

AOA

PROVISIONAL ANSWER KEY (CBRT)

Name of The Post	Associate Professor, Physiology, General State Service, Class-1
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Instructions / સૂચના

Candidate must ensure compliance to the instructions mentioned below, else objections shall not be considered: -

- (1) All the suggestion should be submitted in prescribed format of suggestion sheet Physically.
- (2) Question wise suggestion to be submitted in the prescribed format (Suggestion Sheet) published on the website.
- (3) All suggestions are to be submitted with reference to the Master Question Paper with provisional answer key (Master Question Paper), published herewith on the website. Objections should be sent referring to the Question, Question No. & options of the Master Question Paper.
- (4) Suggestions regarding question nos. and options other than provisional answer key (Master Question Paper) shall not be considered.
- (5) Objections and answers suggested by the candidate should be in compliance with the responses given by him in his answer sheet. Objections shall not be considered, in case, if responses given in the answer sheet / response sheet and submitted suggestions are differed.
- (6) Objection for each question shall be made on separate sheet. Objection for more than one question in single sheet shall not be considered & treated as cancelled.

ઉમેદવારે નીચેની સૂચનાઓનું પાલન કરવાની તકેદારી રાખવી, અન્યથા વાંધા-સૂચન અંગે કરેલ રજૂઆતો ધ્યાને લેવાશે નહીં

- (1) ઉમેદવારે વાંધા-સૂચનો નિયત કરવામાં આવેલ વાંધા-સૂચન પત્રકથી રજૂ કરવાના રહેશે.
- (2) ઉમેદવારે પ્રશ્નપ્રમાણે વાંધા-સૂચનો રજૂ કરવા વેબસાઈટ પર પ્રસિધ્ધ થયેલ નિયત વાંધા-સૂચન પત્રકના નમૂનાનો જ ઉપયોગ કરવો.
- (3) ઉમેદવારે પોતાને પરીક્ષામાં મળેલ પ્રશ્નપુસ્તિકામાં છપાયેલ પ્રશ્નક્રમાંક મુજબ વાંધા-સૂચનો રજૂ ન કરતા તમામ વાંધા-સૂચનો વેબસાઈટ પર પ્રસિધ્ધ થયેલ પ્રોવિઝનલ આન્સર કી (માસ્ટર પ્રશ્નપત્ર)ના પ્રશ્ન ક્રમાંક મુજબ અને તે સંદર્ભમાં રજૂ કરવા.
- (4) માસ્ટર પ્રશ્નપત્ર માં નિર્દિષ્ટ પ્રશ્ન અને વિકલ્પ સિવાયના વાંધા-સૂચન ધ્યાને લેવામાં આવશે નહીં.
- (5) ઉમેદવારે જે પ્રશ્નના વિકલ્પ પર વાંધો રજૂ કરેલ છે અને વિકલ્પ રૂપે જે જવાબ સૂચવેલ છે એ જવાબ ઉમેદવારે પોતાની ઉત્તરવહીમાં આપેલ હોવો જોઈએ. ઉમેદવારે સૂચવેલ જવાબ અને ઉત્તરવહીની જવાબ ભિન્ન હશે તો ઉમેદવારે રજૂ કરેલ વાંધા-સૂચન ધ્યાનમાં લેવાશે નહીં.
- (6) એક પ્રશ્ન માટે એક જ વાંધા-સૂચન પત્રક વાપરવું. એક જ વાંધા-સૂચન પત્રકમાં એકથી વધારે પ્રશ્નોની રજૂઆત કરેલ હશે તો તે અંગેના વાંધા-સૂચનો ધ્યાને લેવાશે નહીં.

001. All of the following changes in ionic concentration cause vasodilation, except :
- (A) Increase in Potassium ion (B) Increase in hydrogen ion
(C) Increase in magnesium ion (D) Increase in calcium ion
002. Which subunit of G proteins has intrinsic GTPase activity ?
- (A) Alpha (B) Beta
(C) Gamma (D) Delta
003. The following are the types of Glial cells seen in central nervous system, except
- (A) Astrocytes (B) Oligodendrocytes
(C) Dendrites (D) Microglia
004. Arrange the following events of phagocytosis in the order of their occurrence:
- (A) Diapedesis, chemotaxis, opsonisation and degranulation
(B) Chemotaxis, diapedesis, degranulation and opsonisation
(C) Diapedesis, chemotaxis Opsonisation and degranulation
(D) Chemotaxis, opsonisation, diapedesis and Degranulation
005. The force of skeletal muscle contraction is sensed by :
- (A) Nuclear bag fibre (B) Nuclear chain fibre
(C) Golgi tendon organ (D) Muscle spindle
006. Which of the following normally has a slowly depolarizing 'prepotential'?
- (A) Sinoatrial node (B) Atrial muscle cells
(C) Bundle of his (D) Perkinje fibers
007. The word milieu interieur was coined by:
- (A) W.B.Canon (B) Sherrington
(C) Claude Bernard (D) William harvey
008. Fragility of RBC is decreased in all of the following except :
- (A) Thalassemia (B) Sickle cell anaemia
(C) Spherocytic anaemia (D) Microcytic anaemia
009. Under the influence of hormone secretin, pancreas secretes pancreatic juice rich in:
- (A) Bicarbonate ion (B) Digestive enzymes
(C) Sodium ion (D) Pottasium ion
010. The respiratory exchange ratio is:
- (A) Ratio in the steady state of volume of CO₂ produced per unit of O₂ consumed in unit time
(B) Ratio of O₂ to CO₂ at any given time irrespective of achievement of equilibrium
(C) Ratio of Energy produced by using unit O₂
(D) All of the above
011. New name of all the enzymes involved in adrenal steroid hormone include all except
- (A) CYP11A1 (B) CYP17
(C) CYP21A2 (D) CYP450

