

PROVISIONAL ANSWER KEY

Question 52/2023/OL

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Question1:-Glucose transporter concerned with glucose absorption in intestine is

A:-Glut 1

B:-Glut 2

C:-Glut 3

D:-Glut 4

Correct Answer:- Option-B

Question2:-Which of the following is NOT an example of dietary fibre ?

A:-Cellulose

B:-Pectin

C:-Hemicellulose

D:-Trehalose

Correct Answer:- Option-D

Question3:-How many substrate level phosphorylation steps are there in glycolytic pathway ?

A:-One

B:-Two

C:-Three

D:-None

Correct Answer:- Option-B

Question4:-Essential pentosuria is an inborn error in metabolism of

A:-Glycolytic pathway

B:-HMP shunt pathway

C:-Glucuronic acid pathway

D:-Polyol pathway

Correct Answer:- Option-C

Question5:-Which of the following enzymes is NOT activated by insulin ?

A:-Glucokinase

B:-Hexokinase

C:-Glycogen synthase

D:-Pyruvate dehydrogenase

Correct Answer:- Option-A

Question6:-Which of the following statements is false regarding Rapoport Leubering cycle ?

A:-There is generation of 2, 3-BPG

B:-Occurs in RBC

C:-In hypoxic condition 2, 3-BPG formation increases

D:-1 molecule of ATP is used up in this cycle

Correct Answer:- Option-D

Question7:-Substrates of gluconeogenesis include, all Except

A:-Alanine

B:-Lactate

C:-Leucine

D:-Pyruvate

Correct Answer:- Option-C

Question8:-An example of acute complication of diabetes mellitus is

A:-Diabetic ketoacidosis

B:-Atherosclerosis

C:-Cataract of lens

D:-Kimmelstiel-Wilson syndrome

Correct Answer:- Option-A

Question9:-Physiologic significance of HMP shunt pathway

A:-Generation of NADH

B:-Generation of NADPH

C:-Complete oxidation of glucose

D:-Generation of ATP

Correct Answer:- Option-B

Question10:-The key enzyme in breakdown of glycogen is

A:-Glycogen phosphorylase

B:-De-branching enzyme (α 1-4, 1-4 glucan transferase)

C:- α 1-6 glucosidase

D:-Glucose-6-phosphatase

Correct Answer:- Option-A

Question11:-Which of the following is an example of ω 3 fatty acid ?

A:-Arachidonic acid

B:-Linoleic acid

C:-Linolenic acid

D:-Palmitoleic acid

Correct Answer:- Option-C

Question12:-Beta oxidation of fatty acid occurs in

A:-Cytoplasm

B:-Mitochondria

C:-Peroxisome

D:-Lysosome

Correct Answer:- Option-B

Question13:-Lipolysis is

A:-Breakdown of fatty acids

B:-Breakdown of triglycerides

C:-Breakdown of LDL

D:-Breakdown of chylomicrons

Correct Answer:- Option-B

Question14:-Apolipoprotein concerned with activation of LCAT is

A:-Apo AI

B:-Apo B100

C:-Apo CI

D:-Apo CII

Correct Answer:- Option-A

Question15:-Appearance of a creamy layer over clear plasma when kept for 24 hrs. is seen in

A:-Type I hyperlipoproteinemia

B:-Type IIA hyperlipoproteinemia

C:-Type IIB hyperlipoproteinemia

D:-Type III hyperlipoproteinemia

Correct Answer:- Option-A

Question16:-Which of the following amino acid is ketogenic ?

