aplastic anemia
    B. vomiting, tinnitus, decreased hearing
    C. sedation
    D. gastric ulcers
    E. tolerance

Task: Choose two or more correct answers

1. Why are β-2 adrenomimetics used in bronchial asthma mainly by inhalation?
    A. because they are not absorbed from the digestive tract
    B. they do not cause marked systemic effects
    C. they are completely inactivated by first-pass metabolism
    D. the effect develops over 2-5 minutes after administration
    E. they are effective only for prophylaxis of asthma attack
2. Select the side effects of sympathomimetics:
    A. allergic reactions
    B. tachycardia and arrhythmias

C. hypolipidemia
D. drowsiness
E. tolerance

3. Select the effects of M-cholinoblockers on the respiratory tract:
   A. they increase secretion of bronchial glands
   B. they dilate medium caliber bronchi
   C. they reduce the activity of ciliar and mucociliary transport
   D. they inhibit the release of mediators from mast cells
   E. they dilate small caliber bronchi
4. Select indications for M-cholinoblockers:
   A. chronic obstructive bronchitis
   B. bronchial asthma of moderat and mild form
   C. bronchospasm in surgery
   D. acute bronchopneumonia
   E. pulmonary edema (in complex treatment)
5. Sympathomimetics used like bronchodilators are classified into the following groups:
   A. α1-AM
   B. α2-AM
   C. α, β-AM
   D. β2-AM
   E. β1, β2-AM
6. Sympathomimetics used as bronchodilators according to the duration of action are classified in:
   A. short-term (0,5-2 hours)
   B. medium-term (4-10 hours)
   C. medium-term (3-6 hours)
   D. long-term (10-12 hours)
   E. long-term (12-24 hours)
7. The mechanism of action of methylxanthines in bronchial asthma consists in:
   A. phosphodiesterase inhibition achieve in therapeutic concentrations
   B. inhibition of phosphodiesterase in toxic concentrations
   C. adenosine receptors blockade
   D. stimulation of presynaptic release of norepinephrine fromsympathetic nerve endings
   E. increase of histamine release from lung mast cells

8. Tick the drugs belonging to opioid antitussives:
   A. glaucine
   B. dextrometorphine
   C. oxeladine
   D. prenoxidazine
   E. codeine
9. Tick the drugs belonging to non-opioid antitussives:
   A. oxeladine
   B. butamirat
   C. codeine
   D. levopropoxifene
   E. Prenoxidiazine
10. Tick the expectorants with reflex mechanism of action:
   A. sodium benzoate
   B. derivatives of ipecacuanha
   C. trypsin
   D. ambroxol
   E. thermopsis derivatives
11. Tick antitussive drugs with peripheral effect:
   A. codeine
   B. butamirat
   C. levodropropizine
   D. glaucine
   E. prenoxidiazine
12. Tick proteolytic enzymes:
   A. potassium iodide
   B. desoxiribonuclease
   C. carbocysteine
   D. eucalypt oil
   E. acetylcysteine
13. Select the groups of drugs used for bronchial asthma treatment?
   A. methylxanthines
   B. m-cholinomimetics
   C. beta2-adrenoblockers
   D. glucocorticoids
   E. phosphodiesterase inhibitors
14. Tick the drugs belonging to nonselective beta-adrenomimetics:
   A. salbutamol
   B. isoprenaline

C. salmeterol
D. formoterol
E. orciprenaline

15. Select the side-effects characteristic of nonselective beta-adrenomimetics:
    A. depression of breath centre
    B. tachycardia
    C. peripheral vasoconstriction
    D. dry mouth
    E. peripheral vasodilation
16. The mechanism of action of methylxanthines consists in:
    A. inhibition of phosphodiesterase
    B. stimulation of beta2-adrenoreceptors
    C. inhibition of inflammatory cytokines production
    D. inhibition of m-cholinoreceptors
    E. agonists of adenosine
17. Tick the M-cholinoblockers agents used mainly as antiasthmatics:
    A. atropine
    B. ipratropium
    C. platiphylline
    D. metacin
    E. oxitropium
18. All of the following drugs are inhaled glucocorticoids, EXCEPT:
    A. triamcinolone
    B. beclometazone
    C. prednisolone
    D. budesonide
    E. flixotide
19. Choose the drugs belonging to membranestabilizing drugs:
    A. zileuton
    B. sodium cromoglycate
    C. zafirlucast
    D. ketotifen
    E. prednizolone
20. Select the properties of β-adrenomimetics:
    A. they dilate small diameter bronchi
    B. they dilate big diameter bronchi
    C. they dilate middle diameter bronchi

D. they liquefies the phlegm
E. they increase the of sputum viscosity

21. Select the properties of M-cholinoblockers:
A. they dilate small diameter bronchi
B. they dilate big diameter bronchi
C. they dilate middle diameter bronchi
D. they liquefie the phlegm
E. they increase the viscosity of sputum

22. Select the indications of M-cholinoblockers:
A. chronic obstructive bronchitis
B. bronchial asthma of middle evolution
C. bronchospasm in surgery
D. acute bronchopneumonia
E. pulmonary edema

23. Choose the useful effects of glucocorticoids in bronchial asthma:
A. antiinflammatory
B. antiallergic
C. immunodepressive
D. antishock
E. increase sensibility of β-adrenoreceptors

24. Indication for administration of H1 histamine antagonists is:
A. prevention or treatment of symptoms of allergic reactions (rhinitis, urticaria)
B. motion sickness and vestibular disturbances
C. nausea and vomiting in pregnancy ("morning sickness")
D. sleep disturbances
E. increase of the effect of CNS stimulants

25. Antiallergic effect of glucocorticoids is caused by:
A. suppression of leukocyte migration and stabilizing lysosomal membranes
B. increase of capillary permeability associated with histamine release
C. suppression of the immune response by inhibiting antibody synthesis
D. suppression of T- and B- lymphocytes correlation
E. inhibition of immediate and late type of allergy reactions

ANSWER KEY

Drugs acting on respiratory system

Task: one correct answer

1) D
2) D
3) B
4) E
5) C
6) A
7) D
8) A
9) D
10) E
11) B
12) C
13) B
14) D
15) B
16) C

Task: two or more correct answers

1. B, D
2. B, E
3. B, C, D
4. A, B, C
5. C,D,E
6. A,C, D
7) B, C
8) B, E
9) A, B, E
10) B, E,
11) C, E
12) B, C, E
13) A, D, E
14) B, E
15) B, E
16) A, E
17) B, E
18) A, C
16) A, E
17) B, E
18) A, C
19) B, D, E
20) A, D
21) B, C, E
22) A, B, C
23) A, B, E
24) A, B, C, D
25) A, C, D, E

DRUGS USED IN GASTROINTESTINAL DISEASES

Task: Choose one correct answer

1. Which of the following drugs is a non-systemic antacid?
   A. sodium bicarbonate
   B. ranitidine
   C. sucralfate
   D. misoprostol
   E. magnesium hydroxide
2. Each of the following drugs inhibits gastric secretion, EXCEPT:
   A. antigastrinic substances
   B. carboanhidrase inhibitors
   C. parasympatholytics
   D. antacids
   E. histaminergic H2 blockers
3. Cimetidine may cause the following side effects, EXCEPT:
   A. headache
   B. gynecomastia
   C. galactorrhea
   D. oligospermia
   E. tachycardia
4. Which of the following drugs inhibits the secretion of hydrochloric acid?
   A. sucralfate
   B. omeprazole
   C. carbenoxolone
   D. colloidal bismuth subcitrate
   E. magnesium hydroxide
5. Which drugs have direct protective effect on ulcerative lesions?
   A. cimetidine
   B. acetazolamide
   C. sucralfate
   D. omeprazole
   E. sodium bicarbonate
6. Which of antivomitive drugs is used in pregnancy?
   A. serotonin antagonist
   B. H1-antihistamines
   C. dopamine antagonists

D. cholinolitics
E. neuroleptics

7. Which of the following preparations is used to prevent vomiting in motion sickness?
   A. serotonin antagonist
   B. cholinomimetics
   C. dopamine antagonists
   D. cholinolitics
   E. neuroleptics
8. All irritant purgatives act only in the colon, EXCEPT:
   A. bisacodyl
   B. phenolphthalein
   C. extract from frangula
   D. castor oil
   E. izapheninum
9. The majority of listed drugs are used to remove flatulence, EXCEPT:
   A. carminatives
   B. parasympathomimetics
   C. the surface-active substances
   D. adsorbents
   E. antacids
10. All listed drugs are hepatoprotective, EXCEPT:
   A. silymarin
   B. riboxine
   C. sirepar
   D. sulpiride
   E. essentialle
11. All listed drugs are antidiarrheic drugs, EXCEPT:
   A. loperamide
   B. bisacodyl
   C. bactisubtil
   D. diosmectin
   E. atropine
12. All the following drugs are antiflatulents, EXCEPT:
   A. medical charcoal
   B. dimethicone
   C. carminative plant
   D. scopolamine
   E. parasympathomimetics

13. Metoclopramide is contraindicated in the following cases, EXCEPT:
    A. pheochromocytoma
    B. hypotension
    C. epilepsy
    D. tardive dyskinesia
    E. breast cancer
14. Metoclopramide may cause the following side effects, EXCEPT:
    A. drowsiness
    B. neurosis
    C. hypotension
    D. extrapyramidal symptoms
    E. hypertension
15. Metoclopramide has the following properties, EXCEPT:
    A. stimulation of antral contractions
    B. increase of gastric emptying
    C. prevention of gastro-oesophageal and duodenogastric reflux
    D. increase of jejunum peristalsis
    E. stimulation of colon motility
16. Bactisubtil is indicated in the following cases, EXCEPT:
    A. diarrhea
    B. colitis
    C. vomiting
    D. superinfection
    E. disbacteriosis
17. Loperamide may cause the following side effects, EXCEPT:
    A. distension and abdominal pain
    B. vomiting
    C. dry mouth
    D. rash
    E. drug dependency
18. Loperamide is contraindicated in the following cases, EXCEPT:
    A. bowel obstruction
    B. acute ulcerative colitis and pseudomembranous colitis
    C. first trimester of pregnancy
    D. acute diarrhea
    E. lactation
19. Tick the main approach in peptic ulcer treatment:
    A. neutralization of gastric acid
    B. eradication of Helicobacter pylori
    C. inhibition of gastric acid secretion

D. increase of regeneration
E. all the above

20. Which of the following drugs may cause reversible gynecomastia?
    A. omeprazole
    B. pirenzepine
    C. cimetidine
    D. sucralfate
    E. maalox
21. Which drug is an analog of prostaglandin E1?
    A. bismuth tripotassimu dicitrate
    B. sucralfate
    C. omeprazole
    D. misoprostole
    E. somatostatin
22. Select the drug stimulating mucous barrier protective function:
    A. bismuth tripotassimu dicitrate
    B. famotidine
    C. misoprostol
    D. omeprazole
    E. sucralfate
23. Choose the drug which causes constipation:
    A. sodium bicarbonate
    B. aluminium hydroxide
    C. calcium carbonate
    D. magnesium oxide
    E. bismuth tripotassimu dicitrate
24. Most of the given drugs are antacids, EXCEPT:
    A. misoprostol
    B. maalox
    C. magnesium oxide
    D. almagel
    E. aluminium trisilicate
25. Choose the drug affecting the biliary system and relaxing Oddy sphincter:
    A. cholosas
    B. atropine
    C. oxaphenamide
    D. drotaverine
    E. cholenzyme

Task: Choose two or more correct answers.

1. What drugs can cause increased bowel movements?
   A. loperamide
   B. sucralphate
   C. aluminum hydroxide
   D. magnesium oxide
   E. isaphenin
2. What ulcer remedies are not recommended in patients with hypertension?
   A. carbenoxolone
   B. sodium bicarbonate
   C. pirenzepine
   D. omeprazole
   E. acetazolamide
3. The mechanism of action of metoclopramide consists in:
   A. antagonism with dopamine-2 receptors in the CNS and GI tract
   B. promoting neurotransmitter release from mesenteric neurons
   C. cholinoblocking mechanism
   D. excitation chemoreceptors with the increase of intestinal peristalsis
   E. increasing the reactivity for acetylcholine
4. What types of chlorhydro-peptic secretion is not influenced by anticholinergic drugs?
   A. gastric acid secretion
   B. cephalic phase secretion
   C. intestinal phase secretion
   D. gastrin induced secretion
   E. histamine induced secretion
5. Tick the drugs which have gastric antisecretory effect?
   A. magnesium oxide
   B. acetazolamide
   C. bismuth colloidal subcitrate
   D. omeprazole
   E. sucralfate
6. Which drugs manifest protective effect on gastroduodenal mucosa?
   A. ranitidine
   B. pirenzepine
   C. bismuth compounds

D. famotidine
E. sucralfate

7. Laxatives and purgatives act by means of the following mechanisms:
   A. direct emolliating of faeces
   B. they increase diffusion and active secretion of water and electrolytes in the lumen of gut
   C. they stimulate motility by irritative mechanism
   D. they stimulate directly the cholinergic receptors
   E. retention of water in the intestine by hydrophillic or osmotic forces
8. Tick out the drugs causing constipation:
   A. magnesium hydroxide
   B. aluminum hydroxide
   C. ranitidine
   D. calcium carbonate
   E. pirenzepine
9. Tick the remedies alkalizing urine:
   A. famotidine
   B. cimetidine
   C. acetazolamide
   D. sodium bicarbonate
   E. aluminum hydroxide
10. Which of the following drugs can cause central nervous disorders?
   A. atropine
   B. sucralfate
   C. cimetidine
   D. ranitidine
   E. bismuth salts
11. Which of the given below are the effects of atropine?
   A. Bradycardia
   B. photophobia
   C. dry mouth
   D. sedation
   E. diarrhea
12. Coleretics are indicated in:
   A. chronic cholecystitis
   B. gallstones
   C. biliary colic

D. flatulence
E. jaundice

13. Coleretics are contraindicated in:
    A. acute hepatitis
    B. atherosclerosis
    C. jaundice
    D. biliary colic
    E. malabsorption conditions
14. Which of te given drugs are used in the treatment of cachexia?
    A. Sibutramine
    B. amphepramone
    C. nandrolone
    D. insuline
    E. ciproheptadine
15. Tick the drugs belonging to proton pump inhibitors:
    A. pirenzepine
    B. ranitidine
    C. omeprazole
    D. trimethaphan
    E. pantoprazol
16. All of the following agents intensify the secretion of gastric glands, EXCEPT:
    A. pepsin
    B. gastrin
    C. histamine
    D. metacine
    E. caffeine
17. Which of the following drugs are agents of substitution therapy?
    A. gastrin
    B. hydrochloric acid
    C. hystamine
    D. acidin-pepsin
    E. carbonate mineral waters
18. Choose the drugs which are H2-receptor antagonists:
    A. omeprazole
    B. pirenzepine
    C. famotidine
    D. ranitidine
    E. carbenoxolone

