Anatomy

1 – Which of the following anatomical structures is NOT present in the posterior mediastinum?

a. Thorasic esophagus
b. Pherenic nerve
c. Azygus vein
d. Thoracic duct

2 – Which of the heart chambers cannot be seen on its anterior surface?

a. Left atrium
b. Right ventricle
c. Left ventricle
d. Right atrium

3 – The artery of which of the following organs directly derives from abdominal aorta?

a. Seminal vesicles
b. Prostate gland
c. Testes
d. Urinary bladder

4 – Which of the following muscles is located in the anterior part of the forearm?

a. Coracobrachialis
b. Triceps brachii
c. Pronator teres
d. Brachioradialis

5 – Which of the following is the most posterior anatomical structure in the pulmonary hilum?

a. Pulmonary nerve
b. Pulmonary artery
c. Pulmonary vein
d. Main bronchus

6 – Vocal cords are placed between which of the following cartilages?

a. Thyroid and Cricoid
b. Cricoid and Arytenoid
c. Thyroid and Arytenoid
d. Thyroid and Epiglottis

7 – Which of the following bones does NOT contribute to the formation of pterion?

a. Ethmoid
b. Parietal
c. Sphenoid
d. Temporal

8 – Medial surface of the lateral part of ethmoid contribute to which of the following cavitiy?

a. Infratemporal
b. Orbital
c. Nasal
d. Lacrimal

9 – Which of following muscles is attached to the corner of lip?

a. Zygomatic minor
b. Levator labi superior
c. Zygomatic major
d. Depressor labi inferior

10 – Contraction of which muscle leads to the extraction of tongue from the mouth?

a. Styloglossus
b. Genioglossus
c. Hyoglossus
d. Palatoglossus

11 – Which of the following anatomical structures pass between middle and inferior pharyngeal constrictors?

a. External laryngeal nerve
b. Inferior laryngeal artery
c. Internal laryngeal nerve
d. Stylopharyngeus muscle

12 – Which of the following nerves supplies the sense of palatine tonsil?

a. Glossopharyngeal
b. Maxillary
c. Mandibular
d. Vagus

13 – In the case of 6th cranial nerve damage, which of the eye movements is disrupted?

a. Adduction
b. Abduction
c. Elevation
d. Depression

14 – Which of the following anatomical structures does NOT belong to carotid triangle contents?

a. Hypoglossal nerve
b. Thyroid gland
c. Ansa cervicalis
d. Internal jugular vein

15 – In the case of mandibular nerve damage, which of the following muscles does NOT become paraplegic?

a. Masseter
b. Tensor tympanic
c. Mylohyoid
d. Levator veli palatini

16 – Through which nerve do parasympathetic fibers entering the otic ganglion pass?

a. Deep petrosal
b. Greater petrosal
c. Lesser petrosal
d. Pterygoid canal

17 – From which part of the maxillary nerve does the posterior superior alveolar nerve originate?

a. Pterygopalatine
b. Cranial
c. Orbital
d. Facial

18 – All of the following structures are superficial to hypoglossus muscle, EXCEPT ..... .

a. Hypoglossal nerve
b. Superficial part of submandibular gland
c. Lingual nerve
d. Submandibular duct

19 – Which of the following is the main artery of the internal ear?

a. Labyrinyhin
b. Anterior tympanic
c. Stylomastoid
d. Deep auricular

20 – All of the following defects are produced by facial nerve injury, EXCEPT ..... .

a. no secretion of parotid gland
b. defect of taste sensation
c. defect of lacrimal gland secretion
d. no secretion of nasal mucosal secretion

21 – Which of the following arteries is related to anterior surface of pons?

a. Vertebral
b. Basilar
c. Middle cerebral
d. Anterior cerebral

22 – To which structures of diencephalon does mamillary body belong?

a. Thalamus
b. Hypothalamus
c. Subthalamus
d. Metathalamus

23 – In which lobe of the cerebral hemisphere is the primary auditory area located?

a. Occipital
b. Frontal
c. Parietal
d. Temporal

24 – In which of the following areas is the motor nucleus of facial nerve placed?

a. Superior half of pons
b. Inferior half of pons
c. Superior half of midbrain
d. Inferior half of midbrain

25 – Which of the following nerves exits from pontine - medulla oblongata fissure?

a. Vagus
b. Glossopharyngeal
c. Facial
d. Troclear

26 – Climbing fibers of cerebellum are related to the which neural tract?

a. Olivocerebellar
b. Dorsal spinocerebellar
c. Ventral spinocerebellar
d. Rubrocerebellar

27 – Which of the following tracts is in the anterior funiculus of the spinal cord?

a. Vestibulospinal
b. Ventral spinocerebellar
c. Rubrospinal
d. Gracilis

28 – Which of the following arteries supply paracentral lobule?

a. Anterior cerebral
b. Posterior cerebral
c. Middle cerebral
d. Anterior choroidal

29 – Which part of the teeth contains loose connective tissue?

a. Enamel
b. Dentin
c. Cementum
d. Pulp

30 – Which of the following bones is woven?

a. Sponge
b. Compact
c. Flat
d. Alveolar

31 – In which of the following parts, do bipolar neurons exist?

a. Anterior horn of spinal cord
b. Olfactory epithelium
c. Middle layer of cerebellar cortex
d. Dorsal root ganglion of spinal cord

32 – Which cells are present in the peripheral part of dental pulp?

a. Osteoblast
b. Ameloblast
c. Odontoblast
d. Fibroblast

33 – Which gland is responsible for the synthesis of the majority of saliva?