A:-Proline

B:-Serine

C:-Valine

D:-Leucine

Correct Answer:- Option-D

Question17:-The amino acid contributing to one carbon pool

A:-Alanine

B:-Glycine

C:-Glutamic acid

D:-Valine

Correct Answer:- Option-B

Question18:-Functions of glutathione include all of the following Except

A:-Free radical scavenging

B:-Disulphide bond formation

C:-Detoxification

D:-Activation of enzymes

Correct Answer:- Option-B

Question19:-Mention the B complex vitamin, the active form of which is required for many biochemical reactions of amino acids

A:-Thiamine

B:-Riboflavin

C:-Pyridoxine

D:-Biotin

Correct Answer:- Option-C

Question20:-Serotonin is a biologically important substance derived from

A:-Tyrosine

B:-Tetrahydrofolic acid

C:-Threonine

D:-Tryptophan

Correct Answer:- Option-D

Question21:-All the vitamins are produced from precursors in human body Except

A:-Niacin

B:-Ascorbic acid

C:-Vitamin D

D:-Vitamin A

Correct Answer:- Option-B

Question22:-Rate limiting step in catabolism of Heme is

A:-Degradation of heme by microsomal heme oxygenase system

B:-Uptake of bilirubin by liver parenchymal cells

C:-Conjugation of bilirubin with Glucuronate

D:-Excretion of conjugated bilirubin into bile

Correct Answer:- Option-D

Question23:-Which of the following statements about Obstructive Jaundice are true ?

- i. Increased levels of conjugated bilirubin in blood.
- ii. Direct Positive Vanden Bergh Test for bilirubin.
- iii. Increased excretion of urobilinogen in urine.
- iv. Increased cholesterol in blood.

A:-Only ii and iii

B:-Only ii, iii and iv

C:-Only i, ii and iv

D:-All of the above i, ii, iii and iv

Correct Answer:- Option-C

Question24:-The antithyroid drug methimazole decreases thyroid function by

A:-Decreasing iodine uptake by thyroid gland

B:-Reducing oxidation of iodine to active iodide

C:-Diminishing iodination of thyroglobulin

D:-Lowering coupling of di-iodotyrosine to T4

Correct Answer:- Option-B

Question25:-To calculate creatinine clearance by Cockcroft-Gault formula, all the following data are required Except

A:-Age of the patient

B:-Body weight of the patient

C:-Serum creatinine concentration

D:-Urine creatinine concentration

Correct Answer:- Option-D

Question26:-Which of the following scenarios is the most consistent with a diagnosis of acute liver disease ?

A:-Decreased serum albumin, normal prothrombin time

B:-Decreased serum albumin, increased prothrombin time

C:-Normal serum albumin, increased prothrombin time

D:-Increased serum albumin, normal prothrombin time

Correct Answer:- Option-C

Question27:-Which of the following mineral is known as 'Glucose Tolerance Factor' ?

A:-Chromium

B:-Cobalt

C:-Calcium

D:-Copper

Correct Answer:- Option-A

Question28:-Identify the incorrect statement/s.

- i. The most useful test for assessing thyroid function is TSH.
- ii. TSH Receptor Antibody is positive in 80-90% of patients with Hashimoto's thyroiditis.
- iii. Anti-thyroglobulin auto antibodies interfere with thyroglobulin measurements.
- iv. In Grave's disease, TSH is low and FT4 is normal.

A:-Only ii and iii

B:-Only ii and iv

C:-Only ii

D:-Only i, iii and iv

Correct Answer:- Option-C

Question29:-Which of the following is not a feature of pre-renal azotemia ?

- i. Low blood pressure.
- ii. Increased Fractional Excretion of Sodium (FENa).
- iii. Increased BUN/Serum Creatinine Ratio.
- iv. Increased serum creatinine.

A:-Only ii

B:-Only iii

C:-Only ii and iii

D:-Only ii, iii and iv

Correct Answer:- Option-A

Question30:-Which of the following statement concerning Vitamin - D is incorrect ?

A:-Vitamin - D has immunomodulatory action

B:-Deficiency of Vitamin - D is associated with increased incidence of breast, colon and prostate cancer

C:-Vitamin - D is an anti-oxidant

D:-The active form of Vitamin - D is calcitriol

Correct Answer:- Option-C

Question31:-A 45 year old patient came with complaints of easy fatigueability and palpitations. On examination, she had pallor. Methyl malonic acid, excretion in urine was estimated as part of evaluation. This can be utilised to assess the nutritional status of which Vitamin ?