19. All of the following drugs are proton pump inhibitors, EXCEPT:
    A. pantoprozole
    B. pirenzepine
    C. omeprazole
    D. famotidine
    E. rabeprazole
20. Tick the drugs belonging to M1-cholinoblockers:
    A. cimetidine
    B. ranitidine
    C. pirenzepin
    D. omeprazole
    E. metacine
21. Tick the drugs which cause metabolic alkalosis:
    A. sodium bicarbonate
    B. cimetidine
    C. pepto-bismol
    D. calcium carbonate
    E. maalox
22. How does cimetidine influence on drug pharmacokinetics:
    A. it increases drug metabolism
    B. it decreases drug metabolism
    C. it increases the activity of microsomal enzymes
    D. it decreases drug elimination
    E. it increases the activity of microsomal enzymes
23. All of the following drugs intensify gastrointestinal motility, EXCEPT:
    A. papaverine
    B. metoclopramide
    C. pirenzepin
    D. cisapride
    E. domperidone
24. Antacids must be administered:
    A. 15 min before meal
    B. after meal
    C. during the meal
    D. 30 min after meal
    E. 2 hours after meal
25. All of the following drugs stimulate appetite, EXCEPT:
    A. vitamins
    B. bitters

C. fepranone
D. insulin
E. ciproheptadine

26. Tick the drugs which inhibit peristalsis:
A. castor oil
B. bisacodyl
C. loperamide
D. sorbitol
E. atropine

27. Tick the anorexigenic agent affecting the serotoninergic system:
A. fenfluramine
B. fepramone
C. ciproheptadine
D. sibutramine

28. Choose the drugs irritating the gut and causing increased peristalsis:
A. phenolphthalein
B. methyl cellulose
C. proserine
D. mineral oil
E. lactulose

29. Tick the drugs belonging to osmotic laxatives:
A. docusate sodium
B. bisacodyl
C. magnesium sulfate
D. phenolphthalein
E. sodium phosphate

30. Choose the antiemetic drugs of central action:
A. ipecacuanha derivatives
B. metoclopramide
C. tropisetron
D. apomorphine
E. promethazine

31. Tick the mechanism of antiemetic action of metoclopramide:
A. H1 and H2-receptor blocking effect
B. M-cholinoreceptor stimulating effect
C. D2-dopamine receptor blocking effect
D. M-cholinoblocking effect
E. 5-HT3-serotonin receptor blocking effect

32. Select the emetic agent with a reflex action:
    A. thermopsis derivatives
    B. apomorphine
    C. chlorpromazine
    D. ipecacuanha derivatives
    E. dansetron
33. All of the following drugs are antiemetics, EXCEPT:
    A. metoclopramide
    B. ondansetron
    C. chlorpromazine
    D. apomorphine
    E. scopolamine
34. Tick the antiemetic agents which are related to neuroleptics:
    A. metoclopramide
    B. mabilone
    C. tropisetron
    D. tiethylperrazine
    E. droperidol
35. All of these drugs reduce intestinal peristalsis, EXCEPT:
    A. loperamide
    B. drotaverine
    C. cisapride
    D. methyl cellulose
    E. magnesium aluminium silicate
36. The mechanism of action of stimulant purgatives consists in:
    A. increasing the volume of nonabsorbable solid residue
    B. increasing secretion
    C. altering the consistency of faeces
    D. increasing water content
    E. increasing motility
37. Tick the drugs that manifest direct protective action on gastric mucosa:
    A. cimetidine
    B. acethasolamide
    C. sucralfat
    D. omeprazol
    E. aluminium silicate

ANSWER KEY

Drugs used in gastrointestinal diseases

Task: one correct answer

1) E
2) D
3) A
4) B
5) C
6) C
7) D
8) D
9) E
10) D
11) B
12) D
13) B
14) C
15) A
16) C
17) E
18) D
19) E
20) C
21) D
22) C
23) B
24) A
25) D

Task: two or more correct answers

1) D, E
2) A, B
3) A, C, E
4) B, C
5) B, D
6) C,E
7) A, B, C, E
8) B, D
9) C, D
10) C, D
11) B, C
12) A, D
13) C, D
14) C, D, E
15) C, E
16) A, D
17) B, D
18) C, D
19) B, D
20) C, E
21) A, D
22) B, E
23) A, C
24) D, E
25) B, C
26) C, E
27) A, B, D
28) A, B
29) C, E
30) B, E
31) C, D, E
32) A, D
33) A, D
34) D, E
35) A, B, E
36) C, D, E
37) C, E

ANTIARRHYTHMICS, ANTIANGINALS AND DRUGS USED FOR THE TREATMENT OF HEART FAILURE

Task: Choose one correct answer

A. Which group of drugs reduces afterload?

A. Dopaminomimetic
B. cardiac glycosides
C. calcium channel blockers
D. nitrates
E. ACE inhibitors

2. Which group of drug manifests mainly a venodilatator effect?

A. nitrates
B. α-adrenolytic
C. β-adrenomimetics
D. cardiac glicozides
E. ACE inhibitors

3. Which group of drugs causes arterial and venodilation?

A. calcium channel blockers
B. α - adrenolblockers
C. dopaminomimetics
D. vasodilator from hydralazine group
E. activators of adenylate cyclase

4. Which cardiac glycoside has the most pronounced effect of cumulation?

A. strophanthin K
B. quabain
C. digoxin
D. digitoxin
E. lanatosid C

5. Which group of drugs inhibits phosphodiesterase?

A. bipiridines
B. nitrates
C. β-adrenomimetics
D. calcium channel blockers
E. ACE inhibitors

6. Which drug has a cardiostimulatory action?

A. prazosin
B. diazoxide

C. dopamine
D. hydralazine
E. enalapril

7. Which of the following cardiac glycosides has a higher bioavailability?
   A. strophanthin K
   B. dopamine
   C. dobutamine
   D. digoxin
   E. digitoxin
8. Which of the following cardiac glycosides has a greater latency period of occurrence effect?
   A. digitoxin
   B. digoxin
   C. lanatosid C
   D. strophanthin K
   E. corglicon
9. Which of the following cardiac glycosides has a middle liposolubility?
   A. strophanthines K
   B. quabain
   C. digitoxin
   D. digoxin
   E. corglicon
10. Which of the following cardiac glycosides binds very little with plasmatic protein?
    A. digoxin
    B. digitoxin
    C. corglicon
    D. acetildigitoxine
    E. lanatosid
11. Which of the given cardiac glycosides has a greater duration of action after cessation of administration?
    A. strophanthin K
    B. digitoxin
    C. digoxin
    D. lanatosid C
    E. quabain

12. Which of the following cardiac glycosides is metabolised mainly in the body?
    A. strophanthin K
    B. corglicon
    C. lanatosid C
    D. digoxin
    E. digitoxin
13. Which of the following cardiac glycoside has a high half-life (T1/2)?
    A. strophanthin K
    B. digitoxin
    C. digoxin
    D. corglicon
    E. lanatosid C
14. Tick the enzymatic mechanism of action of dipyridamole?
    A. it stimulates of adenylate cyclase
    B. it blocks Na + K + - ATPase
    C. it inhibits phosphodiesterase
    D. it inhibits adenylate cyclase
15. Tick the drug used in arrhythmias in acute period of myocardial infarction?
    A. quinidine
    B. disopyramide
    C. lidocaine
    D. verapamil
    E. amiodarone
16. Which drug from the listed below may be indicated in II degree atrioventricular block?
    A. verapamil
    B. propranolol
    C. strophanthin K
    D. isoprenaline
    E. digoxin
17. Which of the following maz the antianginal effect of propranolol be attributed to?
    A. block of exercise-induced tachycardia
    B. decreased end-diastolic ventricular volume
    C. dilations of constricted coronary vessels
    D. increased cardiac force of contraction
    E. increased resting heart rate

18. Tick one adverse effect common for nitroglycerin, guanethidine, and ganglion blockers (used to treat angina+hypertension):
    A. bradychardia
    B. impaired sexual function
    C. orthostatic hypotension
    D. throbbing headache
    E. lupus erythematosus syndrome
19. Tick the antianginal drugs that act by inhibiting adenosine reuptake:
    A. cinarisine
    B. lidoflasine
    C. pindolol
    D. molsidomine
    E. dipiridamol
    F. isosorbide mononitrate
20. Tick the group of drugs used to treat vasospastic angina:
    A. nitrates
    B. molsidomine
    C. calcium Channel inhibitors
    D. adenosine reuptake inhibitors
    E. beta adrenoreceptor inhibitors
21. Which of the following are class I antiarrhythmics?
    A. calcium channel blockers
    B. beta–blockers
    C. potassium channel blockers
    D. sodium channel blockers
    E. adenosine
22. Which of the following are the class II antiarrhythmics?
    A. calcium channel blockers
    B. beta–blockers
    C. potassium channel blockers
    D. sodium channel blockers
    E. adenosine
23. Which of the following are the class IV antiarrhythmics?
    A. adenosine
    B. beta–blockers
    C. sodium channel blockers
    D. calcium channel blockers
    E. potassium channel blockers

Task: Choose two or more correct answers

1. Which effect of dopamine ensures its effectiveness in arterial hypotension?
   A. β 1-adrenoceptor excitation
   B. β 2-adrenoceptor excitation
   C. α 1 adrenoceptor excitation
   D. dopaminireceptor blockade
   E. β 1 adrenoceptor blockade
2. In what situations is negative dromotropic effect of cardiac glycosides useful?
   A. heart failure with sinus rhythm
   B. atrioventricular block
   C. atrial fibrillation, tachysystolic form
   D. ventricular paroxysmal tachycardia
   E. chronic heart failure
3. In which of the folowind situation sdoes an unwanted positive inotropic effect of cardiac glycosides occur?
   A. heart insufficiency with isolated mitral stenosis and sinus rhythm
   B. atrioventricular block
   C. chronic congestive heart failure
   D. atrial fibrillation
   E. cardiac failure with subaortic stenosis
4. What is characteristic of digoxin?
   A. bioavailability of 40-80%
   B. intense metabolism in the liver
   C. action after suspension of treatment lasts up to 21 days
   D. half-life of 30-40 hours
   E. engagement with 20-40% plasma proteins
5. Choose contraindications to cardiac glycosides:
   A. III-IV stage of chronic congestive heart failure
   B. myocardial infarction
   C. heart hypertrophy
   D. cardiac amyloidosis
   E. atrioventricular block

6. How do cardiac glycosides influence on heart and hemodynamics of healthy heart?
   A. they increase significantly cardiac output
   B. they remodify or decrease cardiac output
   C. they increase blood pressure
   D. they lower the vagus tone
   E. they produce arterio- and venoconstriction
7. Tich the groups with possitive inotropic effect:
   A. dopaminomimetics
   B. calcium channel blockers
   C. bipyridines
   D. methylxanthines
   E. converting enzyme inhibitors
8. What is characteristic of strophanthin?
   A. high liposolubility
   B. rapid effect after oral administration
   C. reduced bioavailability at internal administration
   D. short-lasting effect after suspension of treatment
   E. duration of action for 4-6 hours after i/v administration
9. In which situations negative dromotropic effect has negative consequences on the body?
   A. atrial fibrillation
   B. atrioventricular block
   C. WPW syndrome
   D. ventricular tachycardia
   E. supraventricular paroxysmal tachycardia
10. Choose characteristics of possitive inotropic effect of cardiac glycosides on ECG:
   A. increase of R-R interval
   B. prolongation of P-Q interval
   C. reduction of QRS duration
   D. increase of R-wave amplitude
   E. increase of T-P range
11. What effects are characteristic of amrinone?
   A. chronotropic negative effect
   B. inotropic possitive effect
   C. increase of preload
   D. increase of afterload
   E. vasodilator effect

12. Which of the following are the pharmacodynamic characteristics of propafenone?
    A. it slows sinus node automaticity
    B. it decreases peripheral vascular resistance
    C. it increases the sino-atrial conduction time
    D. it has sympatho-adrenergic action
    E. it slows down interventricular management
13. Which of the following are the pharmacodynamic characteristics of lidocaine?
    A. it decreases inotropic effect
    B. it shortenes the duration of action potential
    C. it increases the refractory period in the interventricular driving routes
    D. it shortens the phase 0 of action potential
    E. it increases the speed of repolarization in phase 3
    F. it slows sinoatrial leadership
14. Which of the following are pharmacokinetic features of procainamide?
    A. gastrointestinal absorption rate of 80%
    B. partial biotransformation and renally removal mostly unchanged
    C. total metabolism in the liver
    D. formation of one metabolite with pronounced antiarrhythmic action
    E. half-life of 5-6 hours
    F. it binds extensively to plasma proteins (87%)
15. Tick the pharmacodynamic characteristics of quinidine?
    A. it shortens the refractory period in His-Purkinje system
    B. it increases the speed of depolarization in phase
    C. it contributes to the increase of PQ and QRS intervals
    D. it increases the speed of repolarization in phase 3
    E. it has parasympatholytic action
16. Tick the pharmacodynamic characteristics of verapamil?
    A. inhibition of phase 0 of depolarization
    B. increase action potential duration due to elongation of second phase of repolarization
    C. inhibits of the slow diastolic depolarization
    D. practically no influence on cardiac inotropic action
    E. brakes sinus automaticity

17. Tick contraindications of quinidine:
    A. sick sinus syndrome
    B. digitalis therapy
    C. arterial hypotension
    D. WPW syndrome
    E. myasthenia gravis
    F. hyperkalemia
18. Which of the following are absolute contraindications for administration of verapamil?
    A. WPW syndrome with anterograde leadership, which is associated with recurrent atrial fibrillation or flutter
    B. hypertrophic cardiomyopathy
    C. sick sinus syndrome (SSS)
    D. interventricular conduction disorders
    E. arterial hypertension
    F. intoxication with digoxine
19. What is characteristic of metoprolol?
    A. it is a cardioselective β-AB
    B. it is a non-selective β-AB
    C. it has intrinsic sympathomimetic action
    D. it is whithout intrinsic sympathomimetic action
20. What is characteristic of verapamil?
    A. it does not change the frequency of cardiac contractions
    B. it decreases predominantly vascular resistance
    C. it produces bradycardia
    D. T1/2 to 8 hours
    E. T1/2 to 4.5 hours
21. Tick the remedies that reduce ventricular rate in atrial fibrillation:
    A. Phenytoin
    B. verapamil
    C. mexiletine
    D. brethylium
    E. amiodarone
22. Which of the following are clinical effects of nitrates:
    A. they decrease heart oxygen consumption
    B. they reduce preload
    C. they reduce afterload
    D. they increase peripheral resistance
    E. they decrease cardiac ejection as a result of reduced afterload

23. Tick the drugs that have selective cerebral vasodilatation action:
    A. nitroglycerine
    B. nimodipine
    C. aminophylline
    D. cinarisine
    E. flunarisine
24. Nitrates toxicities result from:
    A. cerebral venodilation
    B. reflex tachycardia
    C. peripheral circulatory disorders
    D. increased cardiac force of contraction
    E. decreased cerebral blood flow
25. Tick the antianginal drugs that increase cardiac oxygen supply:
    A. nimodipin
    B. nitroglycerine
    C. lidoflasine
    D. acebutolol
    E. dipiridamol
26. Select the antianginal drugs that decrease cardiac oxygen consumption:
    A. molsidomine
    B. isosorbide dinitrate
    C. dipiridamol
    D. nimodipin
    E. gallopamil
27. Drugs that may precipitate angina when used for other indications include all of the following, EXCEPT:
    A. amphetamine
    B. hydralazine
    C. isoprenaline
    D. metoprolol
    E. ephedrine
28. Tick the drugs that decrease cardiac oxygen consumption and increase cardiac oxygen supply:
    A. diltiazem
    B. metoprolol
    C. molsidomine
    D. propranolol
    E. dipiridamol

29. Tick the drugs that often cause reflex tachycardia:
    A. verapamil
    B. atenolol
    C. isosorbide dinitrate
    D. nitroglycerine
    E. dipiridamol
30. Tick the contraindications to nitrates:
    A. congestive heart failure
    B. renal failure
    C. cerebral edema
    D. pulmonary edema
    E. high intracranial pressure
31. Tich the best drugs used to treat chronic angina pectoris associated with diabetes or bronchial asthma:
    A. nitroglycerine
    B. nifedipine
    C. metoprolol
    D. dipiridamol
    E. isradipine
32. Which of the following are the class I A antiarrhythmics?
    A. amiodarone
    B. quinidine
    C. lidocaine
    D. propafenon
    E. procainamide
33. Which of the following are the class I B antiarrhythmics?
    A. phenitoin
    B. flecainide
    C. tocainide
    D. mexiletine
    E. encainide
34. Which of the following are the class I C antiarrhythmics?
    A. quinidine
    B. propafenone
    C. ibutilide
    D. encainide
35. Which of the following are the class III antiarrhythmics?
    A. procainamide
    B. amiodarone

C. dofetilide
D. flecainide
E. sotalol

36. Which of the following are the class II antiarrhythmics?
A. procainamide
B. propranolol
C. sotalol
D. timolol
E. propafenone

37. Which of the following are the class IV antiarrhythmics?
A. amiodarone
B. tocainide
C. quinidine
D. gallopamil
E. verapamil
F. diltiazem

38. Drugs that have been found to be useful in heart failure include all of the following, EXCEPT:
A. NA+/K+ATPase inhibitors
B. alfa-adrenoreceptor agonists
C. beta-adrenoreceptor agonists
D. beta-adrenoreceptor antagonists
E. ACE inhibitors

39. The mechanism of action of digitalis is associated with:
A. a decrease in calcium uptake by the sarcoplasmic reticulum B
B. an increase in ATP synthesis
C. a modification of molecule action
D. an increase in systolic intracellular calcium level
E. a block of sodium/calcium exchange

40. Which of the following are the class III antiarrhythmics?
A. calcium channel blockers
B. beta–blockers
C. potassium channel blockers
D. sodium channel blockers
E. adenosine

41. Which of the following drugs are used in treating overdose of digitoxine:
A. lidocaine

B. magnesium
C. potassium
D. digibine
E. quinidine

42. All of the following antiarrhythmics are useful in treating atrial and ventricular arrhythmias, EXCEPT:
A. amiodarone
B. quinidine
C. lidocaine
D. procainamide
E. mexiletine

43. All of the following antiarrhythmics are useful in treating ventricular arrhythmias, EXCEPT:
A. fenithoine
B. lidocaine
C. verapamil
D. tocainida
E. nifedipine

44. Which of the following are useful in treating supraventricular arrhythmias:
A. procainamide
B. diltiazem
C. gallopamil
D. fenitoine

45. Tick the adverse effects of quinidine:
A. a-v block
B. arrhythmias extrasistols, ventricular fibrillation due to hypokalemia
C. psychic abnormalities
D. tinnitus
E. gastrointestinal disturbance

46. Tick the adverse effects of lidocaine:
A. CNS–convulsion, coma
B. paresthesia
C. thyroidal dysfunctions
D. cardiovascular depression
E. allergic reactions

47. Which of the following are useful in treating digitalis-induced arrhythmias:
    A. lidocaine
    B. tocainide
    C. flecainide
    D. phenitoine
    E. quinidine
48. Which of the following are the symptoms of acute intoxication with glycosides?
    A. hyperkaliemia
    B. hypomagnesemia
    C. halucination
    D. ventricular fibrillation
    E. hypercalcemia
49. Tick the characteristics of digoxine:
    A. absorption ~60-70%
    B. absorption ~95-100%
    C. t ½ ~ 40 hours
    D. t ½ ~ 168 hours
    E. time until peak effect ~3-6 hours
    F. time until peak effect ~6-12 hours
50. Which of the following are the symptoms of acute intoxication with glycosides?
    A. daiarrhea
    B. constipations
    C. disorientation
    D. somnolence
    E. aberrations of color perception
51. Which of the following are the specific drugs to treat glycoside-induced arrhythmias?
    A. verapamil
    B. lidocaine
    C. diltiazem
    D. phenithoine
    E. propranolol
52. Which of the following are the symptoms of chronic intoxication with glycosides?
    A. hyperkalemia
    B. hypomagnesemia

C. hypercalcemia
D. hypokalemia
E. hypoproteinemia

53. Which of the following are the clinical effects of glycosides?
A. increase of systolic ejection
B. decrease of systolic ejection
C. decrease of filling pressure
D. increase of cardiac output
E. increase of oxygen demand
F. decrease of oxygen demand

54. Tick the characteristics of digitoxine:
A. absorption ~95-100%
B. absorption ~60-70%
C. t ½ ~ 40 hours
D. t ½ ~ 168 hours
E. time until peak effect ~ 6-12 hours
F. time until peak effect ~ 3-6 hours

55. Tick the drugs used to treat acute congestive heart failure:
A. spironolactone
B. furosemide
C. metoprolol
D. digoxin
E. digitoxin
F. nitroglycerine

56. Tick the drugs used to treat chronic congestive heart failure:
A. furosemide
B. digoxin
C. metoprolol
D. digitoxin
E. hydrochlorothiaside
F. amrinone
G. dobutamine

57 Tick the characteristics of ACE inhibitors used to treat congestive heart failure:
A. they are considered to be drugs of first line for acute heard failure
B. they reduce water and salt retention

C. they are considered to be drugs of first line for chronic heard failure
D. they have direct positive inotropic effect
E. they reduce aldosteron secretion

58. Tick the characteristics of phosphodiesterase inhibitors used to treat congestive heart failure:
A. they are considered to be drugs of first line for chronic heard failure
B. they are considered to be drugs of first line for acute heard failure
C. they increase intracellular calcium
D. they increase cAMP

ANSWER KEY

Antiarrhythmics, antianginals and drugs used for the treatment of heart failure

Task: one correct answer

1) A
2) A
3) E
4) D
5) A
6) C
7) E
8) A
9) D
10) C
11) B
12) E
13) B
14) C
15) C
16) D
17) A
18) C
19) E
20) C
21) D
22) B
23) D

Task: two or more correct answers

1) A, C
2) A, C, E
3) A, E
4) A, D, E
5) D, E
6) B, C, E
7) A, C, D
8) B, C, E
9) B, C
10) C, D
11) B, E
12) A, E
13) B, D
14) A, B,
15) B, C,
16) B, E
17) A, B, C, D
18) A, C, E
19) A, D
20) C, D
21) B, D, E
22) A, B, C
23) D, E
24) A, B, C
25) A, B, C, E
26) A, B, E
27) A, B, C, E
28) A, C
29) C, D, E
30) C, E
31) B, E
32) B, E
33) A, D
34) B, D
35) B, C, E
36) B, D
37) D, E, F
38) A, C, E
39) C, D
40) B, C
41) A, C, D
42) C, E
43) C, E
44) A, B, C
45) A, E
46) A, B, D
47) A, D
48) B, C, D
49) A, C, E
50) C, E
51) B, D
52) B, D
53) A, D, F
54) A, D, F
55) B, D, F
56) B, D, E
57) C, D, E
58) B, D

ANTIHYPERTENSIVE DRUGS, ANTIHYPOTENSIVE DRUGS AND DIURETICS

Task: Choose one correct answer

1. Which of the followig β-blockers possesses intrinsic sympathomimetic activity?
   A. Propranolol
   B. pindolol
   C. labetalol
   D. metoprolol
   E. sotalol
2. Which of the following adrenoblockers is useful as cerebral vasodilator?
   A. phentolamine
   B. nicergoline
   C. tolazoline
   D. propranolol
   E. oxprenolol
3. Excitation of which receptor produces a positive inotropic effect of dopamine?
   A. α-1-adrenoceptors
   B. α-2-adrenoreceptor
   C. β-1-adrenoceptors
   D. β-2-adrenoreceptor
   E. n-colinoreceptors
4. Which of the following adrenomimetics has the longest antihypotensive duration of action?
   A. epinephrine
   B. ephedrine
   C. norepinephrine
   D. phenylephrine
   E. dopamine
5. Which of the given adrenomimetics causes hypotension?
   A. ethylephrine
   B. phenylephrine
   C. clonidine
   D. rezerpine
   E. ephedrine

6. Which of the given antihypertiensive drugs is safer in elderly patients?
   A. β-blockers
   B. ganglioblockers
   C. sympatholytics
   D. α-adrenoblockers
   E. α-central drenomimetics
   F. ACE inhibitors
7. With which group of drugs is the Association of ACE inhibitors contraindicated?
   A. calcium channel blockers
   B. nitrates
   C. saluretics diuretics
   D. diuretics retaining potassium ions
   E. β-adrenoblockers
8. Which of the following is contraindicated for patients with arterial hypertension and chronic obstructive bronchitis:
   A. methyldopa
   B. clonidine
   C. propranolol
   D. hydrochlorothiazide
   E. nifedipine
9. Tick the adverse reaction of nifedipine:
   A. bradycardia
   B. bronchospasm
   C. leg oedema
   D. A-V block
   E. ulcerative effect
10. Tick the maximal daily dose of captopril:
   A. 50 mg
   B. 100 mg
   C. 150 mg
   D. 450 mg
11. Tick the characteristic effects of central α-adrenomimetics:
   A. increase of the FCC
   B. hypokalemia
   C. constriction of arterioles
   D. constriction of the bronchi
   E. arrhythmias

12. Choose the most effective preparation in hypertension associated with benign prostatic hyperplasia:
    A. clonidine
    B. captopril
    C. prazosin
    D. propranolol
13. Hypotensive action of clonidine is due to:
    A. blocking of β-adrenoreceptors
    B. decrease of renine plasma content
    C. decrease of the circulating blood volume
    D. stimulation of postsinaptic α-adrenoreceptors in the CNS
    E. all the answers are correct
14. Which of the following β-adrenoblockers has a direct vasodilator effect?
    A. celiprolol
    B. propranolol
    C. atenolol
    D. metoprolol
    E. oxprenolol
15. Which of the given plasma volume substitutes causes pseudoaglutination?
    A. dextran 40, 70
    B. albumin
    C. hydroxyethyl starch
    D. crystalloid
    E. jelatinol
16. Which is the most favorable quantitative ratio colloid/crystalloid to treat hypovolemic shock?
    A. 1:1
    B. 1:2
    C. 1:9
    D. 1:4
    E. 1:10
17. Which of the following is the most common adverse reaction for dextrans?
    A. allergic reaction
    B. retrosternal pain

C. ototoxic effect
D. nephrotoxic effect

18. Tick the duration of effective action of dextran 70?
    A. up to 4 hours
    B. up to 8 hours
    C. for 12 hours
    D. only 60 min
    E. up to 24 hours
19. Which is the most dangerous side effect of sodium hydrocarbonate?
    A. dyspnea
    B. metabolic alkalosis
    C. cerebral edema
    D. allergic reaction
20. With which group of drugs can diuretics cause cardiac arrhythmias?
    A. glucocorticoids
    B. solution of potassium
    C. antibiotics
    D. sulfanilamide
    E. antiarrhythmics
21. Tick the most frequent side effect of furosemide?
    A. weakness
    B. vomiting
    C. hypokalemia
    D. metabolic alkalosis
    E. headache
22. Tick the most dangerous side effect of sodium hydrocarbonate?
    A. pulmonary edema
    B. allergic reaction
    C. cerebral edema
    D. dyspnea

Task: Choose two or more correct answers

1. Which of the following drugs are used in the treatment of metabolic alkalosis?
    A. 1-4% solution of potassium chlorate
    B. 5-10% human albumin
    C. ascorbic acid
    D. amino acids
    E. saline

2. Which of the following drugs are used in the correction of metabolic acidosis?
    A. solution of sodium lactate
    B. 5-10% human albumin
    C. amino acids
    D. crystalloid
    E. trometamol
3. Choose plasma volume substitutes with nephrotoxic effect:
    A. hemodese
    B. albumin
    C. 5-10% glucose solution
    D. dextran 40, 70
    E. saline solutions
4. Tick plasma volume substitutes used in the treatment of acute liver failure:
    A. 5-10% glucose solution
    B. 10-20% glucose solution
    C. 5-10% albumin solution
    D. dextran 40
    E. saline solutios
5. Which of the following diuretics cause hypokalemia?
    A. furosemide
    B. ethacrynic acid
    C. spironolactone
    D. triamterene
    E. manitol
6. Which of the following drugs enhance the effects of hydrochlorothiazide?
    A. barbiturates
    B. corticosteroids
    C. phenytoin
    D. antidepressants
    E. alcohol
7. Which of the given drugs increase toxicity in combination with hydrochlorothiazide?
    A. digitalis
    B. curare derivatives
    C. antihypertensives

D. lithium
E. general anesthetics

8. Which of the following diuretics may be useful in the treatment of acute glaucoma?
   A. mannitol
   B. furosemide
   C. ethacrynic acid
   D. spironolactone
   E. acetazolamid
9. Which of the following diuretics may be useful in the treatment of pulmonary edema?
   A. furosemide i/v
   B. furosemide orally
   C. manitol
   D. hydrochlorothiazide
   E. spironolactone
10. What side effects may be caused by thiazides?
   A. hyperuricemia
   B. hepato-renal failure
   C. electrolyte imbalance
   D. hypotension
   E. hypertension
11. Tick the drugs used in the treatment of acute renal failure:
   A. furosemide
   B. mannitol
   C. acetazolamid
   D. thiazides
   E. 0.25-0.5% procaine solution with 2.5-5% glucose solution
12. Tick the diuretics used in the treatment of pulmonary edema with hypertension:
   A. furosemide
   B. ethacrynic acid
   C. mannitol
   D. acetazolamid
   E. thiazides
13. Which of the following is the most common adverse reaction for dextrans?
   A. allergic reaction
   B. retrosternal pain

C. pulmonary edema
D. nephrotoxic effect
E. cerebral edema

14. Tick the diuretics which cause the excretion of Na +, Cl-, K + ions:
A. Triamterene
B. furosemide
C. acetazolamide
D. spironolactone
E. chlorthalidone

15. Tick the diuretics which remove predominantly water:
A. mannitol
B. amiloride
C. aminophylline
D. urea
E. triamterene

16. Select diuretics that cause metabolic alkalosis:
A. spironolactone
B. ethacrynic acid
C. acetazolamide
D. furosemide
E. amiloride
F. hydrochlorothiazide
G. triamterene

17. The mechanisms of action of clonidine are:
A. inhibition of $alfa_1$ receptors
B. decrease-in sympathetic outflow (tone)
C. inhibition of $beta_2$ receptors
D. activation of $alfa_2$ receptors in the CNS
E. inhibition of releasing of renine

18. Adverse reactions of metoprolol are:
A. sedation
B. sleep disturbances
C. depression
D. bronchoconstriction
E. dry mouth