a. Submandibular
b. Sublingual
c. Accessory glands
d. Parotid

34 – Sharpies fibers of periodontal ligaments are fromed by which types of fibers?

a. Elastic
b. Reticular
c. Oxytallan
d. Collagen

35 – Helicotrema is located between …… ?

a. Middle and inner ear
b. Scala vestibuli and tympani
c. Spiral limbus and Scala vestibuli
d. Scala media and tympani

36 – Which neuroglia of the nervous tissue has mesenchymal origin?

a. Oligidendrocyte
b. Astrocyte
c. Ependyme
d. Microglia

37 – Which type of cartilages forms the annulus fibrosus of the intervertebral discs?

a. Elastic
b. Fibrous
c. Articular
d. Hyaline

38 – Which cytoplasmic organelles lacks membrane?

a. Proteasome
b. Endosome
c. Proxysome
d. Lysosome

39 – Which of the following does NOT happen during the first meiotic division?

a. Separation of sister chromatid
b. Joining of homologous chromosomes
c. Crossing over
d. Chiasma formation

40 – What is the embryonic origin of dentin?

a. Neural ectoderm
b. Neural crest
c. Surface ectoderm
d. Somatic mesoderm

41 – In which of the central nervous system defects, are the brain ventricles affected?

a. Meningohydroencephalocele
b. Cranial Meningocele
c. Meningoencephalocele
d. Spina bifida occulta

42 – Joining of which embryonic structures forms the intermaxillary segment?

a. Medial nasal prominences
b. Medial to lateral nasal prominences
c. Lateral nasal to maxillary prominences
d. Maxillary to mandibular prominences

Clinical biochemistry

43 – Which of the following vitamins has an antioxidant role in the cell membrane?

a. A
b. E
c. B6
d. D

44 – Which of the following is the key enzyme for fatty acid synthesis?

a. Acetyl CoA carboxylase
b. Acetyl transferase
c. Malonyl transferase
d. β-ketoacyl Reductase

45 – If the ratio of lactate to lactic acid is 100/1 in cells of a severely working muscle, then the pH will be …..... (pKa=3.86)

a. 1.03
b. 1.86
c. 4.86
d. 5.86

46 – Lysine transforms into alanine due to hemoglobin mutation. Normally, lysine has a role in 2, 3 bisphosphoglycerate (BPG) attachment. In this case, the affinity of the mutated hemoglobin to attach to BPG will ....., and its affinity to attach to oxygen will ..... .

a. increase-decrease
b. increase-increase
c. decrease-increase
d. decrease-decrease

47 – In a patient admitted to the emergency room due to poisoning by an inhibitory compound, the administration of ample enzyme substrate improves his condition. The inhibitor is ..... .

a. reversible and competitive
b. reversible and noncompetitive
c. reversible and uncompetitive
d. irreversible

48 – Which of the following pathways is very active in the liver of a patient with uncontrolled type I diabetes?

a. Ketogenesis
b. Glycogenesis
c. Fatty acid synthesis
d. Glycolysis

49 – Which of the following is the key enzyme in pentose phosphate pathway?

a. Transaldolase
b. Glucose 6-phosphate dehydrogenase
c. Ribose 5-phosphate ketoisomerase
d. Transketolase

50 – Which enzyme is responsible for the joining of Okazaki fragments to each other?

a. RNA polymerase
b. RNA primase
c. DNA polymerase
d. DNA ligase

51 – All of the following compounds can be converted to glucose <u>EXCEPT</u> ..... .

a. Pyruvate
b. Acetyl CoA
c. Oxaloacetic acid
d. Lactate

52 – Which pair of amino acids is more frequent in histones?

a. Arginine-lysine
b. Aspartate-glutamate
c. Phenyalanine-tyrosine
d. Serine-glycine

53 – Which respiratory complex is inhibited by cyanide in electron transport chain?

a. I
b. II
c. III
d. IV

54 – What is the role of ACAT (Acyl CoA Cholesterol Acyl Transferase)?

a. Esterification of cholesterol inside cells
b. Esterification of cholesterol in blood circulation
c. Separation of fatty acid from cholesterol
d. Cholesterol transfer between lipoproteins

55 – The conversion of glucose 6-phosaphte to free glucose occurs in ..... .

a. glycolysis and Krebs cycle
b. gluconeogenesis and glycogenolysis in muscle
c. glycogenesis and glycogenolysis
d. gluconeogenesis and glycogenolysis in liver

56 – Which amino acid has bufferic effect in hemoglobin structure?

a. Tryptophan
b. Arginine
c. Methionine
d. Histidine

57 – All of the following compounds are phospholipids EXCEPT ..... .

a. sphingomyelin
b. plasmalogen
c. galactosyl ceramide
d. lecithin

58 – Introns are present in the ..... .

a. tRNA
b. mRNA
c. hnRNA
d. snRNA

59 – Which enzyme is inhibitied in eicosanoid synthesis pathway by aspirin to reduce inflammation?

a. Thromboxane synthase
b. Phospholipase A2
c. Cyclooxygenase
d. Lipooxygenase

60 – Membrane fluidity is related to the level of ..... .

a. unsaturated fatty acid and free cholesterol
b. protein and esterified cholesterol
c. peripheral protein and triglyceride
d. free cholesterol and triacylglycerol

61 – Which enzyme is activated by the increase in blood glucagon?

