

Anatomy

- 1) **All of the followings are related with superior surface of urinary bladder, except:**
- A) Uterus
 - B) Sigmoid colon
 - C) Ileum
 - D) Seminal vesicle
- 2) **The sensation of nasopharynx is..... nerve.**
- A) Maxillary
 - B) Ophthalmic
 - C) Vagus
 - D) Glossopharyngeal
- 3) **Which of the cardiac chambers, forms most of the sternocostal surface of the heart and lies posterior to the sternum?**
- A) Right ventricle
 - B) Left ventricle
 - C) Left atrium
 - D) Right atrium
- 4) **Which of the following artery is branch of the first part of maxillary artery?**
- A) Sphenopalatine
 - B) Middle meningeal
 - C) Greater palatine
 - D) Pterygoid canal
- 5) **All of the following phrases about the spinal cord are true, except:**
- A) The cauda equina is composed of the roots of some spinal nerves.
 - B) Thoracic nerves emerge below their numeral vertebra.
 - C) The first neuronal cell body of all general sensory pathways is placed in the dorsal root ganglion.
 - D) Rubrospinal tract passes through the ventral column.
- 6) **Which one of the following muscle opens the mouth?**
- A) Medial pterygoid
 - B) Lateral pterygoid
 - C) Masseter
 - D) Temporalis
- 7) **Pectoralis major is attached to all of the following bones, except:**
- A) Scapula
 - B) Sternum
 - C) Second costal cartilage
 - D) Clavicle

- 8) Which artery does supply the visual cortex, mainly?**
- A) Posterior cerebral
 - B) Anterior communicating
 - C) Posterior communicating
 - D) Anterior cerebral
- 9) Which of the following viscerae is retroperitoneal?**
- A) Transverse colon
 - B) Spleen
 - C) Head of pancreas
 - D) Stomach
- 10) Which of the following anatomical component is not in carotid triangle?**
- A) Hypoglossal nerve
 - B) Vagus nerve
 - C) Common carotid artery
 - D) External jugular vein
- 11) Which muscle of tongue is not innervated by hypoglossal nerve?**
- A) Palatoglossus
 - B) Styloglossus
 - C) Hyoglossus
 - D) genioglossus
- 12) Lateral upper lip is formed by:**
- A) Lateral nasal prominence
 - B) Maxillary prominence
 - C) Medial nasal prominence
 - D) Frontonasal prominence
- 13) The infratemporal fossa is bounded anteriorly by the:**
- A) Sphenoid
 - B) Mandible
 - C) Maxilla
 - D) Lateral pterygoid

14) Which of the following arteries mainly supplied the palatine tonsil?

- A) Facial
- B) Maxillary
- C) Descending palatine
- D) Ascending palatine

15) Efferent ductules of testis is formed by:

- A) Paraesonephric duct
- B) Mesonephric duct
- C) Mesonephric tubules
- D) Testis cords

16) Which nucleus is related to the archeo-cerebellum?

- A) Emboliformis
- B) Fastigi
- C) Dentate
- D) Globus

17) Intra embryonic coelom appears in:

- A) Lateral plate mesoderm
- B) Intermediate mesoderm
- C) Extraembryonic mesoderm
- D) Paraxial mesoderm

18) Which of the following foramen open into pterygopalatine fossa?

- A) Spinosum
- B) Ovale
- C) Lacerum
- D) Rotundum

19) Which sense is related to the lateral lemniscus?

- A) Hearing
- B) Vision
- C) Olfactory
- D) Equilibrium

20) Degeneration of corpus luteum in the early months of pregnancy is prevented by:

- A) Estrogen
- B) HCG
- C) Progesterone
- D) Lutein

21) Which of the following sinuses doesn't open to the middle meatus of nasal cavity?

- A) Middle ethmoidal
- B) Maxillary
- C) Frontal
- D) Sphenoid

22) Which muscle contraction abducted vocal cord?

- A) Cricothyroid
- B) Posterior cricoarytenoid
- C) Later Cricoarytenoid
- D) Aryepiglottic

23) The preganglionic fibers to the otic ganglion reach it through nerve

- A) Lesser petrossal
- B) Greater petrossal
- C) Deep petrosal
- D) Pterygoid canal

24) Where is the proper site of mitral valve auscultation?

- A) Right side of sternal angle
- B) Left 5th intercostal space
- C) Left second intercostal space
- D) Right 4th costal cartilage

25) Which of the following cells is secreted surfactant in bronchiols?

- A) Pneumocyte II
- B) Alveolar macrophage
- C) Clara
- D) Pneumocyte I

26) Which of the following structures is periodontium?

- A) Cusp
- B) Cementum
- C) Pulpe
- D) Dentin

27) Which of the following cells is secreted predentine?

- A) Odontoblast
- B) Fibroblast
- C) Cementoblast
- D) Ameloblast

28) Which of the following cells is a multipotential cells?

- A) Fibrocyte
- B) Chondrocyte
- C) Pericyte
- D) Mastocyte

29) Which one of the cells of the nervous system is originated from bone marrow?

- A) Oligodendrocyte
- B) Microglia
- C) Satellite
- D) Schwann

30) Where is the place of the second neuron of the fine touch pathway?

- A) Cerebellum
- B) Thalamus
- C) Medulla
- D) Spinal cord

31) All of the following tracts are seen in the midbrain, except:

- A) Corticospinal
- B) Lateral Lemniscus
- C) Medial lemniscus
- D) Vestibulospinal

32) Where is the location of tracheal bifurcation?