19. Which of the following are prodrugs:
A. lisinopril
B. clonidine
C. losartan

D. enalapril
E. captopril

20. Which of the following are beta1-selective antagonists?
    A. atenolol
    B. labetalol
    C. acebutalol
    D. metoprolol
    E. esmolol
21. Tick the correct properties of enalapril:
    A. it is an active drug
    B. it is a prodrug
    C. the period of action is 18-24 h
    D. it causes water and salt retention
22. Tick the contraindications of nonselective beta-adrenoblockers:
    A. peripheral vascular insufficiency
    B. cerebral vascular insufficiency
    C. diabetes
    D. bronchial asthma
    E. pheocromocytoma
23. Which of the following drugs are calcium channel blockers?
    A. diazoxide
    B. fosinopril
    C. minoxidil
    D. nicardipine
    E. prasosine
    F. diltiazem
24. Tick the clinical properties of nitroprusside natrium are:
    A. it is used in treating chronic hypertension
    B. it dilates both arterial and venous vessels
    C. it is used in treating hypertensive emergencies
    D. it accumulates cyanides
    E. it is used in treating acute hypertension
25. Which of the following are the properties of minoxidil:
    A. it acts by potassium channels opening in smooth muscles
    B. it dilates veins
    C. it dilates arterioles
    D. it causes hypertrichosis
    E. it causes bradycardia

26. Which of the following are adverse effects common to all ACE inhibitors:
    A. sexual dysfunctions
    B. acute renal failure
    C. hypokaliemia
    D. hyperkalimia
    E. dry cough
27. Which of the following are used to treat hypertensive emergencies?
    A. sodium nitroprusside
    B. furosemide
    C. enalapril
    D. valsartan
    E. rezerpine
28. Which of the following are considered drugs of choice in the treatment of hypertension in oldery patients?
    A. diuretics
    B. inhibitors of ACE
    C. beta-adrenoblockers
    D. sympatholitics
    E. alfa-adrenoblockers
29. Which of the following are absolutely contraindicated in pregnancy:
    A. atenolol
    B. trimethaphan
    C. losartan
    D. lisinopril
    E. clonidine
30. Which of the following are antihypotensive drugs:
    A. clonidine
    B. terasosin
    C. dexametasone
    D. dopamine
    E. izoturon
31. Which of the following are used to treat hypertensive emergencies:
    A. sodium nitroprusside
    B. furosemide
    C. lisinopril
    D. valsartan
    E. rezerpine

32. Which of the following are absolutely contraindicated in pregnancy:
    A. atenolol
    B. trimethaphan
    C. losartan
    D. irbesartan
    E. nifedipine
33. Which of the following are absolutely contraindicated in pregnancy:
    A. enalapril
    B. metoprolol
    C. nifedipine
    D. lizinopril
    E. magnium sulfate
34. Tick the drugs used in acute hypotension:
    A. epinephrine
    B. pantocrine
    C. pheniephrine
    D. extractum ginseng
    E. dophamine
35. Select the drugs used in cronical hypotension:
    A. epinephrine
    B. pantocrine
    C. phenilephrine
    D. extractum ginseng
    E. dophamine
36. Tick the drugs used in cardiac shock:
    A. Dopamine
    B. norepinephrine
    C. phenylephrine
    D. defetur
    E. epinephrine
37. Tick the effects of dophamine:
    A. it dilates cardiac vessels
    B. it dilates renal vessels
    C. bradycardia
    D. it increases arterial pressure
    E. it increases cardiac output
38. Tick the effects of epinephrine:
    A. it dilates cardiac vessels
    B. it constricts cardiac vessels

C. bradycardia
D. increase of arterial pressure
E. increase of cardiac output

39. Tick the side effects of nifedipine:
A. Bradycardia
B. bronchospasm
C. leg edema
D. A-V block
E. tachycardia

ANSWER KEY

Antihypertensive drugs antihypotensive drugs and diuretics

Task: one correct answer

1) B
2) B
3) C
4) B
5) C
6) F
7) D
8) C
9) C
10) D
11) C
12) C
13) B
14) A
15) A
16) A
17) A
18) C
19) B
20) A
21) C
22) A

Task: two or more correct answers

1) A, C
2) A, E
3) A, B
4) A, C, D, E
5) A, B
6) A, B
7) A, B
8) B, C, E
9) A, C
10) A, C, D
11) A, B
12) A, B, C
13) A, C, E
14) B, C, E
15) A, C, D
16) B, D
17) B, D, E
18) A, D
19) D, E
20) A, D
21) B, C
22) A, B, C, D
23) D, F
24) B, C, D, E
25) A, B, C, D
26) D, E
27) A, B, D
28) A, B
29) C, D
30) C, D, E
31) A, B, D
32) C, D, E
33) A, D
34) A, C, E
35) B, D
36) A, B, C, D
37) A, B, D, E
38) B, D, E
39) C, E

ANTITHROMBOTICS AND HAEMOSTATIC DRUGS

Task: Choose one correct answer

1. Tick the relative characteristic of ticlopidine and clopidogrel:
   A. it has a shorter duration of action
   B. it is less likely to cause neutropenia
   C. it is more likely to induce antiplatelet antibodies
   D. it is more likely to precipitate serious bleeding
2. The mechanism of ticlopidine antiplatelet action is:
   A. inhibition of thromboxane production
   B. inhibition of platelet ADP receptors
   C. activation of antithrombin III
   D. reversible inhibition of glycoprotein GP IIb/IIIa receptors
3. A 67-year-old woman presents with pain in her left thigh muscle. Duplex ultrasonography shows the presence of deep vein thrombosis (DVT) in the affected limb. The decision was made to treat this woman with enoxaparin. Tick the relative characteristic of enoxaparin and heparin:
   A. it can be used without monitoring the patient's a PTT
   B. it has a shorter duration of action
   C. it is less likely to have a teratogenic effect
   D. it is less likely to be given intravenously
   E. it is more likely to cause thrombosis and thrombocytopenia
4. The anticoagulant action of warfarin sodium can be reversed by:
   A. fitomenadione
   B. protamine sulphate
   C. epinephrine
   D. pralidoxime
5. The conversion of plasminogen to plasmin is brought about by:
   A. heparin
   B. lepirudin
   C. alteplase
   D. warfarin
   E. nadroparine
6. Which one of the following effects does not occur in salicylate intoxication?
   A. hyperventilation
   B. hypothermia
   C. metabolic acidosis

D. respiratory alkalosis
E. tinnitus

7. Tick the drug belonging to antagonists of heparin:
   A. acethylsalicylate acid
   B. dicumarol
   C. dalteparin
   D. protamine sulphate
   E. fitomenadion
8. All of these drugs are antiplatelet agents, EXCEPT:
   A. acethylsalicylate acid
   B. urokinase
   C. ticlopidine
   D. clopidogrel
   E. pentoxiphylline
9. The mechanism of action of acethylsalicylate acid is:
   A. convertion of inactive plasminogen into active plasmin
   B. inhibition of COX and thus thromboxane synthesis
   C. enhancement of the interaction between antitrombin III and both thrombin and the factors involved in the intrinsic clotting cascade
   D. inhibition of the glycoprotein IIb/IIIa complex
   E. inhibition of thromboxane receprors
10. Which of the following drugs is an inhibitor of platelet glycoprotein IIb/IIIa receptors:
   A. acethylsalicylate acid
   B. clopidogrel
   C. ticlopidine
   D. abciximab
   E. tirofiban
11. The mechanism of ticlopidine as inhibitor of induced platelet aggregation. It's:
   A. convertion of inactive plasminogen into active plasmin
   B. inhibition of COX and thus thromboxane synthesis
   C. inhibition of phosphodiesterase
   D. inhibition of ADP-receptors
   E. inhibition of thromboxane receprors
12. Fibrinolytic drugs are used for the following, EXCEPT:
   A. central deep venous thrombosis
   B. multiple pulmonary emboli

C. heart failure
D. acute myocardial infarction
E. peripheral thrombosis

13. Aminocapronic acid is the drug of choice for the treatment of:
A. acute myocardial infarction
B. bleeding due to fibrinolytic therapy
C. heart failure
D. multiple pulmonary emboli
E. peripheral thrombosis

Task: Choose two or more correct answers

1. During 2 weeks, a patient was started on warfarine after her heparin had been discontinued. Two months later, she presented again after a severe nosebleed. Laboratory analysis revealed INR of 7.0 In order to prevent severe hemorrhage, warfarine should be discontinued and this patient should be treated immediately with:
A. alteplase
B. aminocaproic acid
C. factor VIII
D. protamin
E. fitomenadione
2. In two days, the patient's symptoms of ischemic stroke were completely elimnated. To prevent a recurrence of this disease, the patient is most likely to be treated with:
A. aminocaproic acid
B. acethylsalicylate acid
C. enoxaparin
D. urokinase
E. warfarin
3. If a fibrinolytic drug is used in the treatment of acute myocardial infarction, the most likely adverse drug effects that are are:
A. acute renal failure
B. development of antiplatelet antibodies
C. encephalitis secondary to liver dysfunction
D. hemorrhagic stroke
E. neutropenia
4. The effects of acetylsalicylate acid include:
A. decrease of fever
B. reduction of prostaglandin synthesis in inflamed tissues

C. impaired autoregulation of kidney function
D. reduction of tendency to bleeding
E. tinnitus and vertigo

5. Tick the drug belonging to anticoagulants of direct action:
   A. acethylsalicylate acid
   B. heparin
   C. warfarin
   D. dalteparina
   E. cenocumarol
6. Which of the following drugs has low-molecular weight?
   A. ethylbiscumacetate
   B. enoxaparin
   C. dalteparin
   D. heparin
   E. nadroparine
7. Tick the drug used as an oral anticoagulant:
   A. heparin
   B. daltreparin
   C. acenocumarol
   D. enoxaparin
   E. phepromarone
8. Which of the following drugs is fibrinolytic?
   A. ticlopidine
   B. streptokinase
   C. acethylsalicylate acid
   D. warfarin
   E. alteplase
9. Which of following groups of drugs must be indicated in multiple pulmonary embolia:
   A. indirect coagulants
   B. direct coagulants
   C. antiplatelets
   D. indirect fibrinolytics
   E. direct fibrinolytics
10. Tick the antiplatelets:
   A. dextran-40
   B. piracetam
   C. acethylsalicylate acid

D. warfarin
E. alteplase

11. Tick the antiplatelets:
A. warfarin
B. piracetam
C. acethylsalicylate acid
D. pentoxiphylline
E. alteplase

12. Choose the contraindications for anticoagulants:
A. predisposition to bleeding
B. gastric ulcer
C. hard liver failure
D. pregnancy
E. lactation

13. Trombolytic therapy is not indicated in the following conditions:
A. acute myocardial infarction
B. stroke (cerebrovascular accident)
C. deep vein thrombosis
D. large pulmonary embolism
E. predisposition to bleeding

13. Which of the following drugs are recommended for immediate therapy in acute myocardial infarction (without arrhythmia):
A. i.v. streptokinase
B. i.v. alteplase
C. i.v propranolol infusion
D. i.v. lidocaine infusion
E. warfarine

14. Tick the correct statements concerning the use of warfarin:
A. it is administered parenterally
B. it is a very rapidly acting anticoagulant
C. it is effective in vivo and not in vitro
D. it is contraindicated in pregnancy

15. Tick the drug belonging to fibrinoliytic inhibitors:
A. aminocapronic acid
B. ticlopidine
C. streptokinase
D. aprotinine
E. phitomenadione

ANSWER KEY

Antithrombotic and haemostatic drugs

Task: one correct answer

1) B
2) B
3) B
4) A
5) C
6) C
7) D
8) B
9) B
10) D
11) D
12) C
13) B

Task: two or more correct answers

1) B, E
2) A, C, E
3) B, D
4) A, B
5) B, D
6) B, C, D, E
7) C, E
8) B, E
9) A, D
10) B, C, D, E
11) A, B, C
12) B, C, D
13) A, B, C
14) B, E
15) A, B, C, D
16) C, D

PSYCHOTROPIC DRUGS

Task: Choose one correct answer

PART I *Hypnotic drugs*

1. Hypnotic drugs are used to treat:
   A. Psychosis
   B. Sleep disorders
   C. Narcolepsy
   D. Parkinsonian disorders
2. Tick a hypnotic drug, which is an imidazopyridine derivative:
   A. Pentobarbital
   B. Temazepam
   C. Zolpidem
   D. Chloral hydrate
3. Which of the following hypnotic agents is absorbed slowly?
   A. Phenobarbital
   B. Flurazepam
   C. Triazolam
   D. Temazepam
4. Which of the following barbiturates is an ultrashort-acting drug?
   A. Secobarbital
   B. Amobarbital
   C. Thiopental
   D. Phenobarbital
5. Tick the barbituric acid derivative, which has 4-5 days elimination half-life:
   A. Secobarbital
   B. Thiopental
   C. Phenobarbital
   D. Amobarbital
6. Tick the hypnotic benzodiazepine, which has the shortest elimination half-life:
   A. Temazepam
   B. Triazolam
   C. Flurazepam
   D. Diazepam

7. Which of the following hypnotic drugs is more likely to cause cumulative and residual effects?
   A. Zolpidem
   B. Temazepam
   C. Phenobarbital
   D. Triazolam
8. Which of the following hypnotic drugs increases the activity of hepatic drug-metabolizing enzyme systems?
   A. Phenobarbital
   B. Zolpidem
   C. Flurazepam
   D. Zaleplon
9. Hepatic microsomal drug-metabolizing enzyme induction leads to:
   A. Barbiturate tolerance
   B. Cumulative effects
   C. Development of physical dependence
   D. "hangover" effects
10. Tick the hypnotic drug which does not change hepatic drug-metabolizing enzyme activity?
   A. Flurazepam
   B. Zaleplon
   C. Triazolam
   D. All of the above
11. Barbiturates increase the rate of metabolism of:
   A. Anticoagulants
   B. Digitalis compounds
   C. Glucocorticoids
   D. All of the above
12. Which of the following hypnotics is preferred for elderly patients?
   A. Phenobarbital
   B. Flurozepam
   C. Temazepam
   D. Secobarbital
13. Which of the following hypnotics is preferred in patients with limited hepatic function?
   A. Zolpidem
   B. Amobarbital
   C. Flurozepam

14. Which of the following agents blocks chloride channel directly?
    A. Secobarbital
    B. Flumazenil
    C. Zaleplon
    D. Picrotoxin
15. Which of the following benzodiazepines is used mainly for hypnosis?
    A. Clonozepam
    B. Lorazepam
    C. Flurazepam
    D. Midazolam
16. Which one of the following hypnotic benzodiazepines is more likely to cause rebound insomnia?
    A. Triazolam
    B. Flurazepam
    C. Temazepam
    D. All of the above
17. Which of the following hypnotic benzodiazepines is more likely to cause "hangover" effects such as drowsiness, dysphoria, and mental or motor depression the following day?
    A. Temazepam
    B. Triazolam
    C. Flurazepam
    D. None of the above
18. Indicate the hypnotic drug, which binds selectively to the BZ1 receptor subtype, facilitating GABAergic inhibition:
    A. Thiopental
    B. Zolpidem
    C. Flurazepam
    D. Phenobarbital
19. Which of the following hypnotic drugs is used intravenously as anesthesia?
    A. Thiopental
    B. Phenobarbital
    C. Flurazepam
    D. Zolpidem
20. Indicate the usual cause of death due to overdose of hypnotics:
    A. Depression of the medullar respiratory center
    B. Hypothermia
    C. Cerebral edema
    D. Status epilepticus