a. Phospholipase C
b. Protein kinase C
c. Adenylate cyclase
d. Guanylate cyclase

62 – Electron transfer to ..... is inhibited in a patient with a mutation in one of the subunits of complex IV electron transport chain.

a. ubiquinone
b. oxygen
c. NAD^+
d. cytochrome C

63 – In a diabetic patient, which type of transport of glucose into muscle cells is impaired?

a. Sodium-dependent active transport
b. Facilitated diffusion by GLUT4
c. ATP-dependent active transport
d. Antiport with bicarbonate anion

64 – Genetic defect in ornithin transcarbamoylase (OTC) activity in urea cycle leads to the deficiency of which of the following amino acids?

a. Arginine
b. Lysine
c. Histidine
d. Proline

65 – Which fatty acid is essential for human?

a. Palmitic
b. α-Linolenic
c. Stearic
d. Butyric

66 – Which of the following vitamins and which mechanism are required to make osteocalcin?

a. A - omega oxidation
b. E - beta oxidation
c. K - gamma carboxylation
d. D - alpha oxidation

67 – Telomerase is a ..... .

a. DNA-dependent DNA polymerase
b. DNA-dependent RNA polymerase
c. RNA-dependent RNA polymerase
d. RNA-dependent DNA polymerase

Medical Physics

68 – In which type of Manifested Strabismus (Heterotropia), the optic axes of the eyes are deviated externally?

a. Isotropia
b. Exotropia
c. Hypertropia
d. Cyclotropia

69 – For a non-focused transducer in ultrasound medical imaging of a specific tissue, the depth of near field increases with the ..... of the diameter, and ..... of the ultrasound wavelength.

a. increase - increase
b. increase - decrease
c. decrease - increase
d. decrease - decrease

70 – In the effective energy range, which is commonly used in radiological imaging techniques, with the ..... chosen kVp, the differential absorption of the image will be ..... .

a. higher - higher
b. higher - lower
c. lower - higher
d. lower- lower

71 – If the physical and biological half lives of a radioisotope are 6 and 4 hours, respectively, how long is its effective half life?

a. 25min
b. 120min
c. 144min
d. 300min

72 – In which of the embryonic/fetal stages, does ionizing radiation more probably cause the development of congenital and functional abnormalities, respectively?

a. Preimplantation - Organogenesis
b. Organogenesis - Preimplantation
c. Fetal growth - Organogenesis
d. Organogenesis - Fetal growth

Clinical Psychology

73 – According to Piaget, egocentrism is a characteristic of which of the following cognitive development stages?

a. Sensorymotor stage
b. Formal operational stage
c. Pre-operational stage
d. Concrete operational stage

74 – On the basis of which of the following theories are the Rorschach and TAT tests developed?

a. Behavioristic
b. Psychoanalytic
c. Cognitive
d. Humanistic

75 – Which of the following is the most important and basic defense mechanism in Freud's psychoanalytic theory?

a. Projection
b. Denial
c. Introjection
d. Repression

76 – Ali, a 24-years-old individual with unstable mood and emotion, is experiencing acute episodes of depression, anxiety and frequent rage reactions with no apparent reasons. During these periods, he tends to display impulsive behaviors such as self-injurious behaviors. What is the likely diagnosis of this case?

a. Bipolar disorder
b. Schizophrenia
c. Borderline personality disorder
d. Dissociative identity disorder

77 – How many pieces of information can the working memory retain audiovisually?

a. 7 ± 2
b. 9 ± 2
c. 5 ± 3
d. 9 ± 3

78 – Which of the following neurotransmitters has an important role in the motivational aspect of rewards?

a. Serotonine
b. Noradrenaline
c. GABA
d. Dopamine

79 – What is the cessation or elimination of an unpleasant stimulus after the occurrence of a desired behavior called?

a. Positive reinforcement
b. Positive punishmentt
c. Negative reinforcement
d. Negative punishment

80 – According to which of the following approaches, the main driving force in human is the self-actualizing tendency?

a. Behavioristic approach
b. Humanistic approach
c. Psychoanalytic approach
d. Cognitive approach

81 – Desensitization is a technique in which of the following therapeutic methods?

a. Behavioral
b. Psychodynamic
c. Humanistic
d. Cognitive

82 – According to Holmes and Rahe's rating scale of life events, which of the following events has the highest numerical value in causing stress?

a. Imprisonment
b. Death of spouse
c. Death of a close family member
d. Divorce

Parasitology

83 – Which human malaria causes higher mortality rate?

a. *vivax*
b. *falciparum*
c. *ovale*
d. *malariae*

84 – Which of the following has more chance of transmission from mother to fetus?

a. *Entamoeba*
b. *Plasmodium*
c. *Leishmania*
d. *Toxoplasma*

85 – Which parasite can be directly transmitted from an infected individual to a healthy one?

a. Oxyuris
b. Ascaris
c. Hook worms
d. Taenia

Mycology

86 – All of the following micro-organisms are capable of invading oral cavity EXCEPT ..... .

a. *Geotrichum*
b. *Rhinosporidium*
c. *Actinomyces*
d. *Malassezia*

87 – In which of the following fungal diseases, the ulcerative, painful and purulent lesions in oral cavity are seen?

a. Sporotrichosis
b. Chromoblastomycosis
c. Dermatophytosis
d. Pityriasis versicolor

88 – Which of the following fungal elements can be seen in direct examination of oral candidiasis lesions?

a. Pseudohyphae-Macroconidia- Blastoconidia
b. True hyphae- Camidoconidia- Blastoconidia
c. True hyphae- Pseudohyphae - Clamidoconidia
d. Pseudohyphae- True hyphae- Blastoconidia