012. The transport protein responsible for water reabsorption from renal tubules are:
 (A) SGLT-1 (B) SGLT-2
 (C) Aquaporins (D) GLUT-4
013. The peak sensitivity of rhodopsin is to light's wavelength of
 (A) 405 nm (B) 505 nm
 (C) 605 nm (D) 705 nm
014. The changes seen in blood stored at 4° C are all of the following, except:
 (A) Decreased sodium - potassium pump activity in RBCs
 (B) Decrease in ATP content of cells
 (C) Disappearance of leucocytes and platelets
 (D) Increase in viscosity
015. Overwhelming of the reservoir function of which of the following results in orthopnoea in heart failure?
 (A) Pulmonary veins (B) Pulmonary arteries
 (C) Right atrium (D) Systemic veins
016. The biggest contributor ion for total osmolal concentration of plasma in health is:
 (A) Potassium (B) Sodium
 (C) Ammonia (D) Glucose
017. All are rapidly adapting receptor except
 (A) Pacinian corpuscles (B) Meissner corpuscles
 (C) Merkel's disc (D) Krause's end bulb
018. The location of formation of Secondary bile acids is:
 (A) Gall bladder (B) Liver
 (C) Colon (D) Small intestine
019. The type of data collected through imitating operation of a real world process using computer test model is known as
 (A) Observational data (B) Experimental data
 (C) Simulation data (D) Derived data
020. The following are brought about by the direct action of growth hormone, except:
 (A) Epiphyseal growth
 (B) Acute Effect on fat metabolism
 (C) Acute Effect on carbohydrate metabolism
 (D) Acute protein anabolic effects
021. All the following are the examples of positive feedback systems in the body, except:
 (A) LH surge During Menstrual cycle (B) Hodgkins cycle in action potential
 (C) Release of oxytocin during parturition (D) Release of TSH from anterior pituitary
022. The patient does not have a limb but complains of pain and itch in that limb, that is phantomb limb phenomenon. The physiological basis is
 (A) Law of projection (B) Weber's - Fenchner law
 (C) Law of forward conduction (D) Muller's doctrine of specific nerve ending

023. All of the following are tests of parasympathetic division of autonomic Nervous system, except
 (A) Heart rate response to deep breathing **(B) Cold pressor test**
 (C) Resting heart rate (D) Standing to lying ratio
024. The Ratio of glomerular filtration rate to Renal plasma flow is called as:
(A) Filtration fraction (B) Absorption fraction
 (C) Excretion fraction (D) None of the above
025. The hormone that is not detectable in the blood of a nonpregnant female is
 (A) Oxytocin (B) Relaxin
(C) HCG (D) Inhibin
026. The suffix of 34.17, 14 after gastrin types are indicative of :
 (A) Time taken for their action to begin **(B) Number of amino acid residues in them**
 (C) Carboxy terminal tetrapeptide in them (D) None of the above
027. All of the following Parts of conducting system have potential to start an action potential in the heart, except:
 (A) SA node (B) AV node
(C) Inter nodal atrial pathways (D) Bundle of His
028. Which compartment does the term 'sucrose space' refer to?
(A) Extracellular fluid [ECF] (B) Intersitial fluid [ISF]
 (C) Intracellular fluid [ICF] (D) Plasma
029. Vegetative control function of hypothalamus includes all of the following, except:
 (A) Regulation of body temperature (B) Regulation of Body water
 (C) Regulation of feeding **(D) Regulation of Anterior pituitary hormone**
030. The dicrotic notch on the aortic pressure curve is caused by
 (A) Closure of the mitral valve (B) Closure of the tricuspid valve
(C) Closure of the aortic valve (D) Closure of the pulmonary valve
031. The process of programmed cell death in the body is known as:
(A) Apoptosis (B) Phagocytosis
 (C) Pinocytosis (D) Endocytosis
032. To which of the type of neurons listed below does the olfactory receptor cells belong to?
 (A) Sensory (B) Multipolar
 (C) Association **(D) Bipolar**
033. The sequence of events seen during body's response to injury and inflammation are:
 (A) Dolor, Calor, Tumor, Rubor **(B) Rubor, Dolor, Calor, Tumor**
 (C) Tumor, Calor, Dolor, Rubor (D) Rubor, Tumor, Calor, Dolor
034. The National Medical Council (NMC) bill which got cabinet approval in 2019 has proposed
 (A) Scraping of MCI act of 1953 and replace with NMC bill
 (B) National level common exit exams for undergraduate students
 (C) Regulate fees and other charges for private colleges
(D) All of the above