PART II *Antiseizure drugs*

1. The mechanism of action of antiseizure drugs is:
   A. Enhancement of GABAergic (inhibitory) transmission
   B. Diminution of excitatory (usually glutamatergic) transmission
   C. Modification of ionic conduction
   D. All of the above mechanisms
2. Which of the following antiseizure drugs produces enhancement of GABA-mediated inhibition?
   A. Ethosuximide
   B. Carbamazepine
   C. Phenobarbital
   D. Lamotrigine
3. Tick the antiseizure drug, which has an impotent effect on the T-type calcium channels in thalamic neurons?
   A. Carbamazepin
   B. Lamotrigine
   C. Ethosuximide
   D. Phenytoin
4. Tick the antiseizure drug, inhibiting central effects of excitatory amino acids:
   A. Ethosuximide
   B. Lamotrigine
   C. Diazepam
   D. Tiagabine
5. The drug for partial and generalized tonic-clonic seizures is:
   A. Carbamazepine
   B. Valproate
   C. Phenytoin
   D. All of the above
6. Tick the drug used in absence:
   A. Valproate
   B. Phenobarbital
   C. Carbamazepin
   D. Phenytoin
7. The drug for myoclonic seizures is:
   A. Primidone
   B. Carbamazepine
   C. Clonazepam
   D. Phenytoin

8. The most effective drug for stopping generalized tonic-clonic status epilepticus in adults is:
   A. Lamotrigine
   B. Ethosuximide
   C. Diazepam
   D. Zonisamide
9. Phenytoin is used in the treatment of:
   A. Petit mal epilepsy
   B. Grand mal epilepsy
   C. Myoclonic seizures
   D. All of the above
10. Granulocytopenia, gastrointestinal irritation, gingival hyperplasia, and facial hirsutism are possible adverse effects of:
   A. Phenobarbital
   B. Carbamazepin
   C. Valproate
   D. Phenytoin
11. The antiseizure drug, which induces hepatic microsomal enzymes, is:
   A. Lamotrigine
   B. Phenytoin
   C. Valproate
   D. None of the above
12. The drug of choice for partial seizures is:
   A. Carbamazepin
   B. Ethosuximide
   C. Diazepam
   D. Lamotrigine
13. Which of the following antiseizure drugs is also effective in treating trigeminal neuralgia?
   A. Primidone
   B. Topiramat
   C. Carbamazepine
   D. Lamotrigine
14. The most common dose-related adverse effects of carbamazepine are:
   A. Diplopia, ataxia, and nausea
   B. Gingival hyperplasia, hirsutism
   C. Sedation, physical and psychological dependence
   D. Hemeralopia, myasthenic syndrome

15. Tick the drug of choice for status epilepticus in infants and children:
    A. Phenobarbital sodium
    B. Clonazepam
    C. Ethosuximide
    D. Phenytoin
16. Barbiturates are used in the emergency treatment of status epilepticus in infants and children because:
    A. They decrease significantly oxygen utilization by the brain, protecting cerebral edema and ischemia
    B. They have short onset and duration of action
    C. They do not have any effect on sleep architecture
    D. All of the above
17. Lamotrigine can be used in the treatment of:
    A. Partial seizures
    B. Absence
    C. Myoclonic seizures
    D. All of the above
18. The mechanism of vigabatrin action is:
    A. Direct action on the GABA receptor-chloride channel complex
    B. Inhibition of GABA aminotransferase
    C. NMDA receptor blockade via the glycine binding site
    D. Inhibition of GABA neuronal reuptake from synapses
19. The drug of choice in the treatment of petit mal (absence seizures) is:
    A. Phenytoin
    B. Ethosuximide
    C. Phenobarbital
    D. Carbamazepin
21. The benefit from benzodiazepine is limited by:
    A. Tolerance
    B. Atropine-like symptoms
    C. Psychotic episodes
    D. Myasthenic syndrome

PART III *Antiparkinsonian agents*

1. Which neurons are involved in parkinsonism?
    A. Cholinergic neurons
    B. GABAergic neurons
    C. Dopaminergic neurons
    D. All of the above

2. The pathophysiologic basis for antiparkinsonism therapy is:
    A. A selective loss of dopaminergic neurons
    B. The loss of some cholinergic neurons
    C. The loss of the GABAergic cells
    D. The loss of glutamatergic neurons
3. Which of the following neurotransmitters is involved in Parkinson's disease?
    A. Acetylcholine
    B. Glutamate
    C. Dopamine
    D. All of the above
4. The principal aim for treatment of Parkinsonian disorders is:
    A. To restore the normal balance of cholinergic and dopaminergic influences on the basal ganglia with antimuscarinic drugs
    B. To restore dopaminergic activity with levodopa and dopamine agonists
    C. To decrease glutamatergic activity with glutamate antagonists
    D. All of the above
5. Tick the drug that induces parkinsonian syndromes:
    A. Chlorpromazine
    B. Diazepam
    C. Triazolam
    D. Carbamazepine
6. Which of the following drugs is used in the treatment of Parkinsonian disorders?
    A. Phenytoin
    B. Selegiline
    C. Haloperidol
    D. Fluoxetine
7. The main reason for administration of levodopa, the precursor of dopamine, instead of dopamine is:
    A. Dopamine does not cross the blood-brain barrier
    B. Dopamine may induce acute psychotic reactions
    C. Dopamine is intensively metabolized in humans
    D. All of the above
8. Tick the peripheral dopa decarboxylase inhibitor:
    A. Tolcapone
    B. Clozapine

C. Carbidopa
D. Selegiline

9. When are carbidopa and levodopa administrated concomitantly?
   A. Levodopa blood levels are increased, and drug half-life is prolonged
   B. The dose of levodopa can be significantly reduced (by 75%), reducing also toxic side effects
   C. A shorter latency period precedes the occurrence of beneficial effects
   D. All of the above
10. Gastrointestinal irritation, cardiovascular effects, including tachycardia, arrhythmias, orthostatic hypotension, mental disturbances, and withdrawal are possible adverse effects of:
   A. Amantadine
   B. Benztropine
   C. Levodopa
   D. Selegiline
11. Which of the following agents is the most helpful in counteracting the behavioral complications of levodopa?
   A. Tolkapone
   B. Clozapine
   C. Carbidopa
   D. Pergolide
12. Which of the following vitamins reduces the beneficial effects of levodopa by enhancing its extracerebral metabolism?
   A. Pyridoxine
   B. Thiamine
   C. Tocopherol
   D. Riboflavin
13. Which of the following drugs antagonizes the effects of levodopa because it leads to a junctional blockade of dopamine action?
   A. Reserpine
   B. Haloperidol
   C. Chlorpromazine
   D. All of the above
14. Tick D2 receptor agonist with antiparkinsonian action:
   A. Sinemet
   B. Levodopa

C. Bromocriptine
D. Selegiline

15. Which of the following antiparkinsonian drugs has also been used to treat hyperprolactinemia?
    A. Benztropine
    B. Bromocriptine
    C. Amantadine
    D. Levodopa
16. Tick the selective inhibitor of monoamine oxidase B:
    A. Levodopa
    B. Amantadine
    C. Tolcapone
    D. Selegiline
17. Which of the following antiparkinsonian drugs is an antiviral agent used in the prophylaxis of influenza A2?
    A. Selegiline
    B. Sinemet
    C. Pergolide
    D. Amantadine
18. The mechanism of amantadine action is:
    A. Stimulation of glutamatergic neurotransmission
    B. Blocking the excitatory cholinergic system
    C. Inhibition of dopa decarboxilase
    D. Selective inhibition of catechol-O-methyltransferase
19. Which of the following antiparkinsonism drugs is an anticholinergic agent?
    A. Amantadine
    B. Selegilin
    C. Trihexyphenidyl
    D. Bromocriptine
20. Indicate the antiparkinsonian drug which should be avoided in patients with glaucoma:
    A. Selegilin
    B. Levodopa
    C. Bromocriptine
    D. Trihexyphenidyl

PART VII *Antipsychotic agents*

1. Neuroleptics are used to treat:
   A. Neurosis
   B. Psychosis
   C. Narcolepsy
   D. Parkinsonian disorders
2. Most of antipsychotic drugs:
   A. Block strongly postsynaptic D2 receptor
   B. Stimulate postsynaptic D2 receptor
   C. Block NMDA receptor
   D. Stimulate 5-HT2 receptor
3. Which of the following dopaminergic systems is the most closely related to behavior?
   A. The hypothalamic-pituitary system
   B. The extrapyramidal system
   C. The mesolimbic and mesofrontal systems
   D. The chemoreceptor trigger zone of the medulla
4. Hyperprolactinemia is caused by blockade of dopamine in:
   A. The chemoreceptor trigger zone of the medulla
   B. The pituitary
   C. The extrapyramidal system
   D. The mesolimbic and mesofrontal systems
5. Parkinsonian symptoms and tarditive dyskinesia are caused by blockade dopamine in:
   A. The nigrostriatal system
   B. The mesolimbic and mesofrontal systems
   C. The chemoreceptor trigger zone of the medulla
   D. The tuberoinfundibular system
6. Which of the following is the typical antipsychotic drug?
   A. Clozapine
   B. Quetiapine
   C. Haloperidol
   D. Olanzapine
7. Tick the atypical antipsychotic drug:
   A. Haloperidol
   B. Clozapine
   C. Thioridazine
   D. Thiothixene

8. Atypical antipsychotic agents (such as clozapine) differ from typical ones:
    A. In reduced risks of extrapyramidal system dysfunction and tardive dyscinesia
    B. In having low affinity for D1 and D2 dopamine receptors
    C. In having high affinity for D4 dopamine receptors
    D. All of the above
9. Tardive dyskinesia is the result of:
    A. Degeneration of dopaminergic and cholinergic fibers
    B. Hyperactive dopaminergic state in the presence of dopamine blockers
    C. Degeneration of histaminergic fibers
    D. Supersensitivity of cholinergic receptors in the caudate-putamen
10. Which of the following antipsychotic drugs has a high affinity for D4 and 5-HT2 receptors?
    A. Clozapine
    B. Fluphenazine
    C. Thioridazine
    D. Haloperidole
11. Tick the antipsychotic drug having significant peripheral alpha-adrenergic blocking action:
    A. Haloperidol
    B. Chlorpromazine
    C. Clozapine
    D. Risperidone
12. Tick the antipsychotic drug having a muscarinic-cholinergic blocking action:
    A. Chlorpromazine
    B. Clorprothixene
    C. Risperidone
    D. Haloperidol
13. Parkinson's syndrome, acute dystonic reactions, tardive dyskinesia, antimuscarinic actions, orthostatic hypotension, galactorrhea are possible adverse effects of:
    A. Haloperidol
    B. Clozapine
    C. Chlorpromazine
    D. Risperidone

14. Adverse peripheral effects, such as loss of accommodation, dry mouth, tachycardia, urinary retention, constipation are related to:
    A. Alpha adrenoreceptor blockade
    B. Muscarinic cholinoreceptor blockade
    C. Supersensitivity of dopamine receptor
    D. Dopamine receptor blockade
15. Which of the following phenothiazine derivatives is a potent local anesthetic?
    A. Fluphenazine
    B. Thioridazine
    C. Chlorpromazine
    D. None of the above
16. Which of the following phenothiazine derivatives may produce cardiac toxicity, including ventricular arrhythmias, cardiac conduction block and sudden death?
    A. Thioridazine
    B. Chlorpromazine
    C. Perphenazine
    D. Fluphenazine
17. Which of the following antipsychotic agents is preferable in patients with coronary and cerebrovascular disease?
    A. Chlorpromazine
    B. Fluphenazine
    C. Haloperidol
    D. Perphenazine
18. Which of the following antipsychotic drugs has the high risk of potentially fatal agranulocytosis and seizures at high doses?
    A. Haloperidol
    B. Risperidone
    C. Clozapine
    D. Chlorpromazine
19. Which of the following antipsychotic drugs has a high affinity for D2 and 5-HT2 receptors?
    A. Droperidol
    B. Clozapine
    C. Thiothixene
    D. Risperidone

20. Which of the following adverse effects is associated with lithium treatment?
    A. Cardiovascular anomalies in newborns
    B. Thyroid enlargement
    C. Nephrogenic diabetes insipidus
    D. All of the above

PART VIII *Antidepressant agents*

1. The principal mechanism of action of antidepressant agents is:
    A. Stabilization of dopamine and beta-adrenergic receptors
    B. Inhibition of the storage of serotonin and epinephrine in the vesicles of presynaptic nerve endings
    C. Blocking epinephrine or serotonin reuptake pumps
    D. Stimulation of alfa2-norepinephrine receptors
2. The irreversible MAO inhibitors have a very high risk of developing:
    A. Respiratory depression
    B. Cardiovascular collapse and CNS depression
    C. Hypertensive reactions to tyramine ingested in food
    D. Potentially fatal agranulocytosis
3. Serotonin syndrome is the result of:
    A. Increased stores of monoamine
    B. Significant accumulation of amine neurotransmitters in the synapses
    C. Both A and B
    D. Depleted stores of biogenic amines
4. The therapeutic response to antidepressant drugs is usually over a period of:
    A. 2-3 days
    B. 2-3 weeks
    C. 24 hours
    D. 2-3 month
5. Which of the following antidepressants may have latency period as short as 48 hours?
    A. Tranylcypromine
    B. Imipramine
    C. Fluoxetine
    D. Amitrityline

6. Indicate an effective antidepressant with minimal autonomic toxicity:
    A. Amitrityline
    B. Fluoxetine
    C. Imipramine
    D. Doxepin
7. Which of the following tricyclic and heterocyclic antidepressants has the greatest sedation?
    A. Doxepin
    B. Amitriptyline
    C. Trazodone
    D. All of the above
8. Which of the following tricyclic and heterocyclic agents has the least sedation?
    A. Protriptyline
    B. Trazodone
    C. Amitriptyline
    D. Mitrazapine
9. Indicate the tricyclic or heterocyclic antidepressant having the greatest antimuscarinic effects:
    A. Desipramine
    B. Amitriptyline
    C. Trazodone
    D. Mirtazapine
10. Indicate the tricyclic or heterocyclic antidepressant having the least antimuscarinic effects:
    A. Trazodone
    B. Buprorion
    C. Mirtazapine
    D. All of the above
11. Which of the following antidepressants has a significant alfa2-adrenoreceptor antagonism?
    A. Amitriptyline
    B. Nefazodone
    C. Mirtazapine
    D. Doxepin

12. Sedation, peripheral atropine-like toxicity (e.g. Cycloplegia, tachycardia, urinary retention, and constipation), orthostatic hypotension, arrhythmias, weight gain and sexual disturbances are possible adverse effects of:
    A. Sertaline
    B. Amitriptyline
    C. Phenelsine
    D. Bupropion
13. Which of the following drugs is least likely to be prescribed to patients with prostatic hypertrophy, glaucoma, coronary and cerebrovascular disease?
    A. Amitriptyline
    B. Paroxetine
    C. Bupropion
    D. Fluoxetine
14. The mechanism of fluoxetine action includes:
    A. Selective inhibition of serotonine uptake in the CNS
    B. Little effect on central norepinephrine or dopamine function
    C. Minimal binding to cholinergic, histaminic, and alfa-adrenergic receptors
    D. All of the above
15. Which of the following antidepressants is used for treatment of eating disorders, especially buliemia?
    A. Amitriptyline
    B. Fluoxetine
    C. Imipramine
    D. Tranylcypromine

PART IX *Anxiolytic agents*

1. Anxiolytic agents should:
    A. Relieve pain
    B. Reduce anxiety and exert a calming action
    C. Improve mood and behavior in patient with psychotic symptoms
    D. Produce drowsiness, encourage the onset and maintenance of a state of sleep
2. Anxiolytics are also useful for:
    A. Treatment of epilepsy and seizures
    B. Insomnia

C. Muscle relaxation in specific neuromuscular disorders
D. All of the above

3. Which of the following benzodiazepines is less likely to cause cumulative and residual effects with multiple doses?
   A. Clorazepate
   B. Quazepam
   C. Lorazepam
   D. Prazepam
4. Reduction of anxiolytic drug dosage is recommended:
   A. In patients taking cimetidine
   B. In patients with hepatic dysfunction
   C. In elderly patients
   D. All of the above
5. Which of the following anxiolytics is preferred in patients with limited hepatic function?
   A. Buspirone
   B. Quazepam
   C. Diazepam
   D. Chlordiazepoxide
6. Indicate the anxiolytic agent, which relieves anxiety without causing marked sedative effects:
   A. Diazepam
   B. Chlordiazepoxid
   C. Buspirone
   D. Clorazepate
7. Restlessness, anxiety, orthostatic hypotension, generalized seizures, severe tremor, vivid hallucination, and psychosis are possible symptoms of:
   A. Tolerance
   B. Withdrawal
   C. Drug interactions between barbiturate and diazepam
   D. None of the above
8. Flumazenil is used to:
   A. Reverse the CNS depressant effects of hypnotic benzodiazepines overdose
   B. Hasten recovery following of the use of hypnotic benzodiazepines in anesthetic and diagnostic procedures
   C. Reverse benzodiazepine-induced respiratory depression
   D. All of the above

9. Tolerance is associated with:
    A. An ability to compensate for the drug effect
    B. Increased disposition of the drug after chronic use
    C. Compensatory changes in receptors, effector enzymes, or membrane actions of the drug
    D. All of the above
10. Addiction is associated with the presence of:
    A. Psychological dependence
    B. Physiological dependence
    C. Tolerance
    D. All of the above

ANSWER KEY

Psychotropic drugs

Task: one correct answer

Hypnotic drugs

1) B	8) A	15) C
2) C	9) A	16) A
3) D	10) D	17) C
4) C	11) D	18) B
5) C	12) C	19) A
6) B	13) A	20) A
7) C	14) D	

Antiseizure drugs

1) D	8) C	15) A
2) C	9) B	16) A
3) C	10) D	17) D
4) B	11) B	18) B
5) D	12) A	19) B
6) A	13) C	20) A
7) C	14) A	

Antiparkinsonian drugs

1) D	8) C	15) B
2) A	9) D	16) D
3) D	10) C	17) D
4) D	11) B	18) A
5) A	12) A	19) C
6) B	13) D	20) D
7) A	14) C	

Antipsychotic drugs

1) B	8) D	15) C
2) A	9) B	16) A
3) C	10) A	17) C
4) B	11) B	18) C
5) A	12) A	19) D
6) C	13) C	20) D
7) B	14) B	

Antidepressant drugs

1) C
2) C
3) C
4) B
5) A
6) B
7) D
8) A
9) B
10) D
11) C
12) B
13) A
14) D
15) B

Anxiolytic drugs

1) B
2) D
3) C
4) D
5) A
6) C
7) B
8) D
9) D
10) D

DRUGS USED IN RHEUMATOID ARTHRITIS AND FOR OBESITY

Task: Choose one correct answer

1. Nonnarcotic analgesics are mainly effective against pain associated with:
   A. inflammation or tissue damage
   B. trauma
   C. myocardial infarction
   D. surgery
2. Nonnarcotic agents cause:
   A. respiratory depression
   B. antipyretic effect
   C. euphoria
   D. physical dependence
3. Which one of the following nonnarcotic agents inhibits mainly cyclooxygenase (COX) in the CNS?
   A. paracetamol
   B. ketorolac
   C. acetylsalicylic acid
   D. ibuprofen 50
4. Indicate the nonnarcotic analgesic, which lacks an anti-inflammatory effect:
   A. naloxone
   B. paracetamol
   C. metamizole
   D. aspirin
5. The correct statements concerning aspirin include all of the following, EXCEPT:
   A. it inhibits mainly peripheral COX
   B. it does not have an anti-inflammatory effect
   C. it inhibits platelet aggregation
   D. it stimulates respiration by a direct action on the respiratory center
6. For which of the following conditions could aspirin be used prophy-lac-tically?
   A. noncardiogenic pulmonary edema
   B. peptic ulcers

C. thromboembolism
D. metabolic acidosis

7. All of the following are undesirable effects of aspirin, EXCEPT:
   A. gastritis with focal erosions
   B. tolerance and physical addiction
   C. bleeding due to a decrease of platelet aggregation
   D. reversible renal insufficiency
8. Characteristic findinds of salicylism include:
   A. headache, mental confusion and drowsiness
   B. tinnitus and difficulty in hearing
   C. hyperthermia, sweating, thirst, hyperventilation, vomiting and diarrhea
   D. all of the above
9. Analgin usefulness is limited by:
   A. agranulocytosis
   B. erosions and gastric bleeding
   C. methemoglobinemia
   D. hearing impairment
10. Methemoglobinemia is a possible adverse effect of:
   A. aspirin
   B. paracetamol
   C. metamizole
   D. ketorolac
11. The correct statements concerning ketorolac include all of the following, EXCEPT:
   A. it inhibits COX
   B. it is as effective as morphine for a short-term relief from moderate to severe pain
   C. it has a high potential for physical dependence and abuse
   D. it does not produce respiratory depression
12. Tick the nonopioid agent of central effect with analgesic activity:
   A. reserpine
   B. propranolol
   C. clonidine
   D. prazosin
13. Tick the antiseizure drug with an analgesic effect:
   A. carbamazepine
   B. ethosuximide

C. phenytoin
D. clonazepam

14. Which of the following non-opioid agents is an antidepressant with analgesic activity?
    A. fluoxetine
    B. moclobemide
    C. tranylcypramine
    D. amitriptyline
15. Tick the mixed (opioid/non-opioid) agent:
    A. paracetamol
    B. tramadol
    C. sodium valproate
    D. butorphanol
16. The anti-inflammatory effect of glucocorticoids is caused by:
    A. reduction of prostaglandin and leukotriene which results from inhibition of phospholipase A2
    B. reduction of macrophages migration into the site of inflammation
    C. decrease of capillary permeability
    D. all of the above
17. Which of the following statements concerning the anti-inflammatory effect of glucocorticoids is TRUE?
    A. the anti-inflammatory effect of glucocorticoids results from inhibition of cyclooxygenase
    B. the anti-inflammatory effect of glucocorticoids results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis
    C. the induction of cyclooxygenase II expression which results in reduction of the amount of an enzyme available to produce prostoglandins
    D. all of the above
18. Which of the following statements concerning the anti-inflammatory effect of NSAIDs are TRUE?
    A. the anti-inflammatory effect of NSAIDs results from inhibition of cyclooxygenase
    B. the anti-inflammatory effect of NSAIDs results from inhibition of phospholipase A_2 and reduction of prostaglandin and leukotriene synthesis

C. the anti-inflammatory effect of NSAIDs results from the induction of cyclooxygenase II expression which results in the reduction of the amount of an enzyme available to produce prostoglandins
D. all of the above

19. Serious side effects of glucocorticoids include the following, EXCEPT:
    A. acute peptic ulcers
    B. iatrogenic Cushing's syndrome (rounding, puffiness, fat deposition and plethora alter the appearance of the face – moon faces)
    C. salicylism (vomiting, tinnitus, decreased hearing, and vertigo)
    D. hypomania or acute psychosis
20. Which of the following drugs is a 5-lipoxygenase (5-LOG) inhibitor?
    A. ibuprofen
    B. zileuton (Zyflo)
    C. metamizole (Analgin)
    D. diclofenac
21. Which of the following drugs is a leucotreine D4 receptor (LTD4) blocker?
    A. ibuprofen
    B. zileuton (Zyflo)
    C. zafirlukast (Accolate)
    D. diclofenac
22. Which of the following drugs is a thromboxane A2 receptor (TXA2) antagonist?
    A. sulotroban
    B. zileuton (Zyflo)
    C. zafirlukast (Accolate)
    D. iclofenac
23. The effects of aspirin do not include
    A. decrease of fever
    B. reduction of prostaglandin synthesis in inflamed tissues
    C. impaired autoregulation of kidney function
    D. reduction of bleeding tendency
    E. tinnitus and vertigo

24. Which of the following pairs of drug effects and mechanisms of action is false?
    A. allopurinol action in gout: it inhibits oxidation of hypoxanthine
    B. aspirin antiplatelet action: it inhibits cyclooxygenase
    C. hydroxychloroquine antirheumatic action: it interferes with T lymphocyte action
    D. probenecid uricosuric action: it increases secretion of uric acid by the loop of Henle
    E. indomethacin closure of patent ductus arteriosus: it blocks PGE production in the ductus of newborns
25. Which one of the following effects does not occur in salicylate intoxication?
    A. hyperventilation
    B. hypothermia
    C. metabolic acidosis
    D. respiratory alkalosis
    E. tinnitus
26. Which one of the following drugs is not useful in dysmenorrhea?
    A. aspirin
    B. colchicine
    C. ibuprofen
    D. rofecoxib
    E. naproxen
27. Which of the following drugs is MOST likely to increase serum concentrations of conventional doses of methotrexate, a weak acid that is primarily cleared in urine?
    A. acetaminophen
    B. allopurinol
    C. colchicine
    D. hydroxychloroquine
    E. probenecid
28. The main advantage of ketorolac over aspirin is that ketorolac:
    A. can be combined more safely with an opioid such as codeine
    B. can be obtained as an over-the-counter agent
    C. does not prolong bleeding time
    D. is available in a parenteral formulation that can be injected intramuscularly or intravenously
    E. is less likely to cause acute renal failure in patients with some preexisting degree of renal impairment

29. Which of the following increased serum levels may be associated with a decreased risk of atherosclerosis?
    A. very low-density lipoproteins (VLDL)
    B. low-density lipoproteins (LDL)
    C. intermediate-density lipoproteins (IDL)
    D. high-density lipoproteins (HDL)
    E. cholesterol

Items 30-33: A 35-year-old woman appears to have familial combined hyperlipidemia. Her serum concentrations of total cholesterol, LDL cholesterol, and triglyceride are elevated. Her serum concentration of HDL cholesterol is somewhat reduced.

30. Which of the following drugs is most likely to cause an increase in this patient's triglyceride and VLDL cholesterol when used as monotherapy?
    A. atorvastatin
    B. cholestyramine
    C. gemfibrozil
    D. lovastatin
    E. niacin
31. If this patient is pregnant, which of the following drugs should be avoided because of the risk of harming the fetus?
    A. cholestyramine
    B. fenofibrate
    C. gemfibrozil
    D. niacin
    E. pravastatin
32. The main mechanism of action of gemfibrozil is:
    A. it increases excretion of bile acid salts
    B. it increaseds expression of high-affinity LDL receptors
    C. it increases lipid hydrolysis by lipoprotein lipase
    D. it inhibits the secretion of VLDL by the liver
    E. it decreases the secretion of HDL by the liver
33. When used as monotherapy, a major toxicity of gemfibrozil is an increased risk of:
    A. bloating and constipation
    B. cholelithiasis
    C. hyperuricemia
    D. liver damage
    E. severe cardiac arrhythmia

Items 34-37: A 43-year-old man has heterozygous familial hyperlipidemia.His serum concentrations of total cholesterol and LDL are markedly elevated.His serum concentration of HDL cholesterol, VLDL cholesterol, and triglyceride are normal or slightly elevated.This patient's mother and older brother died of myocardial infarctions before the age of 50. This patient has recently experienced mild chest pain when walking up the stairs and has been diagnosed angina of effort. The patient is somewhat overweight. He drinks alcohol most evenings and smokes about one pack of cigarettes per week.

34. With which of the following changes in serum lipid concentrations is associated with alcohol drinking?
    A. decreased HDL cholesterol
    B. decreased IDL cholesterol
    C. decreased VLDL cholesterol
    D. increased LDL cholesterol
    E. increased triglyceride
35. If the patient has a medical history of gout, which of the following drugs is most likely to exacerbate this condition?
    A. colestipol
    B. gemfibrozil
    C. lovastatin
    D. niacin
    E. simvastatin
36. After being counseled about lifestyle and dietary changes, the patient was started on atorvastatin. During his treatment with atorvastatin, it is important to monitor routinely serum concentrations of:
    A. blood urea nitrogen (BUN)
    B. alanine and aspartate aminotransferase
    C. platelets
    D. red blood cells
    E. uric acid
37. Six months after beginning atorvastatin, the patient's total and LDL cholesterol concentrations remained above normal and he continued to have anginal attacks despite good adherence to his antianginal medications. His physician decided to add niacin. The major recognized mechanism of action of niacin is:
    A. decreased lipid synthesis in adipose tissue
    B. decreased oxidation of lipids in endothelial cells
    C. decreased secretion of VLDL by the liver

D. increased endocytosis of HDL by the liver
E. increased lipid hydrolysis by lipoprotein lipase

38. Which of the following is LEAST likely to be useful in the therapy of hypercalcemia?
    A. calcitonin
    B. glucocorficoids
    C. plicamycin
    D. parenteral infusion of phosphate
    E. thiazide diuretics
39. Which of the following characteristics of vitamin D and its metabolites is?
    A. decrease of serum levels of calcium
    B. activation of their vitamin D receptors increases cellular cAMP
    C. calcitriol is the major derivative responsible for increasing intestinal absorption of phosphate
    D. metabolites of vitamin D increase renal excretion of calcium
    E. vitamin D deficiency results in Paget's disease
40. Which of the following conditions is an indication for the use of calcitonin?
    A. chronic renal failure
    B. hypoparathyroidism
    C. intestinal osteodystrophy
    D. Paget's disease
    E. rickets

Items 41-43: A 58-year-old postmenopausal woman was sent for dual-energy x-ray absorptiometry to evaluate the bone mineral density of her lumbar spine, femoral neck, and the whole hip. The test results revealed significantly low bone mineral density in all sites.