Bacteriology

89 – Which population of bacteria is dominant in babies with breastfeeding?

a. *Enterobacteriacea*
b. *Fusobacterium*
c. *Bacteriodes*
d. *Lactobacilli*

90 – Which site is the best for colonization of *Bacteriodes fragilis* in oral cavity?

a. Periodontal pockets
b. Surface of tongue
c. Supragingival plaques
d. Surface of buccal mucosa

91 – All of the following *Streptococci* are in viridans group, EXCEPT ..... .

a. *pneumoniae*
b. *sanguis*
c. *agalactiae*
d. *mutans*

92 – Which structure is specific for gram negative bacteria?

a. Peptidoglycan
b. Lipid A
c. Capsule
d. Pili

93 – All statements for *Chlamydia* are correct, EXCEPT ..... .

a. They include both DNA and RNA.
b. Their cell wall is similar to gram negative.
c. They have the ability to produce ATP.
d. They obligate intracelluar living.

94 – Bacterial isolation of *Bordetella pertusis* in culture media will increase at ..... .

a. incubation period
b. cattarrhal period
c. paroxysmal period
d. convalescent period

95 – Which type of diarrhea causing *Escherichia coli* uses "Intimin" as adherence factor to attach the gut cells?

a. EAEC (Enteroaggregative *E.coli*)
b. EPEC (Enteropathogenic *E.coli*)
c. EIEC (Enteroinvasive *E.coli*)
d. ETEC (Enterotoxigenic *E.coli*)

96 – Which of the following *Campylocbacter* is the etiologic agent of systemic infection?

a. *jejuni*
b. *coli*
c. *fetus*
d. *upsaliensis*

97 – What is the mechanism of antibacterial effect of rifampin?

a. Binding to DNA-dependent RNA polymerase and inhibiting RNA synthesis
b. Inhibition of the helicase activity
c. Inhibition of topoisomerase type II
d. Inhibition of synthesis of Okazaki fragments

98 – What is the target site of daptomycin?

a. Plasma membrane
b. Cell wall
c. Protein synthesis
d. Nucleic acid synthesis

99 – Which of the following organisms is the most probable agent of bacterial meningitis in infants in their first month of life?

a. *Streptococcus agalactiae*
b. *Streptococcus pneumoniae*
c. *Streptococcus pyogenes*
d. *Enterococcus faecalis*

100 – Which of the following tests has the highest sensitivity and specificity in diagnosing tuberculosis?

a. Intradermal tuberculin test
b. Gamma interferon releasing assay
c. T cell proliferation assay
d. Anti-TB Antibody assay

101 – The Shwartzman reaction occurs following the release of large amount of ..... in to the blood circulation.

a. peptidoglycan
b. lipopolysaccharide
c. lysozyme
d. lipoteichoic acid

102 – Which of the following is the virulence factor for *Haemophilus influenzae* type b?

a. Exotoxin
b. Capsular protein
c. Polyribitol phosphate capsule
d. Lipopolysaccharide of cell wall

103 – Which of the following antibiotics belongs to the second line anti-Tuberculosis therapy?

a. Isoniazid
b. Ethambutol
c. Rifampin
d. Kanamycin

104 – At what stage of syphilis are the granulomatous lesions (Gumma) observed?

a. Primary
b. Secondary
c. Tertiary
d. Early latency

105 – Which of the following choices is the correct definition for disbiosis?

a. High level of resistance to antibiotics
b. Immunosuppression by microorganism
c. Deterioration of normal flora
d. Inflammation of colon

106 – Which species of *Neisseria* is related to perihepatitis of Fitz-Hugh-Curtis Syndrome?

a. *sicca*
b. *gonorrhoeae*
c. *meningitidis*
d. *lactamica*

107 – Which of the following virulence factors is related to hemolytic uremic syndrome (HUS)?

a. Lipopolysaccharides
b. Edema factor
c. Invasin
d. Shiga toxin

Virology

108 – The replication of ..... is in cytoplasm.

a. Rubella
b. HIV
c. HDV
d. Influenza

109 – HEV is transmitted through ..... .

a. blood
b. oral-fecal
c. sexual contact
d. respiratory

110 – Which virus can cause gingivostomatitis?

a. HPV
b. HJV
c. HSV-1
d. HCV

111 – Which option below is correct about Hendra virus?

a. Genome is single-stranded with positive polarity.
b. It belongs to *paramyxoviridae*.
c. It only causes disease in human.
d. It causes cancer.

112 – The prsence of ..... indicates active HBV replication.

a. HBe Ag
b. Anti HBe
c. Anti HBc
d. HBc Ag

Pathology

113 – What is the mechanism of protein degradation in atrophy?

a. P450 enzymatic activity
b. ATP-dependent sodium pump
c. Production of ROS
d. Ubiquitin-proteasome pathway

114 – What is the result of influx of cytosolic calcium in cellular damage?

a. Activation of phospholipase
b. Inhibition of caspase
c. Increase of ATP
d. Antiapoptotic effect

115 – What is the type and mechanism of ascitic fluid in liver cirrhosis?

a. Transudate , decrease of hydrostatic pressure
b. Exudate , decrease of osmotic pressure
c. Transudate , decrease of osmotic pressure
d. Exudate , increase of hydrostatic pressure

116 – What is "margination"?

a. Accumulation of platelets in small vessel lining
b. Extravasation of red blood cells
c. Accumulation of leukocytes in periphery of vessel
d. Fibrin aggregation in small vessel

117 – Which one is a potent chemotactic agent?

a. Leukotriene B4
b. Thromboxane A2
c. Histamine
d. Prostaglandin I2

118 – Which of the following is important in tissue repair and fibrosis?

a. TNF-α
b. IL-1
c. TGF-ß
d. IL-17

119 – A 5-years-old child was presented with encephalopathy, anemia, basophilic stippling of RBCs and radiodense deposits in epiphysis. Which metal exposure should be considered for the patients' poisoning?

a. Iron
b. Arsenic
c. Lead
d. Cadmium

120 – A 55-years-old diabetic patient was presented with meningitis. Microscopic evaluation of meningeal vessels show fungal hyphae with irregular width and near right angle branching. Which fungal infection should be considered?

a. Cryptococcus
b. Aspergillus
c. Candida
d. Mucor

121 – Which of the following is considered as the effect of cocaine on neurotransmission?

a. Dopamine reuptake inhibition
b. Dopamine reuptake increase
c. Epinephrine production increase
d. Epinephrine production inhibition

122 – Inherited deficiency of which coagulation factor leads to Glanzmann thrombasthenia ?

a. VWF
b. GpIb
c. GpIIb-IIIa
d. Protein S

123 – What is the *Epstein-Barr* virus receptor on the B lymphocytes?

a. CD21
b. CD4
c. CD8
d. CD20

124 – A 35-years-old female patient was presented with generalized bullae on her skin. The diagnosis was pemphigus vulgaris after biopsy. Which type of hypersensitivity reaction is the mechanism of injury?

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

125 – which tumor is associated with *H.pylori* ?

a. Colon cancer
b. MALT lymphoma
c. Pancreatic cancer
d. Hepatocellular carcinoma

126 – Genetic heterogenicity is ..... .

a. a single gene mutation which leads to many phenotypic effects
b. the mutation at several genetic loci which produce the same trait
c. mostly due to gene deletion
d. another name for pleiotropy

127 – Which syndrome is most probable for a 25-years-old tall male patient with reduced facial hair and testicular atrophy?

a. Klinefelter
b. Fragile X
c. Angelman
d. Prader-Willi

Physiology

128 – Which of the following membrane transport processes is the only means whereby most large molecules can enter cells?

a. Pinocytosis
b. Phagocytosis
c. Passive diffusion
d. Carrier-mediated transport

129 – Which of the following shows the similarity between smooth and cardiac muscles?

a. Ability to contract in the absence of an action potential
b. Dependence of muscle contraction on Ca^{2+}
c. Role of myosin light chain kinase in muscle contraction
d. Presence of a Transverse tubules network

130 – If the activities of myosin kinase and myosin phosphatase enzymes increase intensely in the smooth muscle, which of the following will be correct regarding the contraction of the muscle?

a. Cessation of contraction cycle at rest
b. High frequency of cross-bridge cycling
c. Severe reduction in energy consumption
d. Prolonged tonic contraction

131 – EMG findings in a patient show that one of the skeletal muscle nerves has severe damage. Which of the following signs will be observed in the muscle of this patient?

a. Hyperplasia
b. Atrophy
c. Prolonged fatigue
d. Remodeling

132 – Which of the following is involved in the termination of smooth muscle contraction?

a. Inhibition of myosin phosphatase
b. Phosphorylation of myosin kinase
c. Dephosphorylation of myosin light chain
d. Efflux of Ca^{2+} across plasma membrane

133 – Which kind of anemia can be caused by a deficiency of vitamin B12?

a. Aplastic
b. Pernicious
c. Microcytic hypochromic
d. Sickle cell

134 – Production of which of the following blood cells is stimulated by a hormone secreted by the kidneys?

a. Lymphocytes
b. Monocytes
c. Erythrocytes
d. Neutrophils

135 – In the respiratory system, which of the following limits the duration of inspiration and increases the respiratory rate?

a. Apneustic center
b. Dorsal respiratory group
c. Nucleus of the tractus solitarius
d. Pneumotaxic center

136 – What is the maximum amount of air that a person can expel from the lungs after the first filling of the lungs to their maximum extent and then expiring to the maximum extent?

a. The tidal volume
b. The inspiratory reserve volume
c. The vital capacity
d. The total long capacity

137 – What is the alveolar ventilation rate if tidal volume is 500 ml, anatomical dead space is 150 ml and the respiratory rate is 12 per minute (ml/min)?

a. 4200
b. 3200
c. 7800
d. 1300

138 – By which means impulses ordinarily can pass from the atria into the ventricles?

a. Internodal pathways
b. Atrioventricular valves
c. His bundle
d. Purkinje fibers

139 – In which of the following structures the depolarization phase is slower?

a. Atrial muscle fiber
b. Ventricular muscle fiber
c. Purkinje fibers
d. SA node

140 – Which one is correct about the control of local blood flow?

a. Arterial oxygen saturation is inversely related to blood flow
b. In cyanide poisoning, the blood flow through the tissues decreases markedly
c. It occurs just in capillaries but not in the large arteries
d. It occurs equally in all tissues

141 – Which of the following occurs by occluding the two common carotid?

a. An increase in the femoral blood pressure
b. A decrease in the heart rate
c. A decrease in the vessels sympathetic activity
d. An increase in the activity of nucleus tractus solitarius of the medulla

142 – Decrease in which of the following could result in an increase in lymph flow?

a. Interstitial fluid colloid osmotic pressure
b. Capillary pressure
c. Plasma colloid osmotic pressure
d. Lymphatic pump activity