035. Sensation of slow pain is carried by:
- (A) A delta fibres (B) A gamma fibres
 (C) C fibres (D) B fibres
036. Which of the following has the highest total cross sectional area in the body?
- (A) Arteries (B) Aterioles
 (C) Capillaries (D) Venules
037. The Ability of the body for two point discrimination is a function of:
- (A) Rate of change of stimulus strength
 (B) Density of specialised tactile receptors in that area
 (C) Strength of the stimulus
 (D) None of the above
038. Von Willebrand factor has a role in :
- (A) Platelet adhesion with injured vascular surface
 (B) Activation of clotting factor
 (C) Clot lysis
 (D) Vasoconstriction
039. The concentrating ability of the kidney depends on;
- (A) The filtered load of solutes (B) Gradient of osmolality in renal medulla
 (C) Glomerular filtration rate (D) None of the above
040. Hemoglobin A1c indicates
- (A) persistent hyperglycemia over 3months (B) random hyperglycemia
 (C) frequent hyperglycemia (D) fasting hyperglycemia
041. The Rate of diffusion is increased by all of the following factors except:
- (A) Increased Concentration gradient across the membrane
 (B) Increased thickness of the membrane
 (C) Increased Lipid solubility of diffusing substance
 (D) Increased cross section area of the membrane
042. Starling's law of the heart
- (A) Does not operate in the failing heart
 (B) Does not operate during exercise
 (C) Explains the increase in heart rate produce
 (D) Explains the increase in cardiac output that occurs when venous return is increased
043. Rigidity seen following section across brain stem at the level of superior coliculi is called as:
- (A) Cog wheel rigidity (B) Leadpipe rigidity
 (C) Sherringtonian rigidity (D) Ischemic rigidity
044. The fastest nerve impulse is noticed in :
- (A) Alpha fibre (B) Beta fibres
 (C) Gamma fibres (D) Delta fibres

045. Ethyl alcohol acts as a diuretic by:
- (A) Decreasing tubular reabsorption of sodium
 (B) Inhibiting vasopressin
 (C) Supplying acid load
 (D) Inhibiting Na-K exchange in collecting duct
046. Which one of the following processes does not exhibit 'saturation kinetics'?
- (A) Facilitated diffusion (B) Na⁺- Ca⁺ exchanger
 (C) Simple diffusion (D) Na⁺ coupled active transport
047. When all refractive surfaces are considered as one single lens, the eye is called as:
- (A) Myopic eye (B) Hypermetropic eye
 (C) Reduced eye (D) Astigmatic eye
048. The property that causes heart to continue to beat even after all nerves to it are sectioned is
- (A) Excitability (B) Conductivity
 (C) Automaticity (D) Contractility
049. The clinical features of hashimotos thyroiditis include the following, except
- (A) Cold intolerance (B) Weight gain
 (C) Poor memory (D) Tachycardia
050. When light reflex is present and accomdation reflex absent the most likely site of lesion
- (A) Pretectal cortex (B) Ganglion cells
 (C) Edinger-Westpal nucleus (D) Visual cortex
051. Low frequency component of HRV is mainly indicative of :
- (A) Sympathetic drive (B) Parasympathetic drive
 (C) Renin angiotensin mechanism (D) None of the above
052. Arneth count helps to identify:
- (A) State of bonemarrow activity (B) Immune status
 (C) Presence of infection (D) Immunodeficiency
053. All of the following are agonists of parietal cell secretion, except:
- (A) Acetyl choline (B) Gastrin
 (C) Renin (D) Histamine
054. Pigmentation of skin especially marked over the pressure points in Addison's disease is due to
- (A) Increase ACTH and it has intrinsic MSH activity
 (B) Decrease ACTH
 (C) Normal ACTH lelevels
 (D) None of the above
055. The segment of Circulatory system that is the seat of peripheral Resistance is:
- (A) Aorta (B) Capillaries
 (C) Arterioles (D) Veins

056. Linear acceleration in the vertical plane is signaled by hair cells in:
(A) Anterior semicircular canal (B) Sacculle
(C) Posterior semicircular canal (D) Utricle
057. The following are seen during REM sleep, except:
(A) Vivid Dreaming (B) Increased muscle tone
(C) Difficult to arouse (D) Increased brain metabolism
058. Hypokalaemia (decreased ECF-K⁺) would be expected to result in:
(A) Increased neuronal excitability (B) More negative resting membrane potential
(C) No change in resting membrane potential (D) A decrease in firing level of neurons
059. In nerve cells hallmark non propagated potentials are the following, except:
(A) Synaptic potential (B) Generator potential
(C) Electrotonic potential (D) Action potential
060. The 2019 Nobel prize for physiology and medicine was awarded for a work on:
(A) The discovery of the mechanism of cellular adaptation to oxygen availability
(B) The discovery of cancer therapy by negative immune regulation
(C) The discovery of molecular mechanism of circadian rhythm
(D) Discovery of mechanism of autophagy
061. The location of active marrow in adults in health are all of the following, except:
(A) Pelvic bone (B) Sternum
(C) End of femur (D) Spleen
062. An introduction to medical ethics to undergraduate students is planned in the new CBME course by:
(A) AETCOM modules spread vertically in all years of undergraduate medical education
(B) Horizontal integration of subjects
(C) Vertical integration of various subjects
(D) None of the above
063. The gradual decrease in release of neurotransmitter following repeated transmission of impulses is called as:
(A) Sensitisation (B) Potentiation
(C) Habituation (D) Occlusion
064. The total circulating bile salt pool is approximately:
(A) 35 mg (B) 3.5 g
(C) 150 mg (D) 30 g
065. The plateau portion of cystometrogram curve demonstrates:
(A) Plasticity of the smooth muscle of bladder
(B) Elasticity of bladder
(C) Distensibility of bladder
(D) None of the above