41. Which of the following medications is MOST likely to contribute to this woman's osteoporosis in case of long-term administration?
    A. lovastatin
    B. metformin
    C. prednisone
    D. propranolol
    E. warfarin
42. Which of the following agents is least likely to have therapeutic value in the treatment of this woman' s osteoporosis?
    A. calcium
    B. raloxifene

C. risedronate
D. thyroxine
E. vitamin D

43. If this patient had begun oral therapy with alendronate, she would have been advised to drink large quantities of water with the tablets and remain in an upright position for at least 30 minutes and until eating the first meal of the day. These instructions would have been given in order to decrease the risk of:
    A. cholelithiasis
    B. diarrhea
    C. constipation
    D. erosive esophagitis
    E. pernicious anemia
44. Vitamin D is of no clinical use in:
    A. chronic renal failure
    B. hyperparathyroidism
    C. intestinal osteodystrophy
    D. nutritional rickets
    E. osteoporosis
45. Which of the following drugs, is associated with the development of bone pain and mineralization defects such as osteomalacia when it is used for a long period?
    A. calcitonin
    B. dihydrotachysterol
    C. ergocalciferol
    D. etidronate
    E. risedronate

ANSWER KEY

Drugs used in rheumatoid arthritis and for obesity

Task: one correct answer

1) A
2) B
3) A
4) B
5) D
6) C
7) B
8) D
9) A
10) B
11) C
12) C
13) A
14) D
15) B
16) A
17) B
18) A
19) C
20) B
21) C
22) A
23) D
24) D
25) B
26) B
27) E
28) D
29) D
30) B
31) E
32) C
33) B
34) E
35) D
36) B
37) C
38) E
39) C
40) D
41) C
42) D
43) D
44) B
45) D

ANTIMICROBIAL DRUGS

Task: Choose one correct answer

1. Minimal duration of antibacterial treatment usually is:
   A. not less than 1 day
   B. not less than 5 days
   C. not less than 10-14 days
   D. not less than 3 weeks
2. Rational antimicrobial combination is used to:
   A. provide synergism when microorganisms are not effectively eradicated with a single agent alone
   B. provide broad coverage
   C. prevent the emergence of resistance
   D. all of the above
3. Mechanisms of bacterial resistance to antimicrobial agents are the following, EXCEPT:
   A. active transport out of a microorganism or/and hydrolysis of an agent via enzymes produced by a microorganism
   B. enlarged uptake of the drug by a microorganism
   C. modification of a drug target
   D. reduced uptake by a microorganism
4. The following antimicrobial is considered safe for use in pregnancy:
   A. trimethoprim
   B. cefazoline
   C. doxycycline
   D. streptomycin
5. The following statement regarding antimicrobials, is correct EXCEPT:
   A. sulphonamides inhibit bacterial dihydrofolate reductase
   B. macrolides bind to bacterial 50s ribosomal subunit
   C. penicillins inhibit bacterial betalactamase
   D. rifampcin inhibits RNA-dependent DNA polymerase
6. The following drugs are primarily bacteriostatic, EXCEPT:
   A. sulfadiazine
   B. tetracycline
   C. gentamicine
   D. erythromycin

7. Which pharmacokinetic feature is not shown by systemically used sulphonamides?
   A. ready passage across the placenta
   B. predominant excretion by glomerular filtration
   C. no plasma protein binding
   D. genetic variation in metabolism
8. Tick the incorrect statement about sulphonamides:
   A. they inhibit bacterial dihydrofolate reductase
   B. their action is antagonized by PABA
   C. they are primarily bacteriostatic by nature
   D. their spectrum of activity includes certain Chlamydia
9. The following sulfonamide is used topically:
   A. sulfasalazine
   B. sulfadoxine
   C. mafenide
   D. sulfadiazine
10. The following features cannot be attributed to fluoroquinolones:
   A. postantibiotic effect
   B. efficacy only against gram-negative bacteria
   C. rapid bactericidal effect
   D. bactericidal effect depends on their plasmatic concentration
11. Trimethoprim:
   A. has structural similarity with pyrimethamine
   B. inhibits folic acid synthetase
   C. is safe to be used in pregnancy
   D. is often used in combination with sulphasalazine
12. The following penicillin preparations act against Pseudomona aeroginosa:
   A. phenoxymethyl penicillin
   B. piperacillin
   C. amoxicillin
   D. cloxacillin
   E. meticilline
13. The following adverse effect is not seen with cephalosporins:
   A. A.teratogenecity
   B. bleeding
   C. disulfiram-like reactions
   D. hypersensitivity

14. The following statement regarding aminopenicillins is true:
    A. amoxicillin is more effective than ampicillin against bacillary dysentery due to shigella
    B. amoxycillin is usually administered every 8 hours.
    C. the incidence of diarrhoea is higer with amoxicillin than with ampicillin
    D. their elimination is not influenced by administration of probenecid
15. The following statement related to B-lactam antibiotics are true, EXCEPT:
    A. clavulanic acid has a significant antibacterial activity
    B. imipenem is hydrolyzed by renal dehydropeptidase
    C. methicillin is usually resistant to the action of penicillinase
    D. sulbactam inhibits bacterial betalactamase
16. Jarisch-Herxheimer reaction with penicillin is due to:
    A. breakdown of drug by betalactamase enzyme
    B. hypersensitivity to penicillins
    C. release of spirochaetolytic products in syphilitic patients
    D. it is seen on during the 2nd or subsequent injection of penicillin in syphilis
17. To increase blood concentration of Imipenem it is combined with:
    A. clavulanic acid
    B. sulbactam
    C. cilastatin
    D. probenecid
18. All of the given penicillins are effective against P.areogenosa, EXCEPT:
    A. piperacillin
    B. ampicillin
    C. carbenicillin
    D. ticarcillin
19. Indications for tetracyclines do not include the following condition:
    A. leprosy
    B. tuberculosis
    C. amoebiasis
    D. acnea
20. Which of the following is not the indication for chloramphenicol:
    A. typhoid carrier state
    B. H. influenza meningitis

C. bacterial conjunctivitis
D. infections caused by B.fragilis

21. Tetracyclines are avoided in pregnancy because they can:
    A. cause abortion
    B. cause spina bifida in child
    C. affect bones in foetus
    D. cause excessive vomiting in mother
22. Adverse reactions to tetracycline do not include:
    A. cardiac toxicity
    B. bone narrow depression
    C. photosensitivity
    D. suprainfection
23. The following drugs are recommended in management of typhoid, EXCEPT:
    A. ciprofloxacin
    B. ceftriaxone
    C. cotrimoxazole
    D. cloxacillin
24. The following statements on aminoglycosides are correct, EXCEPT:
    A. streptomycin is more nephrotoxic than kanamycin
    B. neomycin is essentially used as intestinal antiseptic
    C. amikacin produces more commonly cochlear than vestibular disturbances
    D. tobramycin is more effective against P-aeruginosa than gentamicin
25. The following statement regarding aminoglycosides is incorrect:
    A. they interfere with bacterial protein synthesis
    B. they have predominantly bactericidal effects
    C. they are effective against anaerobes
    D. they exhibit a postantibiotic effect
26. Which agent can gentamicin be safely administered with:
    A. cyclosporin
    B. furosemide
    C. carbenicillin
    D. vancomycin
27. Which statement on aminoglycosides is correct?
    A. they have wide tissue distribution
    B. they have a narrow margin of safety

C. they are effective mainly against anaerobic bacteria
D. they interfere with bacterial cell membrane synthesis

28. Which of the following statement about aminoglycosides is correct:
A. they are bacteriostatic
B. they have oral bioavailability of about 90%
C. they are destroyed by microbial enzymes beta lactamase
D. they are resistant to gastric acid

29. Aminoglycosides produce the following adverse effects, except:
A. 8th nerve damage
B. hepatotoxicity
C. nephrotoxicity
D. curaremetic effect

30. Which of the following statement on isoniazid is not true?
A. it acts only on extracellular mycobacteria
B. it promotes renal elimination of pyridoxine
C. it inhibits mycolic acid synthesis in the cell wall of mycobacteria
D. its metabolism may show genetic variation.

31. Which of the following is not the indication for macrolide use?
A. pseudomembranous colitis
B. C.jejuni infection
C. mycoplasma infection
D. whooping-cough

32. The following antituberculous agent does not cause hepatic damage:
A. rifampicin
B. ethambutol
C. isoniazid
D. pyrazinamide

33. Tuberculous patients should not administrated glucocorticoides in:
A. hypersensitivity to anti TB drugs
B. intestinal tuberculosis
C. tuberculous pleural effusion
D. miliary tuberculosis

34. Pyridoxine given to a patient with TB prevents:
A. rifampicin induced hepatotoxicity
B. etnambutol induced visual defects
C. isoniazide induced peripheral nevritis
D. streptomycin induced infection

35. The antifungal agent given orally for sickish fungal infection is:
    A. amphotericin B
    B. ketoconazole
    C. flucytozin
    D. fluconazole
36. The following statement regarding Amphotericin B is true:
    A. it is administered orally
    B. it has nephrotoxic effect
    C. it exerts antimetabolite action on fungi
    D. it has narrow spectrum of antifungal activity
37. Limitations of antifungal agent ketoconazole include the following, EXCEPT:
    A. it has narrow spectrum of antifungal activity
    B. it can cause hepatic dysfunction
    C. it can inhibit hepatic microsomal enzymes
    D. it can inhibit synthesis of adrenal and Gonadal steroid synthesis.
38. Fluconazole has the following advantages over ketoconazole, except:
    A. it reaches significant levels in CSF
    B. it does not supress synthesis of adrenal and gonadal steroids
    C. it is effective both by oral as well as intravenous route
    D. it does not inhibit hepatic microsomal enzyme
39. Limitations of use of zidovudine in HIV AIDS include:
    A. it is given only parenterally
    B. it can cause bone marrow depression
    C. it has significsant effect on human DNA polymerase
    D. it is highly nephrotoxic
40. The following agent recommended in HIV/AIDS is non-nucleoside reverse transcriptase inhibitors:
    A. saquinavir
    B. neuirapine
    C. lamivadine
    D. zalcitabine
41. The following statement on antiviral agent Idoxuridine is true:
    A. it acts by inhibiting viral DNA synthesis
    B. it is administered orally
    C. it is a drug of choice in genital herpes
    D. it is a guanine nucleoside analogue

42. The following statement regarding Amantadine is true:
    A. it is useful in prophylaxis and treatment of influenza A and influenza B
    B. it acts by inhibiting release of the virus from the target cells.
    C. it is used as antiparkinson agent
    D. its usual mode of administration is parenteral
43. The following statement regarding acyclovir is true:
    A. it is an antiviral agent effective in influenza
    B. it shows very high CSF concentration when given orally
    C. it is ineffective when applied topically
    D. it acts by inhibiting viral DNA synthesis
44. The following statement on metronidazole is true, EXCEPT:
    A. it is effective against anaerobic but not against aerobic organisms
    B. its administration imparts red color to urine
    C. it can produce antabuse-like reaction
    D. it is effective as a single dose therapy in trichomoniasis
45. Advantages of metronidazole as an antiamoebic agent include the following, EXCEPT:
    A. it is effective in both intestinal and extraintestinal amoebiasis
    B. it is highly effective in a symptomatic cyst passers.
    C. as a rule it does not have significant adverse effects
    D. it is available both for oral and intravenous use.
46. Anthelmintic with immunostimulant action is:
    A. levamisole
    B. pyrantel pamoate
    C. albendazole
    D. diethylcarbamanine
47. The following drug is effective orally in ulcerative colitis:
    A. A.Sulfapyridine
    B. 5-Amino Salicilic Acid
    C. Sulfasalizine
    D. Sulfadoxine
48. Characteristics of the monobactam antibiotic aztreonam include:
    A. lack of cross-reactivity in patients allergic to penicillin
    B. activity against gram (-) aerobes
    C. not active against *Staphylococcus aureus*
    D. all of the above

49. Which of the following is active against pseudomonas aeruginosa, a gram-negative bacillus:
    A. tetracycline
    B. penicillin V
    C. ceftazidime
    D. erythromycin
50. Tick the antibiotic that should not be given to pregnant women and children:
    A. penicillin G
    B. cephalexin
    C. cefazoline
    D. tetracycline
51. This antibiotic is effective for methicillin-resistant Staphilococcus aureus (MRSA) infections:
    A. nafcillin
    B. cefazolin
    C. imipenem
    D. vancomycin
52. Tick the drug administered parenterally for the treatment of life threatening coccidioidomycosis (valley fever):
    A. streptomycin
    B. amphotericin B
    C. cefazolin
    D. gentamicin
53. Tick the bacteriostatic agent used in the treatment of legionnaire's disease and streptococcal infections in penicillin-allergic patients.
    A. ceftazidime
    B. isoniazid (INH)
    C. tetracycline
    D. erythromycin
54. Patients taking antibiotic rifampin should be warned of the following:
    A. it can cause photophobia
    B. it can increase metabolism of other drugs such as oral contraceptives
    C. it can cause heart toxicity
    D. all of the above

55. The following has been shown to be effective for the prevention of influenza A:
    A. amantadine
    B. zidovudine
    C. valaciclovir
    D. ganciclovir
56. Antiviral drug zidovudine (AZT):
    A. it inhibits reverse transcriptase
    B. it inhibits DNA polymerase activity
    C. it inhibits HIV protease
    D. A and C
    E. none of the above
57. Anti-HIV protease-inhibitors:
    A. do not undergo hepatic metabolism
    B. markedly reduce infectivity of HIV virus
    C. lower cholesterol as a beneficial side effect
    D. all of the above
58. Steven-Johnson Syndrome is most commonly associated with:
    A. amphotericin B
    B. imipenem
    C. trimethoprim/sulfamethoxazole
    D. final exams
59. The mechanism of resistance responsible for vancomycin-resistant enterococci (VRE) is:
    A. D-Ala-D-Ala terminus of peptidoglycan pentapeptide is converted to D Ala-D-lactate
    B. inactivation of vancomycin by beta-lactamase
    C. modification of target penicillin binding proteins (PBPs)
    D. presence of an efflux pump
60. The mechanism of resistance responsible for methicillin resistance in staphylococcus aureus (MRSA) and penicillin resistance in pneumococci.
    A. the D-Ala-D-Ala terminus of the peptidoglycan pentapeptide is converted to DAla-D-lactate
    B. inactivation of antibiotic by beta-lactamase
    C. modification of target penicillin binding proteins (PBPs)
    D. presence of an efflux pump

Task: Choose two or more correct answers.

1. Which of the following are pencillinase-resistant penicillins with very narrow spectrum of action?
   A. ampicillin
   B. methicilline
   C. oxacilline
   D. ticarcillin
   E. amoxicillin
2. Which of the following are pencillinase-resistant penicillins with wider spectrum of activity?
   A. methicilline
   B. ticarcillin
   C. amoxicillin
   D. ampicillin
   E. nafcillin
3. Which of the following are penicillin group adverse reactions?
   A. gastrointestinal upsets
   B. pseudomembranous colitis
   C. psychosis
   D. gray baby syndrome
   E. joint swelling
   F. anaphylaxis
4. Which of the following antibiotics have bactericide action?
   A. penicillins
   B. cphalosporins
   C. tetraciclines
   D. macrolides
   E. cloramphenicol
5. Which of the following are indications for Cloramphenicol?
   A. syphilis
   B. infections caused by Salmonella
   C. meningococcal meningitis
   D. pneumococcal meningitis
   E. infections caused by Chlamydia
6. Which of the following are adverse reactions of Cloramphenicol?
   A. superinfections
   B. aplastic anemia
   C. gray baby syndrome

D. ototoxicity
E. nephrotoxicity

7. Which of the following are characteristics of Chloramphenicol?
   A. it is distributed throughout all tissues
   B. it crosses blood – brain barriers
   C. it crosses placental barrier
   D. it has a narrow spectrum of action
   E. it is a bactericide antibiotic
   F. it inhibit bacterium cell wall synthesis
8. Which of the following are characteristics of Tetrcyclines?
   A. they have a narrow spectrum of action
   B. they are active against Gr+ and Gr-bacteria
   C. they are active against Rikettsia
   D. they are active against Chlamidia
   E. they are active against Mycoplasma
9. Which of the following are indications for Tetrcyclines?
   A. GIT ulcers caused by Helicobacter pylori
   B. syphilis
   C. prevention of flu (influenza) infection
   D. lyme disease
   E. acne
10. Which of the following are side effects of Tetrcyclines?
   A. photosensibility
   B. oral and vaginal candidiasis
   C. gray baby syndrome
   D. superinfections
   E. vestibular toxicity
   F. respiratory paralysis (curare-like)
11. Which of the following are Tetraciclines.
   A. azithromicin
   B. doxicicline
   C. minocycline
   D. clarithromycine
   E. methicilline
   F. dimeclocycline
12. Which of the following drugs are Macrolides.
   A. erythromicine
   B. minocycline

C. clarithromycine
D. methicilline
E. azithromicin

13. Tick the characteristics of Macrolides.
    A. they inhibit bacterium cell wall synthesis
    B. they inhibit bacterial protein synthesis
    C. they have broad spectrum of action
    D. they are active against Ureaplasma urealyticum
    E. they have good oral bioavailability
14. Which of the following are used for the treatment of GIT ulcers caused by Helicobacter Pylori?
    A. gentamicine
    B. ampicilline
    C. clarithromicine
    D. canamicine
    E. amoxicilline
    F. tetracycline
    G. all answers
15. Which of the following are characteristics of Streptogramins?
    A. they are bactericidal drugs
    B. they are bacteriostatic drugs
    C. they are active against penicillin–resistant pneumococci
    D. they are active against meticillin–resistant staphylococci
    E. they are active against vancomicin–resistant staphylococci
16. Which of the following are characteristics of Aminoglycosides?
    A. they have good absorption after oral administration
    B. they must be given parenterally
    C. they have limited tissue penetration
    D. they are bactericidal inhibitors of protein synthesis
    E. they have synergic action when are used in combinations with penicillins
17. Which of the following are Aminoglycosides?
    A. netilmicin
    B. azithromicine
    C. amoxicilline
    D. tobramicin
    E. amicacin
    F. streptomicin

18. Which of the following are adverse reaction of Aminoglycosides
    A. ototoxicity
    B. nephrotoxicity
    C. photosensibility
    D. neuromuscular blockade
    E. oral and vaginal candidiasis
    F. gray baby syndrome

ANSWER KEY

Antimicrobial drugs

Task: one correct answer

1) B	21) C	41) C
2) D	22) A	42) C
3) B	23) D	43) D
4) B	24) A	44) B
5) C	25) C	45) B
6) C	26) A	46) A
7) D	27) A	47) C
8) D	28) D	48) D
9) D	29) A	49) C
10) B	30) B	50) D
11) B	31) D	51) D
12) B	32) B	52) B
13) A	33) C	53) D
14) C	34) C	54) B
15) A	35) D	55) A
16) C	36) B	56) A
17) C	37) A	57) C
18) B	38) C	58) C
19) B	39) B	59) A
20) A	40) A	60) B

Task: two or more correct answers.

1) B, C	7) A, B, C	13) B, C, D
2) C, D	8) B, C, D, E	14) B, C, E, F
3) A, F	9) A, B, D, E	15) A, C, D, E
4) A, B	10) A, B, D	16) B, D, E
5) B, C, D	11) B, C, F	17) A, D, E, F
6) A, B, C	12) A, C, E	18) A, B, D, E

HORMONAL AND ANTIHORMONAL DRUGS

Task: Choose one correct answer

1. The agents that could be used to treat thyrotoxicosis in women do not include
   A. methimazole
   B. potassium iodide
   C. propylthiouracil
   D. radioactive iodine
   E. thyroglobulin
2. Potential drug toxicities of antithyroid agents are LEAST likely to include
   A. iodide ion: Acne-like rash
   B. ipodate: Skin rash
   C. methimazole: Agranulocytosis
   D. propylthiouracil: Lupus erythematosus-like syndrome
   E. radioactive iodine: Radiation damage to the ovaries
3. Actions of thyroxine do not include
   A. acceleration of cardiac rate
   B. decreased glomerular filtration rate
   C. fine tremor of skeletal muscles
   D. increased appetite
   E. stimulation of oxygen consumption
4. Effects of iodide salts given in large doses do not include
   A. decreased size of the thyroid gland
   B. decreased vascularity of the thyroid gland
   C. decreased hormone release
   D. decreased iodination of tyrosine
   E. increased iodide uptake
5. Symptoms of hypothyroidism (myxedema) do not include
   A. dry, puffy skin
   B. increased appetite
   C. large tongue and drooping of the eyelids
   D. lethargy, sleepiness
   E. slow heart rate

6. When initiating thyroxine therapy for an elderly patient with long-standing hypothyroidism, it is important to begin with small doses to avoid
    A. a flare of exophthalmos
    B. acute renal failure
    C. hemolysis
    D. overstimulation of the heart
    E. seizures
7. Effects of glucocorticoids do not include
    A. altered fat deposition
    B. increased blood glucose
    C. increased skin protein synthesis
    D. inhibition of leukotriene synthesis
    E. reduction in circulating lymphocytes
8. Toxic effects of corticosteroids do not include
    A. growth inhibition
    B. hypertension
    C. hypoglycemia
    D. psychosis
    E. salt retention
9. A 46-year-old male patient has Cushing's syndrome that is due to the presence of an adrenal tumor. Which of the following drugs would be expected to reduce the signs and symptoms of disease in this patient?
    A. betamethasone
    B. cortisol
    C. fludrocortisone
    D. ketoconazole
    E. triamcinolone
10. In the treatment of congenital adrenal hyperplasia in which there is excess production of cortisol precursors due to a lack of 21]3-hydroxylase activity, the purpose of administration of a synthetic glucocorticoid is
    A. inhibition of aldosterone synthesis
    B. normalization of renal function
    C. prevention of hypoglycemia
    D. recovery of normal immune function
    E. suppression of ACTH secretion

11. The response element of glucocorticoid is
    A. one protein regulator that controls the interaction between an activated steroid receptor and DNA
    B. a short DNA sequence that binds tightly to RNA polymerase
    C. a small protein that binds to an unoccupied steroid receptor protein and prevents it from becoming denatured
    D. a specific nucleotide sequence that is recognized by a steroid hormone receptor-hormone complex
    E. the portion of the steroid receptor that binds to DNA
12. Glucocorticoids have not been proved to be effective in the treatment of
    A. acute lymphocytic leukemia
    B. Addison's disease
    C. asthma
    D. chemotherapy-induced vomiting
    E. osteoporosis
13. For patients who have been on a long-term therapy with glucocorticoid and who wish to discontinue the drug, gradual tapering of the glucocorticoid is needed to allow the recovery of
    A. depressed release of insulin from pancreatic B-cells
    B. hematopoiesis in the bone marrow
    C. normal osteoblast function
    D. the control of water excretion by vasopressin
    E. the hypothalamic-pituitary-adrenal system
14. A 24-year-old woman with type 1 diabetes wishes to try a tight control of her diabetes to improve her long-term prognosis. Which of the following regimens is the most appropriate?
    A. morning injections of mixed lente and ultralente insulins
    B. evening injections of mixed regular and lente insulins
    C. morning and evening injections of regular insulin, supplemented by small amounts of lente insulin at mealtimes
    D. morning injections of ultralente insulin, supplemented by small amounts of insulin lispro at mealtimes
    E. morning injection of semilente insulin and evening injection of lente insulin

15. Which one of the following drugs does not promote the release of endogenous insulin?
    A. chlorpropamide
    B. glipizide
    C. pioglitazone
    D. repaglinide
    E. tolazamide
16. Effects of insulin do not include
    A. decreased conversion of amino acids into glucose
    B. decreased gluconeogenesis
    C. increased glucose transport into cells
    D. induction of lipoprotein lipase
    E. stimulation of glycogenolysis
17. A 54-year-old obese patient with type 2 diabetes and a history of alcoholism probably should not take metformin because it can increase his risk of
    A. a disulfiram-like reaction
    B. excessive weight gain
    C. hypoglycemia
    D. lactic acidosis
    E. serious hepatotoxicity
18. Which of the following drugs is taken during the first part of a meal to delay the absorption of dietary carbohydrates?
    A. acarbose
    B. colestipol
    C. glipizide
    D. pioglitazone
    E. repaglinide
19. The PPAR-y receptor that is activated by thiazolidinediones increases tissue sensitivity to insulin by
    A. activation of adenylyl cyclase and increase of intracellular concentration of cAMP
    B. inactivation of cellular inhibitor of the GLUT 2 glucose transporter
    C. inhibition of acid glucosidase, a key enzyme in glycogen breakdown pathways
    D. regulation of transcription of genes involved in glucose utilization

E. stimulation of the activity of a tyrosine kinase that phosphorylates the insulin receptor

20. Which of the following drugs is MOST likely to cause hypoglycemia when used as monotherapy in the treatment of type 2 diabetes?
    A. acarbose
    B. glyburide
    C. metformin
    D. miglitol
    E. rosiglitazone
21. Which of the following patients is MOST likely to be treated with intravenous glucagon?
    A. an 18-year-old woman who took an overdose of cocaine and now has blood pressure 190/110
    B. a 27-year-old woman with severe diarrhea due to a flare in her inflammatory bowel disease
    C. a 57-year-old female with type 2 diabetes who has not taken her glyburide for the past three days
    D. a 62-year-old man with severe bradycardia and hypotension due to ingestion of an overdose of atenolol
    E. a 74-year-old male with lactic acidosis as a complication of severe infection and shock.

Task: Choose two or more correct answers.

1. Indication for use of iodine preparation as antitiroid drugs
    A. increased radiation
    B. protect the thyroid gland from radioactive iodine
    C. autoimmune thyroiditis with hypofunction
    D. severe forms of thyrotoxicosis in preparation to surgical intervention
    E. mixedematous coma
2. Tick the pharmacological features of beta-adrenoblockers as antithyroid drugs
    A. they decrease the clinical symptoms of thyreotoxicosis
    B. they warn iodine uptake
    C. they inhibit conversion of T4 to T3
    D. they are indicated in allergy – induced by thioamides
    E. they are drugs of choice in hypothyroidism

3. Pharmacokinetic features of thyoamides are:
   A. they are absorbed slowly and incompletely
   B. they are rapidly and completely absorbed
   C. they are accumulated selectively in thyroid glands
   D. they are metabolized rapidly to form inactive compounds
   E. they are metabolized to form active compounds
4. Tick the human insulins with ultrafast and ultrashort action
   A. insulin regulare
   B. insulin aspart
   C. insulin glardine
   D. insulin lisepro
   E. insulin detemir
5. Tick insulin with long-term action
   A. insulin isofane
   B. insulin glardine
   C. insulin detemir
   D. insulin regulare
   E. insulin.
6. Tick the effects of insulin after binding to membrane receptors
   A. it enters intracellular and intranuclear
   B. it regulate a gene transcription
   C. it increases glucose transport into cells
   D. it stimulates gluconeogenesis
   E. it regulates glucose metabolism in cells
7. Clinical manifestations of hypoglycemia caused by insulinoma are:
   A. bradycardia
   B. tachycardia
   C. muscular weakness
   D. sedation
   E. hypotension
8. Subjective symptoms of hypoglycemia are:
   A. fear
   B. excitability
   C. sedation
   D. hypokinesia
   E. aggressiveness
9. Causes of false insulin resistance are:
   A. increased immunoglobulin
   B. increased use of carbohydrates

C. infection
D. poor nutrition
E. massive surgical intervention

10. Tick the hypoglycemic mechanisms of sulphonilurea derivates
A. they reduce hyperglycemia
B. they induce hyperglycemia
C. the effect is more evident when glucose is very high
D. the effect develops slowly with increasing effectiveness
E. they are more evident early in treatment

11. The effects of sulphonylurea derivatives characteristic outside of the hypoglycemic
A. leukopenia
B. cholestasis
C. increased body weight
D. decreased body weight
E. prooxidant

12. Indications for use sulphonylurea derivatives are:
A. type I diabetes
B. type II diabetes with ideal weight
C. type II diabetes at persons aged 35–40
D. type II diabetes with complications
E. type II diabetes, mild form

13. Hypoglycemic effect of biguanides
A. is produced by extrapancreatic effects
B. hypoglycemia is a frequent symptom
C. the effect depends on the dose
D. weight gain
E. is produced by pancreatic effects

14. The effects of biguanides characteristic, outside of the hypoglycemic
A. anorexigenic
B. orexigenic
C. lipid lowering
D. fibrinolytic
E. hyperlipidemia

15. Tick the indications for biguanides:
A. unstable type II diabetes in combination with sulphonylurea, insulinoma
B. type I diabetes with anorexia

C. type II diabetes with obesity
D. type II diabetes with complication
E. allergy to insuline

16. Tick the side effects of biduanides
A. hypoglycemia until coma
B. lactacidosis
C. hyperchrome (megaloblastic) anemia
D. nephritis
E. dyspeptic manifestation (anorexia, metallic taste, diarrhea)

17. Tick the specific thiazolidinedione hypoglycemic effects
A. they increase insulin sensitivity of liver, muscle and adipose tissue
B. their effect develops rapidly with hypoglycemia
C. they decrease insulin resistance
D. their effect develops slowly
E. they increase considerable insulin secretion

18. Tick the characterizations of hypoglycemic effect of meglytinides:
A. the effect appears slowly but maintains long
B. they imitate physiological insulin secretion
C. they have short effect
D. they increase insulin secretion between meals
E. they decrease postprandial glycemia

19. Which of the following salts of corticosteroids for intramuscular may be indicated, to form a drug depot:
A. acetonide
B. hydrochloride
C. acetate
D. sodium phosphate
E. hemisuccinate

20. Tick the glucocorticoide salts that are used intravenously
A. acetonide
B. hydrochloride
C. acetate
D. sodium phosphate
E. hemisuccinate

21. Tick glucocorticoides with moderate activity
A. triamcynolone
B. methylprednisolone

C. bethametasone
D. cortisone
E. prednisolone

22. Tick short acting glucocorticoides
A. dexamethasone
B. hydrocortisone
C. bethametasone
D. cortisone
E. prednisolone

23. Tick inhaled corticosteroids
A. fluticasone
B. budesonide
C. dexamethasone
D. triamcynolone
E. beclomethasone

24. Tick corticosteroids for topical use
A. flumethasone
B. momethasone
C. dexamethasone
D. triamcynolone
E. halomethasone

25. For what purpose are glucocorticoids used
A. etiological
B. diagnosis
C. suppressive
D. immunostimulator
E. substitution

26. What effects are the basis of antishock action of glucocorticoids
A. increases minutes – beat and minutes – volume
B. ino- and cronotrop negative effects
C. decreased trelease of histamine and other mediators
D. increased sensitivity to catecholamine
E. stimulation of hyaluronidase

27. What effects are the basis of antiallergic action of glucocorticoids
A. decreased mediator release
B. increased release of interleukin 1; 2 and TNF
C. they are functional antagonists of mediators
D. decreased release of IL 1; 2 and TNF
E. they inhibit histamine receptors

28. Tick the particularity of using of glucccorticoids in acute secondary adrenal insufficiency
    A. the drugs of first choice are natural glucocorticoids
    B. they are indicated according to the circadian rhythm
    C. synthetic glucocorticoids without mineralocorticoid effect are indicated
    D. synthetic glucocorticoids that have marked mineralocorticoid effect are indicated

ANSWER KEY

Hormonal and antihormonal drugs

Task: one correct answer

1) E
2) E
3) B
4) E
5) B
6) D
7) C
8) C
9) D
10) E
11) D
12) E
13) E
14) D
15) C
16) E
17) D
18) A
19) D
20) B
21) D

Task: two or more correct answers.

1) B, D
2) A, C
3) B, C, D
4) B, D
5) B, C
6) B, C, E
7) B, C
8) A, B, E
9) B, C, E
10) A, D, E
11) A, B, C
12) B, C, E
13) A, C
14) A, C, D
15) A, C, E
16) B, C, E
17) A, C, D
18) B, C, E
19) A, C
20) B, D, E
21) A, B, E
22) B, D
23) A, B, E
24) A, B, E
25) B, C, E
26) A, C, D
27) A, D
28) A, B, C