A:-Folic acid

B:-Vitamin B12

C:-Vitamin C

D:-Niacin

Correct Answer:- Option-B

Question32:-Group the liver function tests listed below as

I - Tests based on excretory function.

II - Tests based on synthetic function

i. Serum bilirubin

ii. Urine bile salts

iii. Prothrombin time

A:-I - (i, ii), II - (iii)

B:-I - (ii), II - (i, iii)

C:-I - (iii), II - (i, ii)

D:-I - (ii, iii), II - (i)

Correct Answer:- Option-A

Question33:-Which of the following is not a coenzyme ?

A:-Lipoic acid

B:-ATP

C:-Vitamin K

D:-S - adenosyl methionine

Correct Answer:- Option-D

Question34:-A 20 year old man presented with jaundice and tiredness. On investigating, his AST was 150 lu/L, ALT was 175 lu/L and bilirubin was 4.5 mg/dl. Serum Cerruloplasmin levels were found to be low. Which of the following mineral is used in the treatment of this condition ?

A:-Copper

B:-Zinc

C:-Magnesium

D:-Molybdenum

Correct Answer:- Option-B

Question35:-A 20 year old body builder presented with fatigue on moderate exercise. He had recently started raw eggs for protein. Which of the following enzyme is likely deficient in him ?

A:-Phosphoenol pyruvate carboxy kinase

B:-Glucose-6-phosphatase

C:-Glycogen phosphorylase

D:-Pyruvate carboxylase

Correct Answer:- Option-D

Question36:-AST : ALT ratio greater than 2 is seen in all Except

A:-Non-alcoholic steatohepatitis

B:-Alcoholic hepatitis

C:-Liver metastasis

D:-Acute hepatocellular injury

Correct Answer:- Option-D

Question37:-Which of the following is not a type of covalent modification for regulation of enzyme kinetics ?

A:-Methylation

B:-Ionization

C:-ADP Ribosylation

D:-Acetylation

Correct Answer:- Option-B

Question38:-Black liver jaundice is a feature of

A:-Crigler-Najjar Syndrome

B:-Dubin-Johnson Syndrome

C:-Gilbert's Disease

D:-Rotor Syndrome

Correct Answer:- Option-B

Question39:-Which of the following is not a non-functional enzymes ?

A:-Lipoprotein Lipase

B:-Lactate Dehydrogenase

C:-Gamma glutamyl transpeptidase

D:-Alkaline phosphatase

Correct Answer:- Option-A

Question40:-Which of the following vitamin deficiencies make a patient prone to lactic acidosis ?

A:-Pyridoxine

B:-Thiamine

C:-Biotin

D:-Folic acid

Correct Answer:- Option-B

Question41:-Proteins which prevent inappropriate contact of nascent proteins with other proteins to ensure final proper confirmation of nascent protein is

A:-Ubiquitin

B:-Signal recognition particle

C:-Chaperones

D:-Assembly protein 1

Correct Answer:- Option-C

Question42:-Which of the following statement is/are true about ENaCs (Epithelial Sodium Channels) ?

- i. ENaC in kidney play an important role in regulation of ECF volume by aldosterone.
- ii. ENaCs are made up of two subunits encoded by different genes.
- iii. ENaC knockout mice are born alive but die as water collect in lungs.
- iv. ENaC's are inhibited by diuretic amiloride.

A:-Only i and ii

B:-Only i, ii and iv

C:-Only i, iii and iv

D:-All of the above i, ii, iii and iv

Correct Answer:- Option-C

Question43:-Which of the following statement is/are false about programmed cell death ?

- i. Cells's own genes play an active role in its demise.
- ii. A common process during development and adulthood.
- iii. Also called 'cell murder'.
- iv. Activation of a group of serine proteases is one of the final pathway common pathway that brings about programmed cell death.