143 – Which one is correct about pharyngeal stage of swallowing?

a. It is principally a reflex act
b. It is principally voluntary
c. It interrupts inhalation
d. It interrupts exhalation

144 – Which of the following does not initiate the enterogastric inhibitory reflexes?

a. Distention of the duodenum
b. Irritation of the duodenal mucosa
c. Acidity of the duodenal chyme
d. Hypo-osmolality of the chyme

145 – In acromegaly, the blood concentration in which of the following decreases?

a. Amino acids
b. Glucose
c. Free fatty acids
d. Ketone bodies

146 – Which of the following happens in the insulin dependent diabetes?

a. A decrease in plasma free fatty acids
b. A decrease in Gluconeogenesis in liver
c. An increase in proteins catabolism
d. An increase in the blood pH

147 – Which of the following pairs of hormones are similar in structure?

a. Thyroxine, ACTH
b. Insulin, Aldosterone
c. Cortisole, ADH
d. Calcitonin, Glucagon

148 – Which part of the nephron is always water permeable?

a. Distal convoluted tubule
b. Thin descending loop of henle
c. Thick ascending loop of henle
d. Cortical collecting duct

149 – Where is the macula densa located in nephron and to which ionic changes is it sensitive?

a. Distal convoluted tubule-Na^+
b. Thin ascending loop of henle-Na^+ and K^+
c. Thick ascending loop of henle-Na^+
d. Distal convoluted tubule-Na^+ and K^+

150 – In a patient with steatorrhea, production of which blood coagulation factor will be impaired?

a. V
b. IX
c. III
d. XII

151 – Where does in nephron the reabsorption of glucose and amino acids occur?

a. The Loop of henle
b. The distal tubule
c. The proximal tubule
d. The cortical collecting duct

152 – Which of the following best describes the functional role of the lateral cerebellar hemisphere?

a. Controls and coordinates movements of the axial muscles as well as the shoulder and hip
b. Controls movements that involve distal limb musculature
c. Functions with the cerebral cortex to plan movements
d. Stimulates motor neurons through its connections to the spinal cord

153 – Which component of the basal ganglia plays the major role in the control of cognitive motor pattern sequences?

a. Globus pallidus
b. Caudate nucleus
c. Putamen
d. Subthalamic nucleus

154 – Which brain stem structure plays a major role in determining the direction where a sound originates?

a. Cochlear nuclei
b. Inferior colliculus
c. Superior olivary nucleus
d. Trapezoid Body

155 – Stimulation of which brain area can modulate the sensation of pain?

a. Superior olivary complex
b. Cerebellum
c. Periaquaductal gray
d. Amygdala

Genetics

156 – A child is born with a cleft lip and cleft palate. This birth defect is most likely due to ..... .

a. a disrupted developmental defect related to amniotic bands
b. a chromosome disorder such as trisomy 13
c. triploidy abnormalities
d. deformation due to external pressure

157 – Which of the following is a typical mechanism for converting a proto-oncogene to an oncogene and tumorgenesis?

a. Amplification of the proto-oncogene
b. A chromosomal translocation resulting in the down-regulation of the proto-oncogene
c. Loss of heterozigocity in tumor suppressor genes
d. A point mutation and deactivation of the proto-oncogene

158 – Which type of genetic mutation is the cause of sickle-cell disease?

a. Deletion
b. Duplication
c. Expansion of trinucleotic repeats
d. Point mutation

159 – Which of the following disorders is exclusively caused by paternal meiotic error?

a. Trisomy 18
b. Trisomy 13
c. 47,XXY
d. 47,XYY

160 – Which of the following is an appropriate explanation of ANTICIPATION in some genetic diseases?

a. Affliction with disease occurs at old ages.
b. Disease becomes more severe in each generation than the previous generation.
c. It is observed only in sex-linked diseases.
d. This is also called gene penetrance.

161 – The percentage of individuals with a specific genotype that represents the relevant phenotype is ..... .

a. penetrance
b. expressivity
c. pleiotropy
d. dominancy

162 – Which of the following diseases is caused by an abnormal increase in the specific three nucleotide repeats?

a. Klinefelter syndrome
b. Rett syndrome
c. Fragile X syndrome
d. Cystic fibrosis

163 – In adult polycystic kidney disease, the severity of symptoms varies among affected individuals in a family. What does this difference indicate?

a. Reduced penetrance
b. Co-dominance
c. Pleiotropy
d. Variable expressivity

164 – Which of the following methods is used to screen prenatal genetic diseases?

a. Ultrasound
b. Placental biopsy
c. Amniosynthesis
d. Karyotyping

165 – Which of the following is an obligate carrier in an X-linked recessive trait?

a. A girl with two affected brothers
b. A girl with an affected father
c. A girl with an affected brother and an affected maternal uncle
d. A girl with two affected maternal uncles

Immunology

166 – Which of the following cell is the major final effector cell in humoral immune response and antibody production?

a. Memory B lymphocyte
b. Activated B lymphocyte
c. Plasma cell
d. Folicular T helper cell

167 – Which of the following antibodies are mainly responsible for the anaphylactic shock produced in a 18-years-old teenager sting by a bee?

a. IgD
b. IgE
c. IgA
d. IgM

168 – IFN-γ production and macrophages activation is the function of ..... .

a. T-regulatory cell
b. T helper-1 cell
c. T helper-2 cell
d. T helper-17 cell

169 – Which component of the complement system has the inhibitory role?

a. D Factor
b. H Factor
c. P Factor
d. B Factor

170 – Which one of cells is the major mediator between the innate and acquired immunity?

a. Neutrophil
b. Dendritic cell
c. CTL
d. NK cell

171 – Which is the major cytokine produced by T helper2 cells ?

a. IFN-γ
b. IL-17
c. IL-13
d. IL-2

172 – Which of the following molecules is a MHC class 1?

a. HLA-D
b. HLA-DR
c. HLA-DP
d. HLA-B

173 – Which part of lymph node contains germinal center?

a. Medullary sinus
b. T cell zone
c. B cell zone
d. Capsular sinus

174 – What is the first antibody molecule produced in the body in response to the antigen independent of T helper cell?

a. IgD
b. IgM
c. IgG
d. IgE

175 – Which of the following cells are concidered as the antigen entrance gate for mucosal lymphoid tissues?

a. Goblet cells
b. Absorbent Epithelial cells
c. M cells
d. IEL cells

176 – What is the most important cytokine for T helper1 cells differentiation?

a. IL-18
b. IFN-γ
c. IFN-β
d. IL-12

177 – What is the most important mechanism of human immune defense against a pathogenic virus?

a. Neutralization of virus
b. Inhibiting virus replication
c. Lysis of the infected cells
d. Virus opsonization

178 – IgE production against allergens occurs in which of the following stages?

a. After inflammatory mediator secretion
b. The first contact and interaction with allergen
c. After allergic manifestation
d. Activation of Mast cells

179 – Which of the following cells are responsible for direct detection of transplantation antigens by the recipient immune system?

a. Donor DC + Recipient T cell
b. Recipient DC + Donor T cell
c. Recipient DC + Donor Tissue cell
d. Donor DC + Donor Tissue cell

180 – Which of the following genes causes poly-endocrinopathic autoimmune dysregulation?

a. FAS
b. IL-10
c. AIRE
d. FoxP3

Islamic Revolution of Iran and Islamic Insights

181 – Which of the following factors prepares the ground for the emergence and development of other factors and circumstances leading to a revolution?

a. Leadership and mobilizing structures
b. Expansion of revolutionary spirit
c. Emergence of a new and alternative ideology
d. Extreme dissatisfaction with existing circumstances

182 – Which goal was the US government pursuing as a mediator during the nationalization of oil industry?

a. Defeating England as a rival and replacing it
b. Reconciliation between Iran and UK and partnership with both
c. Expanding its own influence and gaining concession from Iran oil industry
d. Supporting Dr. Mosaddegh and lifting oil sanctions

183 – Which of the following events made monarchy supporters, who emphasized campaigning within the Constitution framework, join opposition groups against Pahlavi regime and the monarchy?

a. The event on Shahrivar, 17th in Tehran
b. The event on Dey, 19th in Qom
c. The event on Khordad, 15th in Varamin
d. The event on Muharram, in Tabriz

184 – Which of the following was the most important crisis of the Pahlavi era?

a. Public political participation
b. Freedom of political parties
c. Legitimacy of governing regime
d. Dependence of the governments on Shah himself

185 – Which of the following was the most important manifestation of public political campaign in the Islamic revolution?

a. Peaceful demonstrations
b. Armed conflict with the regime
c. The assassination of regime's authorities
d. Demonstration, assassination and armed conflict

186 – All of the statements about the relationship between reason and religion are correct, <u>EXCEPT</u> ..... .

a. Reason confirms religion.
b. Religion confirms reason.
c. Reason and religion are God's arguments.
d. The argumentation of religion precedes that of reason.

187 – Which of God's attributes requires sending prophets for guiding people and creating the Hereafter for rewarding or punishing His servants?

a. Wisdom
b. Justice
c. Lordship
d. Divinity

188 – The Quranic verse "Then He balanced it and blew in it from His Soul" refers to ..... dimension.

a. spiritual
b. corporeal
c. material and immaterial
d. both good and evil

189 – Which of the following arguments is more appropriate in debating with those who deny God and Hereafter?

a. Reason
b. Nature
c. Rationality
d. Justice

190 – Which of the following statements is <u>INCORRECT</u> regarding the relationship between faith and insight?

a. Faith is based on knowledge and insight.
b. Faith is the requirement of knowledge and insight.
c. Religious faith is not confirmed with absolute knowledge.
d. Religious faith is not in contradiction with reason.

Oral and Social Health

191 – Which of the following indices involves the three dimensions of longevity, knowledge, and income?

a. Life standards
b. Quality of life
c. Life status
d. Human development

192 – In a cross-sectional study, which of the following indices can be estimated by subtracting the probable duration of hospitalization and functional disability from life expectancy?

a. Sullivan index
b. Disease burden
c. Health-adjusted life expectancy
d. Disability rate

193 – Which of the following items corresponds with blocking the transmission of infection through eliminating the pathogenic factor?

a. Elimination of the disease
b. Eradication of the disease
c. Fighting against the disease
d. Management of the disease

194 – To attribute "carrier state" to an infected patient, all of the following must be observed, EXCEPT ..... .

a. lack of signs and symptoms of the disease
b. state of being chronic
c. existence of an infectious agent in the body
d. contagiousness of the infection

195 – Which of the following indices is more applicable to healthcare management and planning?

a. Incidence rate
b. Prevalence rate
c. Fatality rate
d. Specific mortality rate

196 – All of the follwoing are true about subclinical cases EXCEPT ..... .

a. pathogenic agent is not transmitted by these cases
b. sub-clinical condition leads to acquired immunity in affected individuals
c. diagnosis of these cases is possible only through para-clinical tests
d. these cases have an important role in increasing herd immunity in a society

197 – Measures which can stop the disease in its latency stage and prevent its incidence are called ..... prevention.

a. initial
b. primary
c. secondary
d. tertiary

198 – Which of the following indices is indicative of the severity of a disease?

a. Disability-adjusted lost years
b. Mortality rate
c. Case fatality rate
d. Disability-adjusted life expectancy

199 – All of the following are true about nosocomial infections, EXCEPT ..... .

a. the patient is without infection on admission.
b. the infection signs and symptoms of the disease may appear after the patient is discharged.
c. the infection originates from hospital equipment and services.
d. the patient was infected during the incubation period of the disease on admission.

200 – The clinical examination of the breast and fastening the seat belt in a vehicle are considered as ..... prevention, respectively.

a. secondary - primary
b. secondary- secondary
c. primary -secondary
d. primary-primary

Good luck

کلید نهایی علوم پایه دندانپزشکی-شهریور ۹۹-**انگلیسی**

۱	ب	۵۱	ب	۱۰۱	ب	۱۵۱	ج
۲	الف	۵۲	الف	۱۰۲	ج	۱۵۲	ج
۳	ج	۵۳	د	۱۰۳	د	۱۵۳	ب
۴	ج	۵۴	الف	۱۰۴	ج	۱۵۴	ج
۵	د	۵۵	د	۱۰۵	ج	۱۵۵	ج
۶	ج	۵۶	د	۱۰۶	ب	۱۵۶	ب
۷	الف	۵۷	ج	۱۰۷	د	۱۵۷	الف
۸	ج	۵۸	ج	۱۰۸	الف	۱۵۸	د
۹	ج	۵۹	ج	۱۰۹	ب	۱۵۹	د
۱۰	ب	۶۰	الف	۱۱۰	ج	۱۶۰	ب
۱۱	ج	۶۱	ج	۱۱۱	ب	۱۶۱	الف
۱۲	الف	۶۲	ب	۱۱۲	الف	۱۶۲	ج
۱۳	ب	۶۳	ب	۱۱۳	د	۱۶۳	د
۱۴	ب	۶۴	الف	۱۱۴	الف	۱۶۴	الف
۱۵	د	۶۵	ب	۱۱۵	ج	۱۶۵	ب
۱۶	ج	۶۶	ج	۱۱۶	ج	۱۶۶	ج
۱۷	الف	۶۷	د	۱۱۷	الف	۱۶۷	ب
۱۸	ب	۶۸	ب	۱۱۸	ج	۱۶۸	ب
۱۹	الف	۶۹	ب	۱۱۹	ج	۱۶۹	ب
۲۰	الف	۷۰	ب و ج	۱۲۰	د	۱۷۰	ب
۲۱	ب	۷۱	ج	۱۲۱	الف	۱۷۱	ج
۲۲	ب	۷۲	د	۱۲۲	ج	۱۷۲	د
۲۳	د	۷۳	ج	۱۲۳	الف	۱۷۳	ج
۲۴	ب	۷۴	ب	۱۲۴	ب	۱۷۴	ب
۲۵	ج	۷۵	د	۱۲۵	ب	۱۷۵	ج
۲۶	الف	۷۶	ج	۱۲۶	ب	۱۷۶	د
۲۷	الف	۷۷	الف	۱۲۷	الف	۱۷۷	الف
۲۸	الف	۷۸	د	۱۲۸	الف	۱۷۸	ب
۲۹	د	۷۹	ج	۱۲۹	ب	۱۷۹	الف
۳۰	د	۸۰	ب	۱۳۰	ب	۱۸۰	ج
۳۱	ب	۸۱	الف	۱۳۱	ب	۱۸۱	د
۳۲	ج	۸۲	ب	۱۳۲	ج	۱۸۲	ج
۳۳	الف	۸۳	ب	۱۳۳	ب	۱۸۳	الف
۳۴	د	۸۴	د	۱۳۴	ج	۱۸۴	ج
۳۵	ب	۸۵	الف	۱۳۵	د	۱۸۵	الف
۳۶	د	۸۶	د	۱۳۶	ج	۱۸۶	د
۳۷	ب	۸۷	الف	۱۳۷	الف	۱۸۷	الف
۳۸	الف	۸۸	د	۱۳۸	ج	۱۸۸	ج
۳۹	الف	۸۹	د	۱۳۹	د	۱۸۹	حذف
۴۰	ب	۹۰	الف	۱۴۰	الف	۱۹۰	ب
۴۱	الف	۹۱	ج	۱۴۱	الف	۱۹۱	د
۴۲	الف	۹۲	ب	۱۴۲	ج	۱۹۲	الف
۴۳	ب	۹۳	ج	۱۴۳	الف	۱۹۳	ب
۴۴	الف	۹۴	ب	۱۴۴	د	۱۹۴	ب
۴۵	د	۹۵	ب	۱۴۵	الف	۱۹۵	ب
۴۶	ج	۹۶	ج	۱۴۶	ج	۱۹۶	الف
۴۷	الف	۹۷	الف	۱۴۷	د	۱۹۷	ج
۴۸	الف	۹۸	الف	۱۴۸	ب	۱۹۸	ج
۴۹	ب	۹۹	الف	۱۴۹	الف	۱۹۹	د
۵۰	د	۱۰۰	ب	۱۵۰	ب	۲۰۰	الف