- A) In the posterior mediastinum
- B) At the level of the sternal angle
- C) At the level of the cricoid cartilage of larynx
- D) At the level of the base of the neck region

33) Which branch of abdominal aorta is single?

- A) Lumbar artery
- B) Inferior mesenteric artery
- C) Renal artery
- D) Ovarian artery

34) Which cell junction connects osteocytes process to each other, in bone canaliculus?

- A) Gap junction
- B) Desmosome
- C) Tight junction
- D) Zona adherence

35) Which of the following structure is avascular?

- A) Periodontal ligament
- B) Dental pulp
- C) Cementum
- D) Alveolar bone

36) Which of the following tissue contains intermediate filament of vimentin as a character?

- A) Connective
- B) Muscular
- C) Nervous
- D) Epithelial

37) Which of following is source of ameloblast?

- A) Mesoderm
- B) Endoderm
- C) Ectoderm
- D) Neural crest

38) Which of the following nerve relates to second pharyngeal arch?

- A) Facial
- B) Glossopharyngeal
- C) Vagus
- D) Trigeminal

39) Which of the following nucleus extends in all length of the spinal cord?

- A) Central motor nucleus
- B) Clark nucleus
- C) Intermediomedial nucleus
- D) Gracilis nucleus

40) Which of following nucleus is in upper half of the pons?

- A) Superior olivary nucleus
- B) Ambiguous nucleus
- C) Solitary nucleus
- D) Motor nucleus of trigeminal nerve

41) Which of the following muscle is innervated by mandibular nerve?

- A) Levator veli palatini
- B) Tensor veli palatini
- C) Palatopharyngeus
- D) Palatoglossus

42) Which of the following is branch of thyrocervical trunk?

- A) Suprascapular artery
- B) Superior intercostal artery
- C) Dorsal scapular artery
- D) Internal thoracic artery

Biochemistry

43) What change in pH and 2,3-bisphosphoglycerate would increase oxygen release from hemoglobin?

- A) Decrease - Increase
- B) Increase - Decrease
- C) Decrease - Decrease
- D) Increase - Increase

44) All of the complexes in electron transport chain act as proton pump, except:

- A) II
- B) IV
- C) III
- D) I

- 45) In eukaryotes, which process occurs simultaneously with elongation phase?**
- A) 5' capping
 - B) 3' capping
 - C) translation
 - D) mRNA splicing
- 46) Which of the following amino acids in myoglobin is likely to be located within the interior of the molecule?**
- A) Lysine
 - B) Aspartate
 - C) Arginine
 - D) Valine
- 47) Which glycogen storage disease is caused by the deficiency of muscle phosphorylase?**
- A) Von Gierke
 - B) Cori
 - C) McArdel
 - D) Pompe
- 48) All of the following compounds are required for heme biosynthesis, except:**
- A) Glycine
 - B) Pyridoxal phosphate
 - C) Alanine
 - D) Succinyl CoA
- 49) Increased serum alanine concentration during fasting state is due to;**
- A) Breakdown of muscle proteins
 - B) Leakage of amino acids into plasma
 - C) Decreased utilization of non-essential amino acids
 - D) Impaired renal function
- 50) The two nitrogen atoms in "urea" molecule are derived from?**
- A) Argininosuccinate and ammonia
 - B) Glutamate and glycine
 - C) Alanine and aspartate
 - D) Aspartate and ammonia

51) Which enzyme catalyzes the conversion of testosterone to estradiol?

- A) 5- α - reductase
- B) 17- hydroxylase
- C) 11- β - hydroxylase
- D) Aromatase

52) Increased skin pigmentation (Hyperpigmentation) occurs in which of the following conditions?

- A) Increased TSH
- B) Increased ACTH
- C) Decreased ACTH
- D) Decreased TSH

53) Which of the following processes in lipid metabolism, is defective in a patient with glucose 6- phosphate dehydrogenase deficiency?

- A) Production of malonyl CoA from acetyl CoA
- B) The activity of fatty acid synthase
- C) Production of acyl CoA from free fatty acids
- D) ω -oxidation of fatty acids

54) Which of the following enzymes catalyses the committed step of malonyl CoA production during fatty acid synthesis?

- A) Acyl CoA lyase
- B) Acyl CoA carboxylase
- C) Fatty acid synthase
- D) Beta thiolase

55) All of the following procedures are observed during the processing of tRNA, except:

- A) Cleavage of introns
- B) Cleavage of the tandem transcripts of tRNAs
- C) Methylation of nucleotides
- D) Addition of a nucleotide sequence at the 3' end of the RNA

- 56) Which factor of translation is responsible for the separation of large and small ribosomal subunits?**
- A) eIF4F
 - B) eIF1
 - C) eIF2A
 - D) eIF3
- 57) What is the net charge of the following peptide at physiologic pH?**
Lys-Ala-Gly-Glu-Asp
- A) +1
 - B) -2
 - C) -1
 - D) Zero
- 58) In a patient, a tumor near the pituitary stalk has destroyed the connection between anterior pituitary and hypothalamus. The secretion of all of the following hormones are defective, except:**
- A) T4
 - B) ACTH
 - C) Estradiol
 - D) Oxytocin
- 59) Inhibition of which DNA polymerase, involved in replication, causes the primers to remain in the newly synthesized DNA?**
- A) II
 - B) α
 - C) δ
 - D) I
- 60) How does phosphoglycerate kinase lead to ATP production during carbohydrate metabolism?**
- A) Substrate level phosphorylation
 - B) Phosphorolysis
 - C) Oxidative decarboxylation
 - D) Oxidative phosphorylation
- 61) Which of the following Structures contain sialic acid?**
- A) Lecithin
 - B) Ganglioside
 - C) Cephalin
 - D) Galactocerebroside

62) Which of the following vitamins are stored in the body?

- A) B6
- B) B2
- C) B12
- D) B1

63) What is the mechanism of Allopurinol in the treatment of Gout?

- A) Activation of Urate Oxidase enzyme
- B) Inhibition of Phosphoribosyl Transferase
- C) Activation of Hypoxanthine - Guanine Phospho Ribosyl Transferase (HGPRT) enzyme
- D) Inhibition of Xanthine Oxidase enzyme

64) Which of the following enzymes are the key enzyme in gluconeogenesis pathway?

- A) Aldolase
- B) Triosephosphate Isomerase
- C) Glycerinaldehyde 3 Phosphate Dehydrogenase
- D) Phosphoenol Pyruvate Carboxy Kinase

65) If within 20 minutes, 0.1 millilitre of patient's serum could convert 2 micromol of lactate to pyruvate, how many international units (U) of LDH enzyme is present in each litre of serum?

- A) 1
- B) 100
- C) 1000
- D) 10

66) Which of the following molecules and hormones activate acetyl CoA carboxylase?

- A) Malonyl CoA and adrenaline
- B) Malonate and glucagon
- C) Citrate and insulin
- D) Citrate and cortisol

67) Which of the following phospholipids is specifically present in the inner membrane of mitochondria?

- A) Plasmalogen
- B) Phosphatidyl ethanol amine
- C) Phosphatidyl choline
- D) Cardiolipin

Medical Physics

- 68) There are three requirements for diagnosis medical ultrasound: generation of an ultrasound beam, and processing of the signal for the display.**
- A) transmission of the signal
 - B) photoelectric effect of echo
 - C) reception of the returning echo
 - D) thermoelectronic effect of echo
- 69) Which one destroy the contrast in X-ray imaging?**
- A) X-ray scatter (Is)
 - B) Increase in X-ray time (sec)
 - C) Decrease in X-ray energy (Kv) in diagnosis energy range
 - D) Increase in X-ray intensity (MA)
- 70) Chromosome aberration is due to radiation exposure in which of the phase of cell cycle?**
- A) Anaphase
 - B) Mitosis
 - C) Interphase
 - D) Prophase
- 71) If the half life of radionuclide A is twice of radionuclide B, decay constant (λ) of radionuclide A is of radionuclide B?**
- A) Half
 - B) Equal
 - C) Twice
 - D) $0.693/2$
- 72) High atomic number materials the x-ray and make...density on radiography film.**
- A) absorb , bright
 - B) absorb , dark
 - C) transmit , dark
 - D) transmit , bright

Psychology

- 73) A child cries for his mother's attention when she returns to his room after having left the room for a while, but when the mother picks him up, he furiously tries to push her back. Which attachment position is he in?**
- A) Securely attached
 - B) Insecurely attached – ambivalent
 - C) Disorganized
 - D) Insecurely attached - avoidant
- 74) In Freud's psychoanalysis theory, during the Oedipal phase, in what way do boys try to overcome their castration anxiety?**
- A) Identifying with father
 - B) Identifying with mother
 - C) Using defense mechanism of undoing
 - D) Regressing to a previous psychosexual stage
- 75) A patient who suffers from agoraphobia is encouraged to stay in a small room for few hours. What is this technique called?**
- A) Systematic desensitization
 - B) Negative reinforcement
 - C) Flooding
 - D) Counterconditioning
- 76) An individual who sees himself in the mirror and thinks that someone is staring at him, what problem is he or she suffering from?**
- A) Visual problem
 - B) Prosopagnosia
 - C) Persecutory delusion
 - D) Illusion
- 77) Which one of the following statements is true regarding the continuous and partial reinforcement schedules?**
- A) In continuous or partial reinforcement schedules, response extinction depends on the nature of learner behavior and cannot be predicted.
 - B) In both reinforcement schedule, the rate of the extinction of the learned behavior is almost the same.
 - C) In continuous reinforcement schedule, extinction of a learned behavior happens slower than in partial reinforcement schedule.
 - D) In partial reinforcement schedule, extinction of a learned behavior happens slower than in continuous reinforcement schedule.

78) Damage to which part of the brain interferes with long-term memory?

- A) Occipital lobe
- B) Medial-temporal lobe
- C) Parietal lobe
- D) Frontal lobe

79) Which theoretical perspective, instead of relying on motives, emotions or unconscious conflicts, emphasizes on conscious mental processes in explaining certain psychiatric disorders?

- A) Behavioral perspective
- B) Biological perspective
- C) Cognitive perspective
- D) Humanistic perspective

80) An individual buys an item and then realizes it is defective. He tries to return the item, but the seller refuses to accept it. In response to the seller's refusal, the individual keeps repeating, "This is defective and I want to return it" firmly until the seller agrees to take the item back. What type of behavior the individual has exhibited?

- A) Obsessive- compulsive behavior
- B) Assertive behavior
- C) Aggressive behavior
- D) Domineering behavior

81) Which characteristics can be stressful in events?

- A) Amount of stress, shakefulness, internal oppositions
- B) Uncontrolable, solving oppositions, vulnerable, narcissism
- C) personnal limitations, dangerous situation and opportunities, prediction
- D) Uncontrolable, predictable, optimum capacity

82) Childs tendency to stay close to special people and feeling more safe in the presence of these people is defined as:

- A) Attachment
- B) Modelling
- C) Role playing
- D) Fondness

Parasitology

83) Which of the following helminths is more prevalent in children?

- A) *Hymenolepis nana*
- B) *Fasciola hepatica*
- C) Hookworm
- D) *Taenia saginata*

84) The vegetative form of which protozoan parasite may be seen in human sputum?

- A) *Trichomonas hominis*
- B) *Entamoeba gingivalis*
- C) *Endolimax nana*
- D) *Dientamoeba fragilis*

85) Which one is the principle agent of malignant tertian malaria?

- A) *P. ovale*
- B) *P. vivax*
- C) *P. falciparum*
- D) *P. malariae*

Mycology

86) Trush is a type of.....

- A) Aspergillosis
- B) Candidiasis
- C) Cryptococcosis
- D) Mycetoma

87) The most predominant form of sporotrichosis is

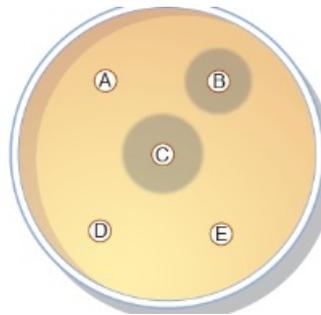
- A) Fixed cutaneous
- B) Lympho cutaneous
- C) Extra cutaneous
- D) Muco cutaneous

88) In which disease intertrigo infection is common?

- A) Mucormycosis
- B) Candidiasis
- C) Sporotrichosis
- D) Mycetoma

Bacteriology

89) The results of agar disc diffusion test are shown in figure. What is the correct interpretation of these results?



- A) The isolate is sensitive to antibiotics C and B
- B) The isolate is sensitive to antibiotics A and B
- C) The isolate is resistant to antibiotics B and D
- D) The isolate is resistant to antibiotics E and D

90) Actinomycosis is transmitted by which of the following routes?

- A) By aerosols
- B) Foodborne
- C) Faecal-oral transmission
- D) Endogenously

91) Which disease is not caused by exotoxin?

- A) Typhoid
- B) Tetani
- C) Diphtheria
- D) Botulism

- 92) Where do you expect to find non – pathogenic *Treponema* in human body?
- A) Stomach
 - B) Intestine
 - C) Gingiva
 - D) Skin
- 93) According to the infectious disease control guidelines of the Centers for Disease Control and Prevention (CDC), all the following bacteria are the cause of hospital infection except:
- A) *Acinetobacter baumani*
 - B) *Mycoplasma pneumoniae*
 - C) *Staphylococcus aureus*
 - D) *Klebsiella pneumoniae*
- 94) The soil is not the natural habitat for which of the following medical important microorganisms?
- A) *Chlamydia trachomatis*
 - B) *Clostridium tetani*
 - C) *Bacillus anthracis*
 - D) *Mycobacterium avium*
- 95) From patients with hepatomegaly, splenomegaly and sickle cell anemia, gram negative negative bacilli, negative oxidase, non-motile and fermenting glucose and negative lactose is isolated which of the following organisms is the most common cause of septicemia in patients with sickle cell anemia?
- A) *Salmonella typhi*
 - B) *Streptococcus agalactiae*
 - C) *Streptococcus pneumoniae*
 - D) *Shigella sonnei*
- 96) Which of the following tests remains positive after successful treatment of syphilis?
- A) RPR
 - B) VDRL
 - C) Colmer
 - D) TPHA
- 97) A man 35 years old was generally healthy until his tooth was removed by an oral surgeon. The surgical area has severe pain, but what was more alarming was the appearance of eruptions through the skin beneath the area of the jaw. The exudate draining through the skin eruptions was cultured aerobically, but the results were negative. Which of the following is etiologic agent of this patient's condition?
- A) *Pasturella multocida*
 - B) *Nocardia asteroides*
 - C) *Actinomyces israelii*
 - D) *Streptococcus pneumoniae*

- 98) Which of the following bacteria is agent of blood transfusion related bacteremia that store in refrigerator?**
- A) *Serratia marcescens*
 - B) *Salmonella choleraesuis*
 - C) *Yersinia enterocolitica*
 - D) *Proteus mirabilis*
- 99) Which antimicrobial drugs inhibit protein synthesis in microorganisms?**
- A) Carbapenems
 - B) Quinolones
 - C) Monobactams
 - D) Aminoglycosides
- 100) The disease is due to gram negative bacilli infection with indicated tachycardia, septicemia, increased IL-1, stimulation of lymphocyte mitosis, and Schwartzmann's reaction. Which bacterial structure is the cause of the above symptoms?**
- A) Lipoprotein
 - B) Lipopolysaccharide
 - C) Flagella
 - D) Capsule
- 101) Which one of the following antimicrobial agents would be most appropriate to treat bloodstream infection due to methicillin-resistant *Staphylococcus aureus* (MRSA)?**
- A) Cefotaxime
 - B) Gentamicin
 - C) Clarithromycin
 - D) Teicoplanin
- 102) Which of the following bacteria is the cause of typhoid?**
- A) *Shigella flexneri*
 - B) *Salmonella paratyphi*
 - C) *Shigella sonnei*
 - D) *Salmonella typhi*
- 103) Which of the following *Haemophilus* species is the cause of chancroid or soft chancre?**
- A) *aegyptius*
 - B) *afrophylus*
 - C) *ducreyi*
 - D) *parainfluenzae*

104) Which of the following *Clostridium* is the cause of "Pig - bel" disease?

- A) *difficile*
- B) *perfringens*
- C) *tetani*
- D) *botulinum*

105) Which of the following antibiotics inhibit the synthesis of peptidoglycan?

- A) Vancomycin
- B) Erythromycin
- C) Streptomycin
- D) ciprofloxacin

106) Which of the following is the specific media culture for *Mycobacterium*?

- A) Bordae Janghue
- B) Tinsdale
- C) Lowenstein - Jensen
- D) Eosin methylen blue

107) Which of the following bacteria is the cause of "vesicular fever"?

- A) *Mycoplasma hominis*
- B) *Rickettsia conori*
- C) *Chlamydia psittaci*
- D) *Trepanema pallidum*

Virology

108) Which of the following viruses can cause congenital malformations?

- A) Mumps virus
- B) Rhinovirus
- C) Cytomegalovirus (CMV)
- D) Rabies virus

109) Which of the following is usually the first serologic marker detected after primary hepatitis B virus infection?

- A) HBe-Ab
- B) HBcAg
- C) HBsAg
- D) anti-HBc

110) Which assay is used to detect copies of viral genomes?

- A) Polymerase Chain Reaction (PCR)
- B) Immunofluorescence assay (IFA)
- C) Hemagglutination assay (HA)
- D) Enzyme-linked Immunosorbent Assay (ELISA)

111) The mode of transmission of which virus is different than the other viruses?

- A) MERS-CoV Coronavirus
- B) Hepatitis C Virus
- C) Human Immunodeficiency virus (HIV)
- D) Human Papilloma virus

112) Which of the following anti-viral drug inhibits viral reverse transcriptase and is active against both Human Immunodeficiency virus (HIV) and hepatitis B virus (HBV)?

- A) Acyclovir
- B) Amantadine
- C) Lamivudine
- D) Ribavirin

Pathology

113) Which of the followings is the major cytokine in acute inflammation?

- A) INF- γ
- B) IL-17
- C) TNF
- D) IL-12

114) In histologic exam of bronchial biopsy in a heavy smoker, usual respiratory type epithelium is replaced by stratified squamous epithelium. Which of the followings is correct about this type of adaptation?

- A) Forming of new pathway after primary differentiation
- B) Transdifferentiation of differentiated cells
- C) Phenotypic change of mature epithelial cells
- D) Reprogramming of stem cells to another pathway

115) Which of the following cells, synthesizes Adenosin diphosphatase (ADPase)?

- A) B lymphocyte
- B) Endothelial
- C) Monocyte
- D) Platelet

116) Defect in which of the following mechanisms, is the cause of Chronic Granulomatous Disease(CGD)?

- A) TLR Signaling Pathway
- B) Microbicidal activity
- C) Leukocyte Adhesion Deficiency
- D) Phagolysosome Activity

117) By which of the following mechanisms, self reactive lymphocytes are destroyed in development of immune system?

- A) Necrosis
- B) Apoptosis
- C) Necroptosis
- D) Atrophy

- 118) Initiation of intracellular calcification occurs in which organelle of dead cells?**
- A) Mitochondria
 - B) Nucleus
 - C) Golgi apparatus
 - D) Lysosome
- 119) Which of the followings is considered as a permanent tissue?**
- A) Kidney
 - B) Cardiac muscle
 - C) Liver
 - D) Urinary epithelium
- 120) In histologic exam of uterine cervix biopsy, the squamous epithelium has lost its normal maturation and replaced by disordered scrambling dark basal appearing cells through the entire thickness. Mitoses are seen in superficial layers. Basement membrane is intact. Which of the followings is the diagnosis?**
- A) Anaplasia
 - B) Dysplasia
 - C) Metaplasia
 - D) Hyperplasia
- 121) Which of the following forms of secondary hypercoagulability states is associated with increase in platelet aggregation and decreased release of PGI-2?**
- A) Homocystinuria
 - B) Advanced age
 - C) Increase in Protein C
 - D) Oral contraceptive
- 122) In microscopic evaluation of gastric tissue, islets of Langerhans and exocrine glands of pancreas are seen in the submucosa. What is the diagnosis?**
- A) Hamartoma
 - B) Tissue metaplasia
 - C) Pancreatic metastasis
 - D) Choriostoma
- 123) Which of the followings, leads to malignancy by induction of pyrimidine dimer?**
- A) *β-naphthylamine*
 - B) *Ultraviolet radiation*
 - C) *Hepatitis C Virus*
 - D) *Helicobacter pylori*

- 124) Which of the following necrosis is more seen in diseases associated with immunological mediators?**
- A) Liquefactive necrosis
 - B) Fibrinoid necrosis
 - C) Fat necrosis
 - D) Caseous necrosis
- 125) Which of the following growth factors caused collagen production, fibronectin, proteoglycan and inhibition of collagen degeneration?**
- A) VEGF
 - B) PDGF
 - C) EGF
 - D) TGF-Beta
- 126) Which of the following disorder caused initial activated clotting cascade?**
- A) Cancer
 - B) Tissue injury
 - C) Protein C deficiency
 - D) DIC
- 127) Mesoderm malignant tumors originated from renal tubular epithelium is called:**
- A) Kidney carcinoma sarcoma
 - B) Kidney sarcoma
 - C) Kidney carcinoma
 - D) Atypical adenoma

Physiology

- 128) A newly developed local anesthetic block's Na^+ channels in nerves, Which of the following effects on the membrane potential would be expected to produce?**
- A) Increase the Na^+ equilibrium potential
 - B) Shorten the absolute refractory period
 - C) Reduction in membrane excitability
 - D) Decrease the Na^+ equilibrium potential
- 129) Assuming complete dissociation of all solutes, which of the following solutions would be hyperosmotic to 1 mM NaCl?**
- A) 1.5 mM glucose
 - B) 1 mM CaCl_2
 - C) 1 mM KCl
 - D) 1 mM glucose

- 130) In contraction of gastrointestinal smooth muscle, which of the following events occurs after binding of Ca^{2+} to calmodulin?**
- A) Depolarization of the sarcolemmal membrane
 - B) Increased myosin light chain kinase activity
 - C) Ca^{2+} induced Ca^{2+} release
 - D) Opening of ligand-gated Ca^{2+} channels
- 131) Which option can be included in the horizontal axis of the cardiac function curve, instead of atrial pressure?**
- A) Cardiac output
 - B) Ventricular contractility
 - C) End diastolic volume
 - D) Stroke volume
- 132) Which of the intervals in the electrocardiogram increases with a sharp increase in the activity of the parasympathetic nervous system?**
- A) QT interval
 - B) PR interval
 - C) QRS duration
 - D) RR interval
- 133) The tendency for edema to occur will be increased by?**
- A) Muscular activity
 - B) Increased venous pressure
 - C) Increased plasma protein concentration
 - D) Arteriolar constriction
- 134) Which agent is released or secreted after a hemorrhage and causes an increase in renal Na^+ reabsorption?**
- A) Angiotensin I
 - B) Atrial natriuretic peptide
 - C) Aldosterone
 - D) Antidiuretic hormone (ADH)
- 135) Which of the plexus situated between the longitudinal and circular layers of the muscularis?**
- A) Triangular plexus
 - B) Aurbach's plexus
 - C) Laimer's plexus
 - D) Meissner's plexus

136) Secretin hormone affects on the of pancreas and causes secretion.

- A) Duct cells - digestive enzymes
- B) Duct cells - HCO_3^- ions
- C) Acini cells - Digestive enzymes
- D) Acini cells - HCO_3^- ions

137) In which condition the lung edema would produced

- A) Decrease of the left atrium pressure
- B) Decrease of the right atrium pressure
- C) Stenosis in the mitral valve
- D) Increase of the right atrium pressure

138) Which one of the following sentences is correct?

- A) Oxygen transport from respiratory barrier to the capillaries do via facilitated diffusion
- B) Adrenergic receptor activity in the respiratory air way lead to reduction of air way resistance
- C) We can directly measure the Total Lung Capacity (TLC) by spirometer
- D) Surfactant push the air away from the big alveolus to the small ones

139) To produce a concentrated urine, which one is required?

- A) All of them
- B) Presence of high amounts of ADH
- C) Presence of adequate amounts of aldosterone
- D) A reduction in GFR

140) In a person with urinary tract obstruction, elevation of which pressure causes stop of filtration?

- A) Glomerular capillaries oncotic pressure
- B) Bowman's capsule oncotic pressure
- C) Bowman's capsule hydrostatic pressure
- D) Glomerular capillaries hydrostatic pressure

141) Transducin is stimulated by and causes of enzyme.

- A) metarhodopsin II - excitation - phosphodiesterase
- B) metarhodopsin II - inhibition - adenylyl cyclase-
- C) rhodopsin - inhibition - phosphodiesterase
- D) cGMP - excitation - adenylyl cyclase

142) What is the ability to keep track of many bits of information simultaneously and to cause recall of this information instantaneously as it is needed for subsequent thoughts?

- A) Working memory
- B) Skill memory
- C) Memory sensitization
- D) Intermediate long-term memory

143) Which of the choices decrease neuronal excitability?

- A) Theophylline
- B) Glutamate
- C) GABA
- D) Caffeine

144) Which of the following effects is correct for insulin?

- A) Stimulating gluconeogenesis
- B) Increasing plasma amino acid concentration
- C) Enhancing potassium entry into cell
- D) Converting glycogen to glucose

145) Which of the following effects is a symptom of hypothyroidism?

- A) Elevated systolic pressure
- B) Muscle tremor
- C) Decreased libido
- D) Diarrhea

146) Capacitation of the spermatozoa that activate the sperm for the final processes of fertilization cause:

- A) Release of large quantities of prostaglandins and fibrinogen
- B) Increased permeability to calcium ions in the membrane of the sperm
- C) Secretion of nutrient fluid contains hormones and enzymes
- D) Differentiation and elongation of spermatids

147) A blood clot transported by the blood stream is a (an)

- A) thrombus
- B) thrombin clot
- C) platelet plug
- D) embolus

148) The absolute (effective) refractory period in a neuron.....

- A) Is due to high negative polarity inside of neuron
- B) Take places during depolarization and initial part of repolarization
- C) Take places during depolarization phase only
- D) Take places during repolariaztion phase only

149) Duration of which part of a normal electrocardiogram is longer?

- A) PQ segment
- B) P wave
- C) QRS complex
- D) T wave

150) In which following organ, the hydrostatic pressure of vessel is more in standing subject?

- A) Kidney
- B) Heart
- C) Brain
- D) Lung

151) Increase in which following factor leads to increase the lung compliance?

- A) Pulmonary recoil pressure
- B) Pleural negative pressure
- C) Surfactant
- D) Elastin and collagen fibers

152) In which following status, the reabsorption will decrease in peritubular capillaries?

- A) Increasing the renal interstitial fluid pressure.
- B) Increasing the filtration fraction.
- C) Increasing the resistance of afferent arterioles.
- D) Increasing the resistance of efferent arterioles.

153) Secretion of bile by the liver.....

- A) Has rich amount of soluble protein and lipid.
- B) Is important for absorption of proteins and carbohydrates only.
- C) Is independent from amount of enterohepatic circulation of bile salts.
- D) Is increased by effect of secretin on bile ducts.

154) Which following sentence IS NOT correct about growth hormone?

- A) Its plasma concentration during hypoglycemia is more than hyperglycemia
- B) Intensive deficiency of protein inhibits its secretion
- C) Its secretion is increased during the first 2 hours of deep sleep
- D) Decreases the sensitivity for insulin

155) Stimulation of which part of the brain causes anger pattern?

- A) Subcallosal gyri
- B) Hypocampus
- C) lateral hypothalamus
- D) Amygdala

Genetics

156) Which of the following genes is known as the most frequently mutated of all the known cancer genes in human?

- A) TP53
- B) EGFR
- C) KRAS
- D) RB

157) In mitochondrial (cytoplasmic) genetics which option is correct:

- A) Heteroplasmy refers to the presence of more than one mutation in mitochondria
- B) Mitochondrial diseases have nothing to do with nuclear gene
- C) Mitochondrial genes mutate more frequently than nuclear genes
- D) Mitochondrial conditions affect only muscle and nerve tissue

158) Which of the terms are explained as autosomal traits which are expressed more frequently in one sex than in another?

- A) X-Linked Recessive Inheritance
- B) Sex Influence
- C) Partial Sex-Linkage
- D) Sex Limitation

159) Select the correct statement about the impact of genetic factors in Adult life:

- A) 5-10% of common cancers such as those of the breast, colon, and ovary have a strong hereditary component
- B) Less than 1% of the older adult population in developed countries will have a genetically determined medical problem
- C) Approximately 1% of all malignancies are primarily caused by polygenic inheritance
- D) By the age of 25 years, 50% of the population will have a disorder in which genetic factors play an important role

160) Which of the following descriptions are true about Sickle cell anemia?

- A) Caused by mutations in either the alpha-globin gene or the beta-globin gene
- B) Is an autosomal dominant disease
- C) Unaffected heterozygotes are resistant to infection by the malarial parasite
- D) Always caused by the same point mutation in the beta-globin gene

161) Which of the following techniques can be used to screen genes for unknown mutations?

- A) Realtime PCR
- B) Sanger Sequencing
- C) Oligonucleotide ligation assay
- D) RFLP

162) Which is correct about Extragenic DNA?

- A) Satellite DNA can be used for forensic and paternity tests
- B) MiniSatellite DNA composed by Interspersed repeated DNA Sequences
- C) MiniSatellite DNA can be used for DNA fingerprinting
- D) LINE Sequences are clustered around the centromeres

163) For an autosomal recessive condition, the chance that the first cousin of an affected individual be a carrier is:

- A) 1 in 2
- B) 1 in 16
- C) 1 in 8
- D) 1 in 4

164) In which of the following diseases heterogenic mutation is seen?

- A) Beta thalassemia
- B) Alkaptonuria
- C) Retinitis pigmentosa
- D) Deafness

165) Which of the following is the most standard screening methods for mutations?

- A) SANGER SEQUENCING
- B) PCR DIGITAL DROPLET
- C) KARYOTYPE
- D) MLPA

Medical Immunology

166) Which of the following molecules is the ligand of inhibitory receptors of NK cells?

- A) MHCI
- B) CD28
- C) MHCII
- D) CD94

167) Which one of the following characteristics are common in recognition molecules of innate and adaptive immunity?

- A) Self/nonself discriminations
- B) Specificity of pathogen recognition
- C) Gene rearrangement of receptor synthesis
- D) Diversity and number of surface receptors

168) The defect in IFN-gamma and IL-12 activity are associated with increased susceptibility to which one of the following pathogens?

- A) DNA viruses
- B) Extracellular encapsulated bacteria
- C) Extracellular protozoa
- D) Intracellular bacteria

169) In order to prevent rejection of grafted organs, which of the following molecules is blocked by CTLA4-Ig?

- A) CD28
- B) CTLA-4
- C) CD2
- D) B7

170) Which one of the following cytokine profiles are dominated in MS patients?

- A) Th1, Th17
- B) Th19, Th1
- C) Treg, Th17
- D) Th2, Treg

171) Intracellular antigenic peptides presented by which one of the MHC molecules to the cells specified below?

- A) class II to Tc
- B) class I to Th
- C) class I to Tc
- D) class II to Th

172) Which class of antibodies against *Toxoplasma* sp. represent the early stages of infection?

- A) Low affinity IgG
- B) High affinity IgE
- C) Low affinity IgE
- D) High affinity IgG

173) In the Hyper IgE syndrome, the defect in which of the following cells occurs?

- A) T_H9
- B) T_H1
- C) T_H22
- D) T_H17

174) Which molecule induces deletion of self-reactive T lymphocytes?

- A) CD40L
- B) CTLA4
- C) FasL
- D) PD1

175) All of the followings are observed in clinical latency period of HIV infection except for:

- A) High number of viral particles in plasma
- B) High titer of Anti-envelope antibody
- C) Steadily decline of CD4+ T cells
- D) Active viral replication in lymph node

176) Which of following hypersensitivity reaction can happen in serum therapy?

- A) Delay
- B) Immediate
- C) Complement - mediated
- D) Cytotoxic events

177) Which part of complement in lectin pathway doesn't have any activity?

- A) C3
- B) C1
- C) C4
- D) C2

178) Disorder and mutation in which gene causes x - linked hyper - IgM syndrome?

- A) FASL
- B) CD40L
- C) BTK
- D) FAS

179) Which cytokine has a role in differentiation of activated Tcell to helper Th1?

- A) Interleukin - 12
- B) Interleukin - 10
- C) Interleukin - 4
- D) Interleukin - 8

180) In which part of the molecule idiotypic characters of antibodies are located?

- A) In variable portion of both chains
- B) In Permanent portion of heavy chain
- C) In bending portion
- D) In permanent portion of light chain

Persian Language

181) کدام مورد زیر اپیمر گلوکوز است؟

- A) ریبوز
- B) لاکتوز
- C) مانوز
- D) فروکتوز

182) آلودگی به کدامیک از انگل های زیر از راه مدفوعی- دهانی است؟

- A) آسکاریس لومبریکوئیدس
- B) ژiardیالامبلیا
- C) توکسوپلازما گوندی
- D) پلاسمودیوم فالسیپارم

183) در کدام فرایند هوا از اتمسفر وارد ریه ها می شود؟

- A) فشار فضای جنبی
- B) دم
- C) بازدم شدید
- D) بازدم

184) زمان فعل «من هر روز خواهر خود را می دیدم.» را مشخص نمایید؟

- A) گذشته دور
- B) گذشته ساده
- C) گذشته التزامی
- D) گذشته استمراری

185) در جمله «کتاب علی در دست نسرین است.» نقش کلمه علی را مشخص کنید؟

- A) متمم
- B) مضاف
- C) مضاف الیه
- D) صفت

186) در جمله «محمد وارد دانشگاه شد.» نهاد را مشخص نمایید؟

- A) دانشگاه
- B) شد
- C) وارد
- D) محمد

187) مینا دیروز به بیمارستان مراجعه کرد. پزشک پس از معاینه مینا، برای او دارو تجویز کرد. در جمله دوم فاعل کدام است؟

- A) دارو
- B) بیمارستان
- C) مینا
- D) پزشک

188) در جمله «مریم برای سفر به قم رفت.» زمان فعل را مشخص کنید؟

- A) مضارع خبری
- B) آینده
- C) گذشته ساده
- D) گذشته دور

189) در جمله «آن درخت زیبا است.» صفت را مشخص کنید.

- A) زیبا
- B) آن
- C) درخت زیبا
- D) درخت

190) محل دو شاخه شدن نای کجاست؟

- A) مهره T6
- B) مفصل استرنوکلاویکولار راست
- C) زاویه استرنال
- D) مفصل استرنوکلاویکولار چپ

Oral Health and Community

191) Which of the following terms is related to new cases of disease?

- A) Incidence
- B) Rate
- C) Prevalence
- D) Proportion

192) Which of the following is not related to the features of "infection carrier"?

- A) Lack of diagnosable sign or symptom of disease
- B) Presence of disease agent in the body
- C) Impossibility of disease transmission
- D) Is due to improper treatment

193) Which of the epidemiologic study types investigation begins from effect to cause?

- A) Descriptive
- B) Cross - sectional
- C) Cohort
- D) Case - control

194) Which of the following terms is related to this definition? "Any bad or unwilling impact which is happened following diagnostic, preventive or treatment related interventions by medical professionals"

- A) sporadic disease
- B) opportunistic disease
- C) pandemic disease
- D) iatrogenic disease

195) In which levels of health care delivery system "health posts" are located?

- A) The third
- B) The first
- C) The second
- D) The first and the third

196) Which of the following is passive immunity?

- A) Humoral immunity
- B) Cellular immunity
- C) Mix of humoral and cellular immunity
- D) Immunity with human immunoglobulin

197) Which of the following is correct about analytic epidemiology?

- A) Testing hypotheses about etiology and exploring the determinant factors
- B) Measuring distribution of disease, disability or death
- C) Investigating the pattern of disease distribution in society
- D) Measuring events or factors related to public health

- 198) After how many hours if prepared and opened MMR and BCG vials are not used should be discarded?**
- A) 12
 - B) 6
 - C) 24
 - D) 3
- 199) Which of the following terms is used for a pathogenic infection cause which reproduce or is spreaded after invading the human or animal body?**
- A) Infestation
 - B) Contamination
 - C) Infection
 - D) Pollution
- 200) All the following are more in mothers as compared to cow's milk except:**
- A) Immunoglobuline
 - B) Lactose
 - C) Casein
 - D) Lactalbumin