066. Which of the following toxins inhibits the release of acetylcholine from α motor neurons?
 (A) Botulinum toxin (B) Cholera toxin
 (C) Cobra venom (D) Tetanus toxin
067. When the sensation of Pain and temperature is lost with preservation of touch, its known as:
 (A) Hemianesthesia (B) Allosthesia
 (C) Dissociated anaesthesia (D) Parasthesia
068. T wave inversion occurs when ventricular repolarisation occurs from:
 (A) Endocardium to epicardium (B) Epicardium to endocardium
 (C) Apex to base of heart (D) Base to apex of the heart
069. Cephalic phase of gastric juice secretion accounts for:
 (A) 10-20% of gastric juice secretion (B) 70-80% of gastric juice secretion
 (C) 30-50% of gastric secretion (D) None of the above
070. The severity of acidosis is related to
 (A) Anion gap (B) Arterial plasm pH
 (C) ICF pH and plasm pH (D) Plasm HCO_3^-
071. The number of muscle fibres in a motor unit in a muscle is decided by :
 (A) The type of the muscle contraction required, fine or coarse
 (B) Bulk of the muscle
 (C) Capillary density of the muscle
 (D) Energy stored in the muscle
072. Glucose Transporters meant for insulin stimulated glucose uptake in skeletal cardiac and adipose tissue is
 (A) GLUT 2 (B) GLUT 4
 (C) GLUT 7 (D) GLUT 5
073. Anaphylactic shock is a type of :
 (A) Distributive shock (B) Hypovolemic shock
 (C) Obstructive shock (D) Cardiogenic shock
074. The hypothalamic nucleus that act as a biological clock of the body is :
 (A) Supraoptic nucleus (B) Preoptic nucleus
 (C) Arcuate nucleus (D) Suprachiasmatic nucleus
075. The transporter responsible for absorption of glucose from the intestine into enterocytes is:
 (A) SGLT-2 (B) SGLT-1
 (C) GLUT-2 (D) GLUT-1
076. If the clearance of a substance which is freely filtered is less than that of inulin,
 (A) There is net reabsorption of the substance in the tubules
 (B) There is net secretion of the substance in the tubules
 (C) The substance is neither secreted nor reabsorbed in the tubules
 (D) The substance becomes bound to protein in the tubules

077. Incompetence of venous valves due to increased venous pressure is clinically manifest as:
 (A) Varicose veins (B) Deep vein thrombosis
 (C) Thrombo embolism (D) None of the above
078. At which time does pineal hormone peak in blood in a normal adult on a day time work shift
 (A) 2 AM (B) 8 AM
 (C) 2 PM (D) 8 PM
079. CSF of person kept awake for prolonged periods is seen to contain high concentration of:
 (A) Serotonin (B) Muramyl peptide
 (C) Acetyl choline (D) Glutamine
080. The term hormone was coined by Ernest H Starling to describe the action of
 (A) Secretin (B) Insulin
 (C) Growth hormone (D) Glucagon
081. The theories of referred pain are all of the following, except:
 (A) Dermatomal theory (B) Autonomic theory
 (C) Convergence theory (D) Facilitation theory
082. Healthy male athletes on chronic androgen abuse are least likely to show increased
 (A) Erythropoiesis (B) Sperm count
 (C) Respiratory endurance (D) Muscle mass
083. The muscle protein missing in Duchenne muscular dystrophy is:
 (A) Actin (B) Myosin
 (C) Tropomyosin (D) Dystrophin
084. Lesions of the ventromedial hypothalamus typically results in
 (A) Anorexia (B) Obesity
 (C) Hypersexuality (D) Amnesia
085. Nitric oxide is a vasodilator substance released from:
 (A) Healthy Endothelial cells (B) Healthy Myocardial cell
 (C) Healthy Myometrial cells (D) None of the above
086. Lung compliance is increased in
 (A) Pulmonary emphysema (B) Pulmonary fibrosis
 (C) Surfactant deficiency (D) Acute pulmonary oedema
087. The following locations in the body have single unit smooth muscles, except
 (A) Walls of hollow visera (B) Ducts of Digestive glands
 (C) Ureters and urinary bladder (D) Intrinsic muscles of the eye
088. The loss of fine touch proprioception sensation on same side and pain and temperature sensation on opposite side and with paresis or paralysis of same side is seen in
 (A) Brown-Sequard syndrome (B) Posterior column syndrome
 (C) Radiculopathy (D) Syringomyelia
089. The maximal rate of renal active transport at which tubules can transport solutes is known as:
 (A) Renal threshold for that substance (B) Transport Maximum for that substance
 (C) Maximum Reabsorption rate (D) Maximum Absorption rate