A:-Only i and iv

B:-Only iii and iv

C:-Only ii and iv

D:-Only i and ii

Correct Answer:- Option-B

Question44:-Which of the following statement is/are true about interferon α ?

- i. Used to treat AIDS related Kaposi Sarcoma.
- ii. Promotes growth of granulocytes and monocytes and causes activation of macrophages.
- iii. Used to enhance killing of phagocytosed bacteria in chronic granulomatous diseases.
- iv. Causes induction of resistance of cells to viral infections.

A:-Only i and ii

B:-Only i and iv

C:-Only ii and iv

D:-Only i and iii

Correct Answer:- Option-B

Question45:-Which of the following statement is/are true about stages of erythropoiesis ?

- i. Nucleoli disappear in basophilic normoblast stage.
- ii. Cytoplasm of polychromatic normoblast contain mixture of basophilic RNA and acidophilic hemoglobin.
- iii. Mitotic activity disappears in polychromatic stage.
- iv. Ortho chromatic normoblast has scanty, deeply basophilic cytoplasm.

A:-Only i and iii

B:-Only ii and iv

C:-Only i and ii

D:-Only iii and iv

Correct Answer:- Option-C

Question46:-Which of the following statement is/are true about overdrive supression ?

- i. Results from activity of membrane $Na^+ - K^+$ ATPase.
- ii. Automaticity of pacemaker cells increases after these cells are excited at a higher frequency.
- iii. When an ectopic focus in atria with higher rate than SAN stops firing suddenly SAN will remain quiescent for some time due to overdrive suppression.
- iv. Results from activity of Ca^{2+} ATPase pump.

A:-Only i and iii

B:-Only i and ii

C:-Only iii and iv

D:-Only i, ii and iii

Correct Answer:- Option-A

Question47:-Which of the following statement is/are true about second heart sound ?

- i. Is composed of higher frequency vibrations is of short duration and lower intensity than first heart sound.
- ii. Portion of second heart sound caused by pulmonic valve closure is heard best at second thoracic interspace just to the left of sternum.
- iii. The aortic valve sound is generally louder than pulmonic.
- iv. The nature of second heart sound changes with respiration

A:-Only i and iv

B:-Only i, iii, iv

C:-Only ii, iii and iv

D:-All the above i, ii, iii, iv

Correct Answer:- Option-D

Question48:-Which of the following statement is/are true about atrial systole ?

- i. Contribution of atrial systole to ventricular filling is governed to a greater extent by heart rate and position of AV valve.
- ii. Onset of atrial systole occurs with beginning of 'P' wave of ECG.
- iii. Atrial systole is responsible for small increase in atrial, ventricular and venous pressures.
- iv. Transfer of blood from atria to ventricle by atrial contraction completes the period of ventricular filling.

A:-Only i, ii and iii

B:-Only i, ii and iv

C:-Only i, iii and iv

D:-Only ii, iii and iv

Correct Answer:- Option-C

Question49:-Which of the following statement is/are true about cardiac innervation ?

- i. Administration of atropine can increase heart rate from normal resting rate to 150-180 beats/mt.
- ii. Increase in force of contraction of heart on sympathetic stimulation is inotropic effect.
- iii. In humans in whom both noradrenergic and cholinergic systems are blocked,

heart rate is approximately 100 beats/mt.

iv. Sympathetic stimulation of heart increasing rate of transmission in cardiac conductive tissue is chronotropic effect.

A:-Only ii, iii and iv

B:-Only i, ii and iii

C:-Only i, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-B

Question50:-Which of the following statement is/are true about P-glycoprotein in cerebral capillaries ?

i. A multidrug nonspecific transports in apical membrane of endothelial cells.

ii. It is an ATP dependent efflux pump.

iii. Transports drugs and peptides that cross cerebral capillaries back into blood.

iv. Blocks various anticancer drugs from entering brain and tumor tissues.

A:-Only i, ii and iv

B:-Only ii, iii and iv

C:-All the above i, ii, iii and iv

D:-Only i and ii

Correct Answer:- