019. All of the following statements about efficacy and potency are true EXCEPT:
   a) Efficacy is usually a more important clinical consideration than potency
   b) Efficacy is the maximum effect of a drug
   c) Potency is a comparative measure, refers to the different doses of two drugs that are needed to produce the same effect
   d) The ED50 is a measure of drug’s efficacy

020. Give the definition for a therapeutic dose:
   a) The amount of a substance to produce the minimal biological effect
   b) The amount of a substance to produce effects hazardous for an organism
   c) The amount of a substance to produce the required effect in most patients
   d) The amount of a substance to accelerate an increase of concentration of medicine in an organism

021. Pick out the correct definition of a toxic dose:
   a) The amount of substance to produce the minimal biological effect
   b) The amount of substance to produce effects hazardous for an organism
   c) The amount of substance to produce the necessary effect in most of patients
   d) The amount of substance to fast creation of high concentration of medicine in an organism

022. Which effect may lead to toxic reactions when a drug is taken continuously or repeatedly?
   a) Refractoriness
   b) Cumulative effect
   c) Tolerance
   d) Tachyphylaxis

023. What term is used to describe a more gradual decrease in responsiveness to a drug, taking days or weeks to develop?
   a) Refractoriness
   b) Cumulative effect
   c) Tolerance
   d) Tachyphylaxis

024. What term is used to describe a decrease in responsiveness to a drug which develops in a few minutes?
   a) Refractoriness
   b) Cumulative effect
   c) Tolerance
   d) Tachyphylaxis

025. Tachyphylaxis is:
   a) A drug interaction between two similar classes of drugs
   b) Very rapidly developing tolerance
   c) A decrease in responsiveness to a drug, taking days or weeks to develop
   d) None of the above

026. Drug resistance is a term used to describe the loss of effectiveness of antimicrobial or antitumour drugs. This consideration is:
   a) True
   b) False

027. Tolerance and drug resistance can be a consequence of:
   a) Drug dependence
   b) Increased metabolic degradation
   c) Depressed renal drug excretion
   d) Activation of a drug after hepatic first-pass

028. Tolerance and drug resistance can be a consequence of:
   a) Change in receptors, loss of them or exhaustion of mediators
   b) Increased receptor sensitivity
   c) Decreased metabolic degradation
   d) Decreased renal tubular secretion

029. Tolerance develops because of:
   a) Diminished absorption
   b) Rapid excretion of a drug
   c) Both of the above
   d) None of the above

030. Dependence is often associated with tolerance to a drug, a physical abstinence syndrome, and psychological dependence (craving). This consideration is:
   a) True
   b) False
Which of the following drugs is used for acute toxic effects of organophosphate cholinesterase inhibitors?

- a) Atropine
- b) Pilocarpine
- c) Pralidoxime
- d) Edrophonium

**PART III Cholinoreceptor blocking drugs**

001. The group of nicotinic receptor-blocking drugs consists of:
- a) Ganglion-blockers
- b) Atropine-similar drugs
- c) Neuromuscular junction blockers
- d) Both a and c

002. M₃ receptor subtype is located:
- a) In the myocardium
- b) In sympathetic postganglionic neurons
- c) On effector cell membranes of glandular and smooth muscle cells
- d) On the motor end plates

003. Which of the following drugs is both a muscarinic and nicotinic blocker?
- a) Atropine
- b) Benztropine
- c) Hexamethonium
- d) Succinylcholine

004. Indicate a muscarinic receptor-blocking drug:
- a) Scopolamine
- b) Piscuronium
- c) Trimethaphan
- d) Pilocarpine

005. Which of the following agents is a ganglion-blocking drug?
- a) Homatropine
- b) Hexamethonium
- c) Rapacuronium
- d) Edrophonium

006. Indicate a skeletal muscle relaxant, which is a depolarizing agent:
- a) Vancuronium
- b) Scopolamine
- c) Succinylcholine
- d) Hexamethonium

007. Which of the following drugs is a nondepolarizing muscle relaxant?
- a) Pancuronium
- b) Succinylcholine
- c) Hexamethonium
- d) Scopolamine

008. Indicate the drug, which is rapidly and fully distributed into CNS and has a greater effect than most other antimuscarinic agents?
- a) Atropine
- b) Scopolamine
- c) Homatropine
- d) Ipratropium

009. The effect of the drug on parasympathetic function declines rapidly in all organs EXCEPT:
- a) Eye
- b) Heart
- c) Smooth muscle organs
- d) Glands

010. The mechanism of atropine action is:
- a) Competitive ganglion blockade
- b) Competitive muscarinic blockade
- c) Competitive neuromuscular blockade
- d) Noncompetitive neuromuscular blockade

011. The tissues most sensitive to atropine are:
a) Succinylcholine  
b) Rapacuronium  
c) Pancuronium  
d) Tubocurarine

048. Indicate the neuromuscular blocker, whose breakdown product readily crosses the blood-brain barrier and may cause seizures:
   a) Pancuronium  
   b) Succinylcholine  
   c) Tubocurarine  
   d) Atracurium

049. Which competitive neuromuscular blocking agent could be used in patients with renal failure?
   a) Atracurium  
   b) Succinylcholine  
   c) Pipecuronium  
   d) Doxacurium

050. Indicate the nondepolarizing agent, which has short duration of action:
   a) Succinylcholine  
   b) Tubocurarine  
   c) Mivacurium  
   d) Pancuronium

051. Which depolarizing agent has the extremely brief duration of action?
   a) Mivacurium  
   b) Rapacuronium  
   c) Rocuronium  
   d) Succinylcholine

052. Neuromuscular blockade by both succinylcholine and mivacurium may be prolonged in patients with:
   a) Renal failure  
   b) An abnormal variant of plasma cholinesterase  
   c) Hepatic disease  
   d) Both b and c

053. Depolarizing agents include all of the following properties EXCEPT:
   a) Interact with nicotinic receptor to compete with acetylcholine without receptor activation  
   b) React with the nicotinic receptor to open the channel and cause depolarisation of the end plate  
   c) Cause desensitization, noncompetitive block manifested by flaccid paralysis  
   d) Cholinesterase inhibitors do not have the ability to reverse the blockade

054. Which of the following neuromuscular blockers causes transient muscle fasciculations?
   a) Mivacurium  
   b) Pancuronium  
   c) Succinylcholine  
   d) Tubocurarine

055. Indicate muscles, which are more resistant to block and recover more rapidly:
   a) Hand  
   b) Leg  
   c) Neck  
   d) Diaphragm

056. Which neuromuscular blocking agent has the potential to cause the greatest release of histamine?
   a) Succinylcholine  
   b) Tubocurarine  
   c) Pancuronium  
   d) Rocuronium

057. Which of the following muscular relaxants causes hypotension and bronchospasm?
   a) Vecuronium  
   b) Succinylcholine  
   c) Tubocurarine  
   d) Rapacuronium

058. Indicate the neuromuscular blocker, which causes tachycardia:
   a) Tubocurarine  
   b) Atracurium  
   c) Pancuronium  
   d) Succinylcholine

059. Which of the following neuromuscular blocking agents cause cardiac arrhythmias?
b) Baroreflex mechanism
c) Direct effect on the heart by stimulation of beta receptors
d) Inhibition of transmitter reuptake at noradrenergic synapses

016. Nonselective alfa-receptor antagonists are most useful in the treatment of:
   a) Asthma
   b) Cardiac arrhythmias
   c) Pheochromocytoma
   d) Chronic hypertension

017. The main reason for using alfa-receptor antagonists in the management of pheochromocytoma is:
   a) Inhibition of the release of epinephrine from the adrenal medulla
   b) Blockade of alfa receptors on vascular smooth muscle results in epinephrine stimulation of unblocked alfa receptors
   c) Direct interaction with and inhibition of beta adrenoreceptors
   d) Antagonism to the release of renin

018. Which of the following drugs is useful in the treatment of pheochromocytoma?
   a) Phenylephrine
   b) Propranolol
   c) Phentolamine
   d) Epinephrine

019. Indicate adrenoreceptor antagonist agents, which are used for the management of pheochromocytoma:
   a) Selective beta2-receptor antagonists
   b) Nonselective beta-receptor antagonists
   c) Indirect-acting adrenoreceptor antagonist drugs
   d) Alfa-receptor antagonists

020. The principal adverse effects of phentolamine include all of the following EXCEPT:
   a) Diarrhea
   b) Bradycardia
   c) Arrhythmias
   d) Myocardial ischemia

021. Indicate the reversible nonselective alfa-receptor antagonist, which is an ergot derivative:
   a) Ergotamine
   b) Prazosin
   c) Phenoxybenzamine
   d) Carvedilol

022. Indicate an alfa-receptor antagonist, which binds covalently to alfa receptors, causing irreversible blockade of long duration (14-48 hours or longer):
   a) Phenolamine
   b) Phenoxybenzamine
   c) Ergotamine
   d) Prazosin

023. Compared with phentolamine, prazosin has all of the following features EXCEPT:
   a) Irreversible blockade of alfa receptors
   b) Highly selective for alfa1 receptors
   c) The relative absence of tachycardia
   d) Persistent block of alfa1 receptors

024. Which of the following statements is not correct?
   a) There are at least three subtypes of alfa1 receptors, designated alfa1a, alfa1b and alfa1d
   b) ALFA1a subtype mediates prostate smooth muscle contraction
   c) ALFA1b subtype mediates vascular smooth muscle contraction
   d) ALFA1a subtype mediates both vascular and prostate smooth muscle contraction

025. Indicate an alfa1 adrenoreceptor antagonist, which has great selectivity for alfa1a subtype:
   a) Prazosin
   b) Tamsulosin
   c) Phenoxybenzamine
   d) Phentolamine

026. Subtype-selective alfa1 receptor antagonists such as tamsulosin, terazosin, alfusosin are efficacious in:
   a) Hyperthyroidism
   b) Cardiac arrhythmias
   c) Benign prostatic hyperplasia (BPH)
   d) Asthma
009. Indicate the irreversible MAO inhibitor, which is a hydrazide derivative:
   a) Moclobemide
   b) Selegiline
   c) Tranylcypromine
   d) Phenelzine

010. Which of the following MAO inhibitors has amphetamine-like activity and is related to nonhydrazide derivatives:
   a) Phenelzine
   b) Moclobemide
   c) Tranylcypromine
   d) All of the above

011. Which of the following antidepressants is a selective short-acting MAO-A inhibitor?
   a) Maprotiline
   b) Amitriptyline
   c) Moclobemide
   d) Selegiline

012. Monoamine Oxidase A:
   a) Is responsible for norepinephrine, serotonin, and tyramine metabolism
   b) Is more selective for dopamine
   c) Metabolizes norepinephrine and dopamine
   d) Deaminates dopamine and serotonin

013. Which synapses are involved in depression?
   a) Dopaminergic synapses
   b) Serotoninergic synapses
   c) Cholinergic synapses
   d) All of the above

014. Block of which type of Monoamine Oxidase might be more selective for depression?
   a) MAO-A
   b) MAO-B
   c) Both MAO-A and MAO-B
   d) MAO-C

015. The principal mechanism of MAO inhibitor's action is:
   a) Blocking the amine reuptake pumps, which permits to increase the concentration of the neurotransmitter at the receptor site
   b) Blocking a major degradative pathway for the amine neurotransmitters, which permits more amines to accumulate in presynaptic stores
   c) Inhibition the storage of amine neurotransmitters in the vesicles of presynaptic nerve endings
   d) Antagonism of α2-norepinephrine receptors

016. 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

017. The most dangerous pharmacodynamic interaction is between MAO inhibitors and:
   a) Selective serotonin reuptake inhibitors
   b) Tricyclics
   c) Sympathomimetics
   d) All of the above

018. Serotonin syndrome is a 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

019. 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

020. Which of the following antidepressants may have latency period as short as 48 hours?
   a) Tranylcypromine
   b) Imipramine
   c) Fluoxetine
d) Caffeine

012. Indicate a general tone-increasing drug, which is an agent of animal origin?
   a) Pantocrin
   b) Amphetamine
   c) Sydnocarb
   d) Camphor

013. Amphetamine:
   a) Is a powerful stimulant of the CNS
   b) Stimulates the medullar respiratory center and has an analeptic action
   c) Increases motor and speech activity, mood, decreases a sense of fatigue
   d) All of the above

014. The mechanism of amphetamine action is related to:
   a) Direct catecholamiergic agonist action
   b) Inhibition of monoamine oxidase
   c) Increasing a release of catecholamnergic neurotransmitters
   d) All of the above

015. Indicate the CNS stimulant, which is a piperidine derivative:
   a) Meridil
   b) Amphetamine
   c) Caffeine
   d) Sydnophen

016. Which of the following CNS psychostimulants is a sydnonymine derivative?
   a) Caffeine
   b) Sydnocarb
   c) Meridil (methylphenidate hydrochloride)
   d) Amphetamine

017. Sydnocarb causes:
   a) Decreased sense of fatigue, it facilitates the professional work and fights somnolence
   b) The feeling of prosperity, relaxation and euphoria
   c) Influx of physical and mental forces, locomotive and speech excitation
   d) Peripheral sympathomimetic action

018. Indicate the psychostimulant, which is a methylxantine derivative:
   a) Caffeine
   b) Sydnocarb
   c) Amphetamine
   d) Meridil

019. Which of the following psychostimulants acts centrally mainly by blocking adenosine receptors?
   a) Meridil
   b) Caffeine
   c) Amphetamine
   d) Sydnophen

020. Principal properties of caffeine include all of the following EXEPT:
   a) Cardiac analeptic (increase the rate and the force of the cardiac contraction)
   b) Adaptogenic (rise non-specific resistance towards stresses and adapt to extraordinary challenges)
   c) Psychoanaleptic (decrease the feeling of tiredness, facilitates the professional work and fights somnolence)
   d) Respiratory analeptic (stimulate the bulbar respiratory center)

021. Caffeine can produce all of the following effects except:
   a) Coronary vasodilation
   b) Relaxation of bronchial and biliary tract smooth muscles
   c) Vasodilation of cerebral vessels
   d) Reinforcement of the contractions and increase of the striated muscle work

022. Caffeine does not cause:
   a) Inhibition of gastric secretion
   b) Hyperglycemia
   c) Moderate diuretic action
   d) Increase in free fatty acids

023. Therapeutic uses of caffeine include all of the following EXCEPT:
   a) Cardiovascular collapse and respiratory insufficiency
   b) Migraine
   c) Somnolence
   d) Gastric ulceration
024. Adverse effects of caffeine include all of the following EXCEPT:
   a) Arrhythmias
   b) Insomnia
   c) Hypotension
   d) Psychomotor excitation

025. Principal properties of cordiamine include all of the following EXCEPT:
   a) Cardiac analeptic
   b) Respiratory analeptic
   c) Coronarodilatator
   d) Significant abuse potential

026. Characteristics of cordiamine include all of the following EXCEPT:
   a) It stimulates the CNS and facilitates the movement coordination
   b) It is a respiratory analeptic of mixed action (stimulates both the medullar respiratory center and chemoreceptor of carotid sinus zone)
   c) It decreases the aortic and coronary flow
   d) It counteracts the central depression produced by other drugs (barbiturates)

027. Cordiamine is useful in the treatment of:
   a) Hypotension
   b) Coronary insufficiency
   c) Respiratory insufficiency
   d) All of the above

028. Respiratory and cardiac analeptics are all of the following agents EXCEPT:
   a) Cordiamine
   b) Bemegride
   c) Caffeine
   d) Camphor

029. Bemegride:
   a) Stimulates the medullar respiratory center (central effect)
   b) Stimulates hemoreceptors of carotid sinus zone (reflector action)
   c) Is a mixed agent (both central and reflector effects)
   d) Is a spinal analeptic

030. Which of the following CNS stimulants belongs to nootropics?
   a) Camphor
   b) Pantocrin
   c) Sydnocarb
   d) Piracetam

031. Characteristics of nootropics include all of the following EXCEPT:
   a) Selective influence on the brain
   b) Improvement the ability to communicate with peers
   c) Decline in the highest integrative brain functions
   d) Increase in energetic exchange of the brain cells

032. Which of the following statements concerning nootropics is not correct?
   a) They improve the highest integrative brain functions (memory, learning, understanding, thinking and the capacity for concentration)
   b) They stimulate the bulbar respiratory center
   c) They stimulate existing neuronal synapses to optimum performance (adaptive capacity)
   d) They stimulate existing neuronal synapses to damaging influences, such as disturbances of the energy and neurotransmitter metabolism or ischemia (protective capacity)

033. Features of piracetam include all of the following EXCEPT:
   a) It is a GABA derivative
   b) It does not influence the neuro-vegetative function
   c) Improvement begins in the 3rd week
   d) It has a high potential of toxicity

034. Piracetam can produce all of the following effects EXCEPT:
   a) Antipsychotic
   b) Anticonvulsant
   c) Psychometabolic
   d) Antihypoxic

035. Piracetam is widely used for the treatment of:
   a) Senile dementia
   b) Asthenia
c) Chronic alcoholism  
d) All of the above

036. Indicate the CNS stimulant, which is used in pediatric medicine, as it improves the communication with the child, increases the ability to study and communication with peers, improves school-performance?
   a) Meridil
   b) Piracetam
   c) Bemegride
   d) Amphetamine

037. Which of the following CNS stimulants is used for the cerebral stroke treatment?
   a) Pantocrin
   b) Sydnocarb
   c) Piracetam
   d) Caffeine

PART XI Drugs of abuse

001. Psychologic dependence is:
   a) Decreased responsiveness to a drug following repeated exposure
   b) A combination of certain drug-specific symptoms that occur on sudden discontinuation of a drug
   c) Compulsive drug-seeking behavior
   d) All of the above

002. 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

003. Addiction is associated with the existence of:
   a) Psychological dependence
   b) Physiological dependence
   c) Tolerance
   d) All of the above

004. Substances causing narco- and glue sniffings are all of the following EXCEPT:
   a) Stimulants
   b) Antipsychotic drugs
   c) Psilocybin
   d) Sedative drugs

005. Which of the following abused drugs do not belong to sedative agents?
   a) Barbiturates
   b) Tranquilizers
   c) Cannabinoids
   d) Opioids

006. Psychedelics are all of following agents EXCEPT:
   a) Cocaine
   b) LSD
   c) Marijuana
   d) Volatile substances (glues, solvents, volatile nitrites and nitrous oxide)

007. In contrast to morphine, heroin is:
   a) Used clinically
   b) More addictive and fast-acting
   c) More effective orally
   d) Less potent and long-acting

008. Symptoms of opioid withdrawal begin 8-10 hours after the last dose.
   a) True
   b) False

009. The acute course of opioid withdrawal may last:
   a) 3-4 days
   b) 7-10 days
   c) 3-4 weeks
   d) 26-30 weeks

010. Indicate the sedative-hypnotic agent, which has the highest abuse potential:
   a) Buspirone
c) They increase vagal tone  
d) They have a very low therapeutic index

014. All of the following statements regarding cardiac glycosides are true EXCEPT:
   a) Digoxin is a mild inotrope  
   b) Digoxin increases vagal tone  
   c) **Digoxin has a longer half-life than digitoxin**  
   d) Digoxin acts by inhibiting the Na+/K+ ATPase

015. The most cardiac manifestation of glycosides intoxication is:
   a) Atrioventricular junctional rhythm  
   b) Second-degree atrioventricular blockade  
   c) Ventricular tachycardia  
   d) **All the above**

016. The manifestations of glycosides intoxication are:
   a) Visual changes  
   b) Ventricular tachyarrhythmias  
   c) Gastrointestinal disturbances  
   d) **All the above**

017. For digitalis-induced arrhythmias the following drug is favored:
   a) Verapamil  
   b) Amiodarone  
   c) **Lidocaine**  
   d) Propanolol

018. In very severe digitalis intoxication the best choice is to use:
   a) Lidocaine  
   b) **Digibind (Digoxin immune fab)**  
   c) Oral potassium supplementation  
   d) Reducing the dose of the drug

019. All of the following statements regarding cardiac glycoside-induced ventricular tachyarrhythmias are true EXCEPT:
   a) Lidocaine is a drug of choice in treatment  
   b) Digibind should be used in life-threatening cases  
   c) They occur more frequently in patients with hyperkalemia than in those with hypokalemia  
   d) They are more likely to occur in patients with a severely damaged heart

020. This drug is a selective beta-1 agonist:
   a) Digoxin  
   b) Dobutamine  
   c) Amrinone  
   d) Dopamine

021. Tolerance to this inotropic drug develops after a few days:
   a) Amrinone  
   b) Amiodarone  
   c) **Dobutamine**  
   d) Adenosine

022. This drug inhibits breakdown of cAMP in vascular smooth muscle:
   a) Digoxin  
   b) Dobutamine  
   c) **Amrinone**  
   d) Dopamine

023. This drug is useful for treating heart failure because it increases the inotropic state and reduces afterload:
   a) Amiodarone  
   b) **Amrinone**  
   c) Propanolol  
   d) Enalapril

024. This drug acts by inhibiting type III cyclic nucleotide phosphodiesterase:
   a) Amiodarone  
   b) Milrinone  
   c) Propanolol  
   d) Enalapril

025. All of the following statements regarding inhibitors of type III phosphodiesterase are true EXCEPT:
   a) They raise cAMP concentrations in cardiac myocytes  
   b) They reduce afterload  
   c) **They show significant cross-tolerance with beta-receptor agonists**
PART VIII Antihypertensive drugs

001. This drug reduces blood pressure by acting on vasomotor centers in the CNS:
   a) Labetalol
   b) Clonidine
   c) Enalapril
   d) Nifedipine

002. All of the following are central acting antihypertensive drugs EXCEPT:
   a) Methyldopa
   b) Clonidine
   c) Moxonidine
   d) Minoxidil

003. A ganglioblocking drug for hypertension treatment is:
   a) Hydralazine
   b) Tubocurarine
   c) Trimethaphan
   d) Metoprolol

004. Pick out the sympatholythic drug:
   a) Labetalol
   b) Prazosin
   c) Guanethidine
   d) Clonidine

005. Tick the drug with nonselective beta-adrenoblocking activity:
   a) Atenolol
   b) Propranolol
   c) Metoprolol
   d) Nebivolol

006. Choose the selective blocker of beta-1 adrenoreceptors:
   a) Labetalol
   b) Prazosin
   c) Atenolol
   d) Propranolol

007. Pick out the drug – an alpha and beta adrenoreceptors blocker:
   a) Labetalol
   b) Prazosin
   c) Nifedipine
   d) Metoprolol

008. This drug inhibits the angiotensin-converting enzyme:
   a) Captopril
   b) Enalapril
   c) Ramipril
   d) All of the above

009. This drug is a directly acting vasodilator:
   a) Labetalol
   b) Clonidine
   c) Enalapril
   d) Nifedipine

010. Pick out the diuretic agent for hypertension treatment:
   a) Losartan
   b) Dichlothiazide
   c) Captopril
   d) Prazosin

011. This drug blocks alpha-1 adrenergic receptors:
   a) Prazosin
   b) Clonidine
   c) Enalapril
   d) Nifedipine

012. This drug activates alpha-2 adrenergic receptors:
   a) Labetalol
   b) Phentolamine
   c) Clonidine
   d) Enalapril
007. For increasing blood pressure in case of low cardiac output the following agents must be used:
   a) Ganglioblockers
   b) Vasconstrictors
   c) Positive inotropic drugs
   d) Diuretics

008. Tick the positive inotropic drug of glycoside structure:
   a) Dopamine
   b) Digoxin
   c) Dobutamine
   d) Adrenalin

009. Tick the positive inotropic drug of non-glycoside structure:
   a) Digitoxin
   b) Digoxin
   c) Dobutamine
   d) Strophanthin

010. Dopamine at low doses influences mainly:
   a) Alpha-adrenoreceptors (leads to peripheral vasoconstriction)
   b) Dopamine receptors (leads to vasodilation of renal and mesenterial vessels)
   c) Beta-1 adrenoreceptors (leads to enhanced cardiac output)
   d) All of the above

011. Dopamine at medium doses influences mainly:
   a) Alpha-adrenoreceptors (leads to peripheral vasoconstriction)
   b) Dopamine receptors (leads to vasodilation of renal and mesenterial vessels)
   c) Beta-1 adrenoreceptors (leads to enhanced cardiac output)
   d) All of the above

012. Dopamine in high doses influences mainly the:
   a) Alpha-adrenoreceptors (leads to peripheral vasoconstriction)
   b) Dopamine receptors (leads to vasodilation of renal and mesenterial vessels)
   c) Beta-1 adrenoreceptors (leads to enhanced cardiac output)
   d) All of the above

013. Tick the group of drugs for treatment of shock with hypovolaemia (reduced circulating blood volume):
   a) Positive inotropic drugs
   b) Vasconstrictors
   c) Plasmoexpanders
   d) Analeptics and tonics

014. Tick the group of drugs for chronic hypotension treatment:
   a) Positive inotropic drugs
   b) Vasconstrictors
   c) Plasmoexpanders
   d) Analeptics and tonics

015. Indicate the group of drugs influencing the cerebral flow:
   a) Ca-channel blockers
   b) Derivatives of GABA
   c) Derivatives of Vinca minor plant
   d) All the above

016. Tick the drug influencing the blood flow which is related to antiplatelet agents:
   a) Heparin
   b) Aspirin
   c) Pyracetam
   d) Tanakan

017. Which of the following drugs is related to anticoagulants and may be useful in disorders of cerebral circulation?
   a) Aspirin
   b) Cinnarizine
   c) Nicergoline
   d) Heparin

018. Indicate the drugs which are Ca-channel blockers influencing the brain blood flow:
   a) Aminalon, Picamilon
   b) Nimodipine, Cinnarizine
   c) Heparin, Warfarin
   d) Vinpocetine, Nicergoline

019. Indicate the drugs influencing the blood flow in the brain - derivatives of GABA:
a) Aminalon, Picamilon
b) Nimodipine, Cinnarizine
c) Heparin, Warfarin
d) Vinpocetine, Nicergoline

020. Indicate the drug - Vinca minor alcaloid:
   a) Nicergoline
   b) Warfarin
   c) Cinnarizine
   d) Vinpocetine

021. Tick the drug – a derivative of Ergot:
   a) Nicergoline
   b) Warfarin
   c) Cinnarizine
   d) Vinpocetine

022. Indicate the nootropic agent useful in disorders of brain circulation:
   a) Aspirin
   b) Pyracetam
   c) Warfarin
   d) All the above

023. What is the main action of GABA derivatives in disorders of brain circulation?
   a) Decrease of vessel permeability
   b) Stimulation of the metabolic processes in neurons
   c) Brain vessel constriction
   d) Intracranial pressure increase

024. Choose the appropriate mechanism of vinpocetine action:
   a) It dilates cerebral vessels and improves blood supply
   b) It constricts cerebral vessels and decreases blood supply
   c) It stimulates GABA-receptors and thus increases cerebral metabolic processes
   d) It constricts peripheral vessels and increases blood pressure

025. Antiaggregants are used in disorders of brain circulation for:
   a) Stimulation of the metabolic processes in neurons
   b) Dilation of cerebral vessels
   c) Improving the microcirculation in cerebral tissue
   d) All the above

026. Migraine is a disorder connected with:
   a) Thrombosis of cerebral vessels
   b) Brain hemorrhage
   c) Dysfunction of regulation of cerebral vessel tonus
   d) Malignant growth in brain

027. Main agents for acute migraine attack treatment are Ergot and indol derivatives and NSAID’s. The consideration is:
   a) True
   b) False

028. The following Indol derivative is used for treatment of acute migraine attack:
   a) Paracetamol
   b) Sumatriptan
   c) Ergotamine
   d) Metoclopramide

029. The following Ergot derivative is used for treatment of acute migraine attack:
   a) Paracetamol
   b) Sumatriptan
   c) Ergotamine
   d) Metoclopramide

030. The derivative of lysergic acid for migraine attack prevention is:
   a) Metoclopramide
   b) Methysergide
   c) Sumatriptan
   d) Ergotamine
Radioiodines (I\(_{131}\) and I\(_{132}\)) is suitable for:

a) Elderly patients (over 45 years)
b) Pregnant women
c) Nursing mothers
d) Younger patients

Radioiodines in the body emit:

a) Mainly \(\beta\) radiations 
b) Mainly \(\gamma\) radiations 
c) \(\beta\) and \(\gamma\) radiations equally.
d) Do not emit any radiation, therefore, are safe

**PART II Pancreatic Hormones & Antidiabetic Drugs**

001. Secretory products of pancreatic \(\beta\)-cells are:

a) Glucagon, proglucagon 
b) Insulin, C-peptide, proinsulin, islet amyloid polypeptide (IAPP) 
c) Somatostatin 
d) Pancreatic polypeptide (PP)

002. Insulin is:

a) A glycoprotein with a molecular weight of 6000 
b) A small protein with a molecular weight of 5808 having disulphide linkage 
c) A fructooligosaccharide 
d) A catecholamine

003. Insulin is a polypeptide hence:

a) It is resistant to destruction by gastric juice 
b) It is destroyed by gastric juice 
c) It is not a polypeptide 
d) It is metabolized immediately by cellular enzymes

004. Bovine insulin is less antigenic than porcine. This consideration is:

a) True 
b) False

005. Insulin causes reduction in blood sugar level by the following mechanisms, EXCEPT:

a) Increased glucose uptake in the peripheral tissue 
b) Reduction of \(\beta\) breakdown of glycogen 
c) Diminished gluconeogenesis 
d) Decreased glucose absorption from the gut

006. Which of the following is true for glucagon?

a) Stimulates gluconeogenesis in the liver 
b) Stimulates the secretion of insulin by beta cells 
c) Inhibits glucose utilization by skeletal muscle 
d) Inhibits uptake of aminoacids by cells.

007. Insulin can not be administered by:

a) Oral route 
b) Intravenous route 
c) Subcutaneous route 
d) Intramuscular route.

008. Sources of human insulin production are:

a) Recombinant DNA techniques by inserting the proinsulin gene into E. coli or yeast 
b) Postmortem insulin extraction from human autopsy pancreas 
c) All of the above 
d) None of the above

009. The primary reason for a physician to prescribe human insulin is that:

a) It has a faster onset of action than other insulins 
b) It has a shorter duration of action than other insulins 
c) It can be given to patients who have an allergy to animal insulins 
d) It is more effective in preventing the complications of diabetes than animal insulins

010. Correct statements about crystalline zinc (regular) insulin include all of the following, EXCEPT:

a) It can serve as replacement therapy for juvenile-onset diabetes 
b) It can be administered intravenously 
c) It is a short-acting insulin 
d) It can be administered orally
a) Primary hypogonadism
b) Postmenopausal hormonal therapy
c) Hormonal contraception
d) **For treatment of simple obesity**

**006.** Main complications of estrogens’ therapy include the following:
   a) Postmenopausal uterine bleeding
   b) Breast tenderness
   c) Hyperpigmentation
d) **All of the above**

**007.** Main contraindications of estrogens’ therapy include the following:
   a) Estrogen-dependent neoplasmas such as carcinoma of the endometrium or carcinoma of the breast
   b) Undiagnosed genital bleeding
   c) Liver disease
d) **All of the above**

**008.** Tamoxifen is:
   a) Antiprogestin
   b) Antiandrogen
   c) Antiestrogen
d) **Androgen**

**009.** Progesterone is secreted by:
   a) Ovarian follicles
   b) **Corpus luteum**
c) Granulosa and theca cells
d) **All of the above**

**010.** The major natural progestin is:
   a) Estradiol
   b) Estron
c) **Progesterone**
d) Estriol

**011.** Which of the following statements about progestins is True:
   a) Progesterone is rapidly absorbed following administration by any route
   b) In the liver, progesterone is metabolized to pregnanediol and conjugated with glucuronic acid.
c) Significant amounts of progestins and their metabolites are excreted in the urine
d) **All of the above**

**012.** The normal ovary produces small amount of androgens, including testosterone, androstenedione, and dehydroepiandrosterone. This consideration is:
   a) True
   b) False

**013.** Noncontraceptive clinical uses of progestins are following:
   a) Hormone replacement therapy
   b) Dysmenorrhea
   c) Endometriosis
d) **All of the above**

**014.** Estrogens possess immunomodulator properties, but progestins do immunodepressant ones. Is it TRUE or FALSE?
   a) True
   b) False

**015.** Mifepristone (RU-486) is:
   a) **Antiprogestin**
b) Antiandrogen
c) Antiestrogen
d) Androgen

**016.** Mifepristone (RU-486) is used as a contraceptive and abortifacient. This consideration is:
   a) True
   b) False

**017.** Actions of mifepristone (RU-486) include:
   a) Inhibition of ovulation during the follicular phase by blocking hypothalamic-pituitary progesterone receptors, which suppresses midcycle gonadotropin release
   b) During the luteal phase, inhibition of progesterone action on the uterus, which induces prostaglandin release from the endometrium
c) Termination of pregnancy by facilitating luteolysis, menstruation, uterine motility, softening of the cervix, and detachment of the embryo.
011. Which of the following glucocorticoids is an intermediate-acting drug?
   a) Cortisone
   b) Triamcinolone
   c) Butamethasone
   d) All of the above

012. Which of the following glucocorticoids is a long-acting drug?
   a) Prednisolon
   b) Dexamethasone
   c) Triamcinolone
   d) All of the above

013. Which of the following glucocorticoids have one fluoride atom in its chemical structure?
   a) Prednisolon
   b) Fluocinolone
   c) Triamcinolone
   d) All of the above

014. Which of the following glucocorticoids have two fluoride atoms in its chemical structure?
   a) Prednisolon
   b) Dexamethasone
   c) Fluocinolone
   d) Triamcinolone

015. Which of the following glucocorticoids has no fluoride atom in its chemical structure?
   a) Prednisolon
   b) Dexamethasone
   c) Fluocinolone
   d) Triamcinolone

016. Anti-inflammatory effect of glucocorticoids is caused by
   a) Reducing the prostaglandin and leukotriene which results from inhibition of phospholipase A2
   b) Reducing macrophages migration into the site of inflammation
   c) Decreasing capillary permeability
   d) All of the above

017. Which of the following statements concerning the anti-inflammatory effect of glucocorticoids is TRUE?
   a) Anti-inflammatory effect of glucocorticoids results from inhibition of cyclooxygenase
   b) Anti-inflammatory effect of glucocorticoids result from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis.
   c) Induction of cyclooxygenase II expression which results in reducing amount of an enzyme available to produce prostaglandins
   d) All of the above

018. Immunosuppressive effect of glucocorticoids is caused by:
   a) Reducing concentration of lymphocytes (T and B cells) and inhibiting function of tissue macrophages and other antigen-presenting cells
   b) Suppression of cyclooxygenase II expression which results in reducing amount of an enzyme available to produce prostaglandins
   c) Activation of phospholipase A2 and reducing prostaglandin and leukotriene synthesis.
   d) All of the above

019. Which of the following statements concerning the anti-inflammatory effect of NSAIDs are TRUE?
   a) Anti-inflammatory effect of NSAIDs results from inhibition of cyclooxygenase
   b) Anti-inflammatory effect of NSAIDs results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis.
   c) Anti-inflammatory effect of NSAIDs results from induction of cyclooxygenase II expression which results in reducing the amount of an enzyme available to produce prostaglandins
   d) All of the above

020. Indication of glucocorticoids is:
   a) Chronic (Addison’s disease) and acute adrenocortical insufficiency
   b) Organ transplants (prevention and treatment of rejection – immunosuppression)
   c) Inflammatory conditions of bones and joints (arthritis, bursitis, tenosynovitis).
   d) All of the above

021. Indications of glucocorticoids are following, EXCEPT:
   a) Gastrointestinal diseases (inflammatory bowel disease)
   b) Postmenopausal hormonal therapy
   c) Inflammatory conditions of bones and joints (arthritis, bursitis, tenosynovitis)
   d) Skin diseases (atopic dermatitis, dermatoses, localized neurodermatitis)
c) Aspirin inhibits phospholipase A₂

d) Aspirin inhibits tromboxane A₂ formation

035. Indication for aspirin administration are the following, EXCEPT:
- a) Inflammatory conditions
- b) Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass grafting
- c) Relieving severe visceral pain, e.g. myocardial infarction, cancer pain condition, renal or biliary colic
- d) Reducing elevated body temperature

036. Side effects of aspirin include following:
- a) Gastric upset (intolerance)
- b) Salicylism (vomiting, tinnitus, decreased hearing, and vertigo)
- c) Gastric ulcers and upper gastrointestinal bleeding
- d) All of the above

037. Serious side effects of metamizole (analgin) include the following:
- a) Agranulocytosis, aplastic anemia
- b) Salicylism (vomiting, tinnitus, decreased hearing, and vertigo)
- c) Iatrogenic Cushing’s syndrome (rounding, puffiness, fat deposition and plethora alter the appearance of the face—moon faces)
- d) All of the above

038. Side effects of indometacin include the following:
- a) Abdominal pain, diarrhea, gastrointestinal hemorrhage and pancreatitis
- b) Dizziness, confusion and depression
- c) Trombocytopenia
- d) All of the above

039. Ketoprofen is a propionic acid derivative that inhibits both cyclooxygenase (nonselective) and lipooxygenase. This statement is:
- a) True
- b) False

040. Ketorolac is an NSAID that is promoted for systemic use as an anti-inflammatory, not as an analgesic drug. This statement is:
- a) True
- b) False

041. Which of the following drugs is a 5-lipoxygenase (5-LOG) inhibitor?
- a) Ibuprofen
- b) Zileuton (Zyflo)
- c) Metamizole (Analgin)
- d) Diclofenac

042. Which of the following drugs is a leukotrien D4 receptor (LTD4) blocker?
- a) Ibuprofen
- b) Zileuton (Zyflo)
- c) Zafirlukast (Accolate)
- d) Diclofenac

043. Which of the following drugs is a thromboxane A2 receptor (TXA2) antagonist?
- a) Sulotroban
- b) Zileuton (Zyflo)
- c) Zafirlukast (Accolate)
- d) Diclofenac

PART V Immunotrope & Antiallergic Agents

001. Immune system is the integrated body system of organs, tissues, cells, and cell products that differentiates self from nonself and neutralizes potentially pathogenic organisms or substances. This consideration is:
- a) True
- b) False

002. Antigen is any of various substances, including toxins, bacteria, and the cells of transplanted organs, that when introduced into the body stimulate the production of antibodies. It is also called an allergen or immunogen. This consideration is:
- a) True
- b) False
d) Intranasal

014. Side effect of vitamin D3 is:
   a) Defective bone mineralization
   b) Metastatic calcifications
   c) Hepatic toxicity
   d) Nephrolithiasis

015. Indication of vitamin D3 is:
   a) Hypercalcemia
   b) Paget's disease
   c) Hypophosphatemia
   d) Osteomalacia

016. 25-hydroxyvitamin D3 (calcifediol) is less effective than 1,25-dihydroxyvitamin D3 (calcitriol) in stimulating intestinal calcium transport, so that hypercalcemia is less of a problem with calcifediol. This consideration is:
   a) True
   b) False

017. Route of administration of 25-hydroxyvitamin D3 (calcifediol) is:
   a) Oral
   b) Subcutaneous
   c) Intravenous
   d) Intranasal

018. Indication for 25-hydroxyvitamin D3 (calcifediol) administration is:
   a) Primary hyperparathyroidism
   b) Rickets
   c) Hypercalcemia
   d) Failure of vitamin D formation in skin

019. Side effect of 25-hydroxyvitamin D3 (calcifediol) is:
   a) Hypercalcemia
   b) Pruritus
   c) GI toxicity
   d) All of the above

020. Indications for 1,25-dihydroxyvitamin D3 (calcitriol) administration are the following, EXCEPT:
   a) Hypocalcemia in chronic renal failure
   b) Vitamin D-dependent rickets
   c) Malabsorption of vitamin D from intestine
   d) Elevated skeletal turnover

021. Indication for 1,25-dihydroxyvitamin D3 (calcitriol) administration is:
   a) Vitamin D resistance
   b) Elevated skeletal turnover
   c) Hypercalcemia of malignancy
   d) Hypophosphatemia

022. The following statement refers to 1,25-dihydroxyvitamin D3 (calcitriol):
   a) When rapidity of action is required, 1,25-dihydroxyvitamin D$_3$ (calcitriol), 0.25-1 μg daily, is the vitamin D metabolite of choice, since it is capable of raising serum calcium within 24-48 hours
   b) Calcitriol also raises serum phosphate, though this action is usually not observed early in treatment
   c) Undergoes enterohepatic circulation
   d) All of the above

023. Which of the following statements refers to 1,25-dihydroxyvitamin D3 (calcitriol):
   a) The combined effect of calcitriol and all other vitamin D metabolites and analogs on both calcium and phosphate makes careful monitoring of the level of these minerals especially important to avoid ectopic calcification
   b) Does not undergo enterohepatic circulation
   c) Toxic to osteoclasts
   d) Bioavailability increases with the administered dose

024. Route of administration of 1,25-dihydroxyvitamin D3 (calcitriol) is:
   a) Subcutaneous
   b) Intravenous
   c) Intranasal
   d) Oral

025. Commercially available analogs of 1,25-dihydroxyvitamin D3 (calcitriol) are:
   a) Doxercalciferol (Hectoral)
   b) Paricalcitol (Zemplar)
c) Spironolactone is useful as a diuretic

d) All of the above

005. All of the following statements regarding diuretics are true, EXCEPT:
   a) Carbonic anhydrase inhibition leads to increased reabsorption of NaHCO₃
   b) Loop diuretics decrease Na⁺ reabsorption at the loop of Henle by competing for the Cl⁻ site on the Na⁺/K⁺/2Cl⁻ cotransporter
   c) In general, the potency of a diuretic is determined by where it acts in the renal tubule
   d) Hydrochlorothiazide decreases urinary calcium excretion

006. The drug inhibits the ubiquitous enzyme carbonic anhydrase:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (HydroDiuril)
   d) Spironolactone (Aldactone)

007. The drug acts by competitively blocking NaCl cotransporters in the distal tubule:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (HydroDiuril)
   d) Spironolactone (Aldactone)

008. The drug acts at the proximal tubule:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (HydroDiuril)
   d) Spironolactone (Aldactone)

009. The drug acts by competing with aldosterone for its cytosolic receptors:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (HydroDiuril)
   d) Spironolactone (Aldactone)

010. The drug is a potassium-sparing diuretic that blocks Na⁺-K⁺-2Cl⁻ in the collecting tubules:
   a) Acetazolamide (Diamox)
   b) Amiloride (Midamor)
   c) Furosemide (Lasix)
   d) Hydrochlorothiazide (HydroDiuril)

011. Chronic use of this drug can lead to distal tubular hypertrophy, which may reduce its diuretic effect:
   a) Acetazolamide (Diamox)
   b) Amiloride (Midamor)
   c) Furosemide (Lasix)
   d) Hydrochlorothiazide (HydroDiuril)

012. The drug has a steroid-like structure which is responsible for its anti-androgenic effect:
   a) Amiloride (Midamor)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (HydroDiuril)
   d) Spironolactone (Aldactone)

013. Sustained use of this drug results in increased plasma urate concentrations:
   a) Furosemide (Lasix)
   b) Acetazolamide (Diamox)
   c) Both of the above
   d) Neither of the above

014. The drug can be used to treat glaucoma:
   a) Furosemide (Lasix)
   b) Acetazolamide (Diamox)
   c) Both of the above
   d) Neither of the above

015. The drug can cause ototoxicity:
   a) Furosemide (Lasix)
   b) Acetazolamide (Diamox)
   c) Both of the above
   d) Neither of the above

016. The drug acts only on the lumenal side of renal tubules:
   a) Furosemide (Lasix)
   b) Acetazolamide (Diamox)
d) Carbonic anhydrase inhibitors

029. The drug inhibits sodium and chloride transport in the cortical thick ascending limb and the early distal tubule:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (Hydrodiuril)
   d) Amiloride (Midamor)

030. The drug can cause ototoxicity:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (Hydrodiuril)
   d) Amiloride (Midamor)

031. The drug blocks the sodium/potassium/chloride cotransporter in the thick ascending loop of Henle:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (Hydrodiuril)
   d) Amiloride (Midamor)

032. The drug is one of the most potent diuretics:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (Hydrodiuril)
   d) Amiloride (Midamor)

033. The drug is usually given in combination with a thiazide diuretic:
   a) Acetazolamide (Diamox)
   b) Furosemide (Lasix)
   c) Hydrochlorothiazide (Hydrodiuril)
   d) Amiloride (Midamor)

034. All of the following statements regarding diuretics are true EXCEPT:
   a) Furosemide (Lasix) can increase the likelihood of digitalis toxicity
   b) Chlorthalidone (Hygroton) can decrease the excretion of lithium
   c) Ibuprofen can increase the antihypertensive effect of chlorthalidone
   d) Chlorthalidone has a longer duration of action than furosemide

035. The drug is the least potent diuretic:
   a) Osmotic diuretics
   b) Loop diuretics
   c) Thiazide diuretics
   d) Potassium-sparing diuretics

036. These agents must be given parenterally because they are not absorbed when given orally:
   a) Osmotic diuretics
   b) Loop diuretics
   c) Thiazide diuretics
   d) Potassium-sparing diuretics

037. These drugs may be used in the treatment of recurrent calcium nephrolithiasis:
   a) Osmotic diuretics
   b) Loop diuretics
   c) Thiazide diuretics
   d) Potassium-sparing diuretics

038. Furosemide (Lasix) acts at this nephron site:
   a) Proximal convoluted tubule
   b) Ascending thick limb of the loop of Henle
   c) Distal convoluted tubule
   d) Collecting duct

039. Metolazone (Mykrox) acts at this nephron site:
   a) Proximal convoluted tubule
   b) Ascending thick limb of the loop of Henle
   c) Distal convoluted tubule
   d) Collecting duct

040. Acetazolamide (Diamox) acts at this nephron site:
   a) Proximal convoluted tubule
   b) Ascending thick limb of the loop of Henle
   c) Distal convoluted tubule
   d) Collecting duct
005. Mechanisms of bacterial resistance to anti-microbial 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’s target
   d) Reduced uptake by a microorganism

006. The statement, that some microorganisms can develop alternative metabolic pathways for rendering reactions inhibited by the drug, is:
   a) True
   b) False

007. All of the following drugs are antibiotics, EXCEPT:
   a) Streptomycin
   b) Penicillin
   c) **Co-trimoxazole**
   d) Chloramphenicol

008. Bactericidal effect is:
   a) Inhibition of bacterial cell division
   b) Inhibition of young bacterial cell growth
   c) **Destroying of bacterial cells**
   d) Formation of bacterial L-form

009. Which of the following groups of antibiotics demonstrates a bactericidal effect?
   a) Tetracyclines
   b) Macrolides
   c) **Penicillins**
   d) All of the above

010. Bacteriostatic effect is:
   a) Inhibition of bacterial cell division
   b) Inhibition of young bacterial cells growth
   c) Destroying of bacterial cells
   d) Formation of bacterial L-form

011. Which of the following groups of antibiotics demonstrates a bacteriostatic effect?
   a) Carbapenems
   b) **Macrolides**
   c) Aminoglycosides
   d) Cephalosporins

012. Which of the following antibiotics contains a beta-lactam ring in their chemical structure:
   a) Penicillins
   b) Cephalosporins
   c) Carbapenems and monobactams
   d) **All groups**

013. Tick the drug belonging to antibiotics-macrolides:
   a) Neomycin
   b) Doxycycline
   c) **Erythromycin**
   d) Cefotaxime

014. Tick the drug belonging to antibiotics-carbapenems:
   a) Aztreonam
   b) Amoxacillin
   c) **Imipinem**
   d) Clarithromycin

015. Tick the drug belonging to antibiotics-monobactams:
   a) Ampicillin
   b) Bicillin-5
   c) Aztreonam
   d) Imipinem

016. Tick the drug belongs to antibiotics-cephalosporins:
   a) Streptomycin
   b) **Cefaclor**
   c) Phenoxymethilpenicillin
   d) Erythromycin

017. Tick the drug belonging to lincozamides:
   a) Erythromycin
a) Inhibition of phospholipase C  
b) Inhibition of DNA gyrase  
c) Inhibition of bacterial cell synthesis  
d) Alteration of cell membrane permeability

035. Fluoroquinolones are active against:  
a) Gram negative microorganisms only  
b) Mycoplasmas and Chlamidiae only  
c) Gram positive microorganisms only  
d) Variety of Gram-negative and positive microorganisms, including Mycoplasmas and Chlamidiae

036. Tick the unwanted effects of fluoroquinolones:  
a) Hallucinations  
b) Headache, dizziness, insomnia  
c) Hypertension  
d) Immunetoxicity

037. Tick the indications for fluoroquinolones:  
a) Infections of the urinary tract  
b) Bacterial diarrhea  
c) Infections of the urinary and respiratory tract, bacterial diarrhea  
d) Respiratory tract infections

038. The drug of choice for syphilis treatment is:  
a) Gentamycin  
b) Penicillin  
c) Chloramphenicol  
d) Doxycycline

PART III ANTIPROTOZOAL AND ANTHELMINTIC DRUGS

001. Tick the drug used for malaria chemoprophylaxis and treatment:  
a) Chloroquine  
b) Quinidine  
c) Quinine  
d) Sulfonamides

002. Tick the drug used for amoebiasis treatment:  
a) Chloroquine  
b) Quinidine  
c) Pyrithiamide  
d) Mefloquine

003. Tick the drug used for trichomoniasis treatment:  
a) Metronidazole  
b) Suramin  
c) Pyrimethamine  
d) Tetracycline

004. Tick the drug used for toxoplasmosis treatment:  
a) Chloroquine  
b) Tetracyclind  
c) Suramin  
d) Pyrimethamine

005. Tick the drug used for balantidiasis treatment::  
a) Azitromycin  
b) Tetracycline  
c) Quinine  
d) Trimethoprim

006. Tick the drug used for leishmaniasis treatment:  
a) Pyrimethamine  
b) Albendazole  
c) Sodium stibogluconate  
d) Tinidazole

007. Tick the antimalarial drug belonging to 8-aminoquinoline derivatives:  
a) Doxycycline  
b) Quinidine  
c) Primaquine  
d) Chloroquine
008. All of the following antimalarial drugs are 4-quinoline derivatives, EXCEPT:
   a) Chloroquine
   b) Mefloquine
   c) Primaquine
   d) Amodiaquine

009. Tick the antimalarial drug belonging to pyrimidine derivatives:
   a) Mefloquine
   b) Pyrimethamine
   c) Quinidine
   d) Chloroquine

010. Tick the drug used for trypanosomosis treatment:
   a) Melarsoprol
   b) Metronidazole
   c) Tetracycllin
   d) Quinidine

011. Tick the antimalarial drug having a gametocidal effect:
   a) Mefloquine
   b) Primaquine
   c) Doxycycline
   d) Sulfonamides

012. All of the following antimalarial drugs influence blood schizonts, EXCEPT:
   a) Mefloquine
   b) Chloroquine
   c) Primaquine
   d) Quinidine

013. Tick the antimalarial drug influencing tissue schizonts:
   a) Mefloquine
   b) Chloroquine
   c) Quinidine
   d) Primaquine

014. Tick the group of antibiotics having an antimalarial effect:
   a) Aminoglycosides
   b) Tetracyclins
   c) Carbapenems
   d) Penicillins

015. Tick the amebecide drug for the treatment of an asymptomatic intestinal form of amebiasis:
   a) Chloroquine
   b) Diloxanide
   c) Emetine
   d) Doxycycline

016. Tick the drugs for the treatment of an intestinal form of amebiasis:
   a) Metronidazole and diloxanide
   b) Diloxanide and streptomycin
   c) Diloxanide and lidoquinol
   d) Emetine and metronidazole

017. Tick the drug for the treatment of a hepatic form of amebiasis:
   a) Diloxanide or iodoquinol
   b) Tetracycllin or doxycycline
   c) Metronidazole or emetine
   d) Erythromycin or azitromycin

018. Tick the luminal amebecide drug:
   a) Metronidazole
   b) Emetine
   c) Doxycycline
   d) Diloxanide

019. Tick the drug of choice for the treatment of extraluminal amebiasis:
   a) Iodoquinol
   b) Metronidazole
   c) Diloxanide
   d) Tetracycline

020. Tick the drug, blocking acetylcholine transmission at the myoneural junction of helminthes:
a) Acyclovire  
b) Zalcitabine  
c) Zidovudine  
d) Saquinavir

022. All of the following effects are disadvantages of anticancer drugs, EXCEPT:
   a) Low selectivity to cancer cells  
b) Depression of bone marrow  
c) Depression of angiogenesis  
d) Depression of immune system

023. Rational combination of anticancer drugs is used to:
   a) Provide synergism resulting from the use of anticancer drugs with different mechanisms combination  
b) Provide synergism resulting from the use of anticancer drugs with the same mechanisms combination  
c) Provide stimulation of immune system  
d) Provide stimulation of cell proliferation

024. Tick the anticancer alkylating drug, a derivative of chloroethylamine:
   a) Methotrexate  
b) Cisplatin  
c) Cyclophosphamide  
d) Carmustine

025. Tick the anticancer alkylating drug, a derivative of ethylenimine:
   a) Mercaptopurine  
b) Thiotepa  
c) Chlorambucil  
d) Procarbazine

026. Tick the group of hormonal drugs used for cancer treatment:
   a) Mineralocorticoids and glucocorticoids  
b) Glucocorticoids and gonadal hormones  
c) Gonadal hormones and somatotropin  
d) Insulin

027. Tick the anticancer alkylating drug, a derivative of alkylsulfonate:
   a) Fluorouracil  
b) Carboplatin  
c) Vinblastine  
d) Busulfan

028. Tick the anticancer drug of plant origin:
   a) Dactinomycin  
b) Vincristine  
c) Methotrexate  
d) Procarbazine

029. Action mechanism of alkylating agents is:
   a) Producing carbonium ions altering protein structure  
b) Producing carbonium ions altering DNA structure  
c) Structural antagonism against purine and pyrimidine  
d) Inhibition of DNA-dependent RNA synthesis

030. Tick the anticancer drug, a pyrimidine antagonist:
   a) Fluorouracil  
b) Mercaptopurine  
c) Thioguanine  
d) Methotrexate

031. Methotrexate is:
   a) A purine antagonist  
b) A folic acid antagonist  
c) An antibiotic  
d) An alkylating agent

032. Tick the antibiotic for cancer chemotherapy:
   a) Cytarabine  
b) Doxorubicin  
c) Gentamycin  
d) Etoposide

033. Fluorouracil belongs to:
   a) Antibiotics