090. Gastric emptying is slowest after a meal containing
 (A) Fat (B) Carbohydrate
 (C) Protein (D) Indigestible fibre
091. In health, the percentage of leucocytes in circulation pool of peripheral circulation is:
 (A) 20% (B) 50%
 (C) 40% (D) 30%
092. Which of the following is the final common motor pathway:
 (A) Alpha motor neuron (B) Gamma motor neuron
 (C) Corticospinal tract (D) Basal ganglia
093. The following are the examples of second messengers in endocrinal system, except:
 (A) CyclicAMP
 (B) Membrane phospholipid-phospholipase system
 (C) Diacyl glycerol system
 (D) Guanyl cyclase
094. Which of the following reduces synthesis of 2, 3 DPG in red blood cell?
 (A) Acidosis in red blood cell (B) Exercise
 (C) Anaemia (D) Ascent to high altitude
095. The refractory error of the eye that can be corrected by using cylindrical lens is:
 (A) Presbyopia (B) Myopia
 (C) Hyper metropia (D) Astigmatism
096. Dehydration increases the plasma concentration of all the following hormones except
 (A) Vasopressin (B) Angiotensin II
 (C) Aldosterone (D) Atrial natriuretic peptide ansD
097. The function of Migrating Motor Complex (MMC) during inter digestive period is:
 (A) To clear the stomach and small intestine of luminal contents
 (B) To enhance absorption from stomach
 (C) To inhibit GI motility temporarily
 (D) None of the above
098. All of the following are descending motor tract except:
 (A) Rubrospinal tract (B) Spinotectal tract
 (C) Reticulospinal tract (D) Corticobulbar tract
099. Conduction deafness is seen in the following conditions except
 (A) Otosclerosis (B) Tympanic membrane rupture
 (C) Impacted wax in external auditory canal (D) Presbycusis
100. Alzheimers disease is a type of dementia characterised by:
 (A) Deposition of beta-Amyloid peptide in brain
 (B) Deterioration of language
 (C) Amnesic type of memory impairment
 (D) All of the above

101. The area of brain where conversion of short term memory to long term memory takes place is:
 (A) Hippocampus (B) Amygdala
 (C) Cerebellum (D) None of the above
102. Intravenous lactic acid increase ventilation, the receptors responsible for it is located in the
 (A) Medulla oblongata (B) Carotid bodies
 (C) Lung parenchyma (D) Aortic baroreceptor
103. The historical first hormone to be demonstrated by Bayliss and Starling in the year 1902 was:
 (A) Cholecystokinin (B) Motilin
 (C) Secretin (D) Somatostatin
104. Insulin action on K^+ ion is used in the management of all except
 (A) Diabetic ketoacidosis (B) Acute renal failure
 (C) Hypokalemia (D) Hyperkalemia
105. The pressure generated as a result of surface tension in the alveoli is inversely related to :
 (A) Radius of the alveolus (B) Amount of Surfactant in the alveolus
 (C) Amount of fluid in the alveolus (D) Surface area of alveolus
106. The membrane potential at which net flux of an ion across the membrane is zero is called
 (A) Resting membrane potential (B) Spike potential
 (C) Threshold potential (D) Equilibrium potential of that ion
107. Achalasia cardia is a condition caused due to :
 (A) Failure of the lower oesophageal sphincter to contract
 (B) Failure of the lower oesophageal sphincter to relax
 (C) Congenital absence of lower esophageal sphincter
 (D) All of the above
108. What is the maximum amount of oxygen a gram of adult Hb can bind ?
 (A) 1 ml (B) 1.34 ml
 (C) 15 ml (D) 20 ml
109. Accupuncture and accupressure produce analgesia by:
 (A) Releasing endorphins and by gate control mechanism
 (B) Releasing GABA
 (C) Releasing endogenous Morphine
 (D) None of the above
110. The fourth heart sound is caused by
 (A) Closure of the aortic and pulmonary valves
 (B) Vibration in the ventricular wall during systole
 (C) Ventricular filling
 (D) Closure of the mitral and tricuspid valves
111. Absorption of iron from duodenum into blood requires all of the following, except:
 (A) DMT1 (B) Ferroportin1
 (C) Hephhaestin (Hp) (D) Transferrin

112. The number of Na⁺ channels per square micrometer of membrane in myelinated mammalian neuron is maximum in the
- (A) Cell body (B) Dendritic zone
(C) Initial segment (D) Node of Ranvier
113. The essential need of cortisol for physiological action of some other hormones is known as:
- (A) Regulatory action of cortisol (B) Secretory action of cortisol
(C) Permissive action of cortisol (D) Inhibitory action of cortisol
114. Variation in which of the following components of blood or CSF do not affect respiration?
- (A) Arterial HCO₃⁻ (B) CSF H⁺ concentration
(C) Arterial Na⁺ concentration (D) CSF CO₂ concentration
115. Hypothalamic releasing hormones are:
- (A) Small polypeptide hormones (B) Large protein hormones
(C) Steroid hormone (D) Tyrosine derivative hormones
116. Which of the following statements about electronic potential is incorrect?
- (A) They are graded potential
(B) They are local responses
(C) They may be depolarising or hyperpolarising
(D) They are produced by threshold stimulus
117. The lungs are divided into zones 1, 2 and 3 based on:
- (A) Blood flow pattern during different phases of cardiac cycle
(B) Ventilation pattern during different phases of cardiac cycle
(C) Capillary density in different parts of the lungs
(D) None of the above
118. In adult which is the most difference between the systemic and pulmonary circulation?
- (A) Volume of the blood flowing through it (B) Stroke volume
(C) Capillary hydrostatic pressure (D) Oncotic pressure
119. The physiological basis for summation and facilitation at synapses is
- (A) Law of convergence and divergence (B) Law of forward conduction
(C) Law of inhibition (D) Law of projection
120. The most prominent Type of EEG waves seen in awake adults sitting with their eyes closed is:
- (A) Alpha rhythm (B) Theta rhythm
(C) Delta rhythm (D) Sleep spindles
121. All of the following are basal ganglia diseases, except:
- (A) Chorea (B) Wilsons disease
(C) Parkinson disease (D) Friedreich ataxia
122. The nerve fibre type most susceptible to conduction block by pressure is
- (A) Type A (B) Type B
(C) Type C (D) Type D

123. The main function of Aldosterone is to Increase the water and sodium reabsorption from:
 (A) P cells in DCT and collecting ducts (B) Proximal convoluted tubule
 (C) Thick segment of Loop of henle (D) Thin segment of loop of henle
124. The velocity of the blood flow
 (A) is higher in the capillaries than the arterioles
 (B) is higher in the veins than the venules
 (C) is higher in the vein than the arteries
 (D) falls to zero in the descending aorta during diastole
125. Cephalic phase of gastric juice secretion accounts for:
 (A) 10-20% of gastric juice secretion (B) 70-80% of gastric juice secretion
 (C) 30-50% of gastric secretion (D) None of the above
126. Increasing alveolar ventilation increase the blood pH because:
 (A) It activates neural mechanisms that remove acid from the blood
 (B) It makes haemoglobin a stronger acid
 (C) It increase the PO_2 of the blood
 (D) It decrease the PCO_2 in the alveoli
127. The rapid action of steroid hormones on target cells is known as:
 (A) Genomic action of steroid hormones (B) Non-genomic action of steroid hormones
 (C) Fast action of steroid hormones (D) None of the above
128. Chronaxie is minimum in
 (A) Large myelinated fibres (B) Skeletal muscle
 (C) Unmyelinated nerve fibre (D) Cardiac muscle
129. Water deprivation test fails to produce an increase in urine osmolality except in the case of
 (A) Neurogenic diabetes insipidus (B) Nephrogenic diabetes insipidus
 (C) Diabetes mellitus (D) None of the above
130. Horner syndrome is characterised by the following, except:
 (A) Ptosis (B) Exophthalmos
 (C) Anhidrosis (D) Miosis
131. Motility and shape of the cell are provide by:
 (A) Microtubules (B) Microfilaments
 (C) Plasma membrane (D) Rough endoplasmic reticulum
132. All the following factors shifts oxygen haemoglobin curve to right, except
 (A) Increased carbon dioxide (B) Increased DPG
 (C) Increased temperature (D) Decreased Hydrogen ions
133. The number of muscle fibres innervated by a motor axon is smallest in:
 (A) Gastrocnemius (B) Orbicularis oculi
 (C) Single unit smooth muscle (D) Soleus

134. The polyuria seen in diabetes mellitus is due to :
- (A) Pressure diuresis (B) Osmotic diuresis
(C) ADH deficiency (D) Water diuresis
135. The dorsal root is sensory and ventral root is motor in spinal cord is
- (A) Bell-Magndie law (B) Law of specific nerve ending
(C) Law of projection (D) Law of forward conduction
136. A well trained athlete may be able to achieve during severe exercise a cardiac output of :
- (A) 15 litres (B) 25 litres
(C) 35 litres (D) 45 litres
137. Spinal motor neuron is a typical example of
- (A) Unipolar neuron (B) Pseudo unipolar neuron
(C) Bipolar neuron (D) Multipolar neuron
138. In case of peripheral nerve injuries, which of the following investigations is most useful to assess the likelihood of recovery of muscle and nerve function?
- (A) Electromyography (B) Muscle biopsy
(C) Strength - duration curve (D) Creatine phosphokinase levels
139. Which of the following is a better marker of Beta cell activity :
- (A) Plasma level Insulin (B) C-peptide assay
(C) Plasma glucose level (D) Plasma levels of GI hormones
140. Megaloblastic anaemia is not the feature of the deficiency of
- (A) Vitamin B12 (B) Folic acid
(C) Iron (D) Intrinsic factor
141. All of the following factors increase insulin secretion, except:
- (A) Amino acids (B) Acetylcholine
(C) Glucose (D) leptin
142. In the presence of vasopressin, the greatest fraction of filtered water is absorbed in the :
- (A) Proximal tubule (B) Loop of Henle
(C) Distal tubule (D) Cortical collecting duct
143. The reflex which protect the lungs from over inflation damage is called as:
- (A) Hering-breuer reflex (B) pneumotaxic reflex
(C) J-receptor reflex (D) Chyene-stokes reflex
144. The type of cell in the CNS that primarily involved in the reuptake of excitatory neurotransmitters released by neuron is:
- (A) Astroglial cell (B) Microglial cell
(C) Oligodendroglial cell (D) Ependymal cell
145. The following statements are true about Parathyroid hormone related protein. (PTHrP), except:
- (A) Stimulates Chondrocytes (B) Stimulate lactation
(C) Causes calcium transport in placenta (D) Produced exclusively in parathyroid gland

146. Binding of oxygen to haemoglobin reduces its affinity for carbon dioxide. This is
 (A) Bohr effect (B) Haldane effect
 (C) Hawthorne effect (D) Hamburger effect
147. Ventricular fibrillation seen after Myocardial infarction is due to:
 (A) Increased potassium concentration in ECF
 (B) Ischemia of cardiac muscles
 (C) Cardiac muscle weakness causing ventricular Dilation
 (D) All of the above
148. Which of the following neurotransmitters has both excitatory and inhibitory effects?
 (A) Aspartate (B) GABA
 (C) Glutamate (D) Substance P
149. The cause of Jaundice in Cholelithiasis is due to:
 (A) Hepatic obstruction for formation of bile
 (B) Bile Outflow obstruction and stasis in gall bladder
 (C) Excess formation of bile from increased RBC destruction
 (D) None of the above
150. Hyperbaric oxygen therapy is useful in the management of
 (A) Cyanide poisoning (B) Carbon monoxide poisoning
 (C) Gas gangrene (D) All of the above
151. Neurogenic shock is caused by:
 (A) Deep general anaesthesia (B) Prolonged spinal anaesthesia
 (C) Brain concussion or contusion (D) All of the above
152. Renshaw cell inhibition is an example of
 (A) Presynaptic feedforward inhibition
 (B) Postsynaptic feedforward inhibition
 (C) Presynaptic negative feedforward inhibition
 (D) Postsynaptic negative feedback inhibition
153. Cells located in carotid and aortic bodies which act as peripheral chemoreceptors are called as
 (A) Sustentacular cells (B) Glomus cells
 (C) J cells (D) None of the above
154. In dorsal column pathway, 3 order neuron arises from
 (A) Thalamus (B) Medulla
 (C) Mid Brain (D) Dorsal root ganglion
155. Vitamin D Receptors are located in all of the following tissues, except
 (A) Enterocytes (B) Osteocytes
 (C) Epithelial cells of nephrons (D) Keratinocytes
156. The best example of a polysynaptic reflex is
 (A) Stretch reflex (B) Axon reflex
 (C) Inverse stretch reflex (D) Withdrawal reflex

157. Phenomenon of Aldosterone escape is due to:
 (A) Increase in synthesis of ANP (B) Increased natriuresis and Diuresis
 (C) Increased ECF volume (D) All of the above
158. In a healthy adult, ECF volume constitutes what % of body weight?
 (A) 10% (B) 20%
 (C) 30% (D) 40%
159. Azurophilic granules seen in neutrophils are:
 (A) Primary granules (B) Secondary granules
 (C) Tertiary granules (D) Secretory granules
160. The vitamin involved in reformation of Rhodopsin is :
 (A) Vitamin A (B) Vitamin D
 (C) Vitamin C (D) Vitamin K
161. The olfactory membrane in humans has a surface area of about:
 (A) 2.4 Square Centimetres (B) 24 Square centimetres
 (C) 0.4 Square centimetres (D) 04 Square centimetres
162. A condition which lead to tissue hypoxia without an alteration of O₂ content of blood?
 (A) Carbon monoxide poisoning (B) Methemoglobinemia
 (C) Cyanide poisoning (D) Respiratory acidosis
163. The representational hemisphere is better than categorical hemisphere in
 (A) Mathematical ability (B) Deciphering spoken words
 (C) Deciphering written words (D) Visuospatial relationships
164. Miscelles in bile are formed by
 (A) Bile salt and phospholipids (B) Bile acids and bile salts
 (C) Cholesterol and bile salts (D) Cholesterol and phospholipids
165. Non- dysjunction of chromosomes during gametogenesis results in:
 (A) Turner's syndrome (B) Klinefelter's syndrome
 (C) Down's syndrome (D) None of the above
166. Which is the most important cholegogue?
 (A) Secretin (B) Cholecystokin
 (C) Gastrin (D) Gastric inhibitory peptides
167. Adrenergic alpha receptor causes all of the following, except:
 (A) Vasoconstriction (B) Bronchodilation
 (C) Iris dilation (D) Pilomotor contraction
168. The most recent technique for the non invasive measurement of cardiac output is :
 (A) Pulmonary artery catheterization (B) Thermodilution
 (C) Echocardiography (D) Impedence cardiography
169. Amplitude of vibration of the basilar membrane decides
 (A) The loudness of the sound produced (B) The frequency of the sound produced
 (C) Both (A) and (B) (D) None of the above

170. Normally the most of water in the GI lumen is absorbed from
 (A) Stomach (B) Duodenum
 (C) Jejunum (D) Colon
171. Excitatory Post Synaptic Potential (EPSP) is caused by:
 (A) Opening up of sodium channel (B) Opening of Calcium channel
 (C) Closure of Potassium channels (D) All of the above
172. Glucose reabsorption occurs in the:
 (A) Proximal tubule (B) Loop of Henle
 (C) Distal tubule (D) Cortical collecting duct
173. Abnormalities of language functions not due to vision, hearing or motor paralysis are known as
 (A) Dysarthria (B) Aphasia
 (C) Dyslexia (D) Acalculia
174. 90% of cases of congenital adrenal hyperplasia is due to
 (A) Deficiency of cholesterol demolase (B) CYP 21 A2
 (C) 21 beta hydroxylase deficiency (D) CYP214
175. In normal adult human male, the total surface area of the respiratory membrane is about:
 (A) 10 Square meters (B) 25 Square meters
 (C) 70 Square meters (D) 150 Square meters
176. The structures most involved in localisation of sound stimuli is
 (A) Superior olivary complex (B) Inferior colliculus
 (C) Medial geniculate nucleus (D) Auditory cortex
177. An aviator suffers from red 'Red out' due to the effect of
 (A) Positive-G during acceleration (B) Negative-G during deceleration
 (C) High Speed of the air craft (D) None of the above
178. Which types of cholesterol used in adrenal cortex for synthesis of adrenal hormone is
 (A) HDL (B) LDL
 (C) Triglycerides (D) Polyunsaturated fatty acids
179. Among intercellular connections, The protein subunits connexion are seen in:
 (A) Desmosomes (B) Hemidesmosomes
 (C) Focal adhesions (D) Gap junctions
180. To differentiate the disease of adrenal cortex or disease of ovary in prepubertal girl investigation preferred is
 (A) Urinary concentration of metabolites of cortisol degradation
 (B) Urinary concentration of progesterone and oestrogen etc
 (C) Both (A) and (B)
 (D) None of the above

181. The hall mark of onset of puberty is:
(A) Pulsatile secretion of Follicle stimulating hormone
 (B) Pulsatile secretion of GnRH
(C) Continuous secretion of FSH
(D) Continuous secretion of GnRH
182. Clinical features of Cushing syndrome are all except
(A) Moon face and buffalo hump
(B) Hypertension, diabetes, hirsutism
(C) Amenorrhea reddish purple striae and echymosis
 (D) Distal myopathy
183. The main function of renal cortex is
 (A) Filtration of large volume of blood (B) Reabsorption of large volume of water
(C) Acid base balance (D) Concentration of urine
184. Dorsal column pathway carries all sensation except
 (A) Crude touch (B) Vibration
(C) Proprioception (D) Stereognosis
185. Respiratory unit is formed by all the following structures except
(A) Respiratory bronchiole (B) Terminal bronchiole
(C) Alveolar ducts (D) Alveoli
186. Strong emotion also decrease pain perception probably due to
 (A) Descending adrenergic system (B) Descending motor pathway
(C) Dorsal column pathway (D) Anterior spinothalamic pathway
187. In regulating respiration, Central chemoreceptors are most sensitive to changes in:
(A) Oxygen concentration of blood
 (B) Changes in carbon dioxide concentration of blood
(C) Changes in Hemoglobin concentration of blood
(D) None of the above
188. The peak burst of ACTH in 24 hours in a healthy adult is more frequent and prominent during
 (A) early morning 4:00 to 10:00 (B) afternoon 12:00 to 3:00
(C) evening 4:00 to 5:00 (D) midnight 11:00 to 12:00
189. Maturity Onset Diabetes of the Young(MODY) is:
(A) A type of type I diabetes mellitus (B) A type of Type II diabetes mellitus
(C) Secondary diabetes mellitus (D) None of the above
190. In healthy adult male weighing 70 kg, the total volume of fluid present in the transcellular compartment does not normally exceed
 (A) 1 litre (B) 3 litres
(C) 5 litres (D) 7 litres

191. The flow-volume curves can measure all of the following parameters, Except
 (A) Flow rates during expiration (B) Slow Vital Capacity (SVC)
 (C) Peak Expiratory Flow Rate (PEFR) (D) Forced Vital Capacity(FVC)
192. In syringomyelic syndrome there is loss of sensation of
 (A) Dorsal column pathway (B) Lateral spinothalamic tract
 (C) Rubrospinal pathway (D) Tetospinal pathway
193. The reduced sensitivity of eye to light following long exposure to bright light is known as:
 (A) Light adaptation (B) Dark adaptpation
 (C) Pupillary adaptation (D) Accomadation
194. During exercise, a man consumes 1.8 L of Oxygen per minute. His arterial O₂ content is 190 mL/L, and the O₂ content of his mixed venous blood is 134 mL/L. His cardiac output is approximatey
 (A) 3.2 L/min (B) 16 L/min
 (C) 32 L/min (D) 54 L/min
195. H-antigen is present in the following blood groups:
 (A) A group (B) AB group
 (C) B group (D) All of the above
196. The cause of colonic contractions leading to defecation often following a meal in infants is
 (A) The enterogastric reflex (B) Histamine
 (C) The gastrocolic reflex (D) Increased circulatory levels of CCK
197. Conn's syndrome is due to :
 (A) Primary hyper aldosteronism (B) Secondary hyper aldosteronism
 (C) Beta hydroxylase enzyme deficiency (D) None of the above
198. All of the following are characteristic of Juxta medullary nephron, Except
 (A) Constitutes 15% of nephrons (B) Large peritubular capillary network
 (C) Long loop of henle (D) Creates medullary osmotic gradient
199. The type of eye movement that bring new object of interest onto the fovea are/is
 (A) Saccades (B) Convergence movements
 (C) Smooth ourshoot movements (D) Vestibular movements
200. All of the following conditions causes precocious pseudo puberty, except:
 (A) Congenital virilising adrenal hyperplasia (B) Estrogen secreting tumor
 (C) Posterior hypothalamus disorders (D) Leydig cell tumor of testis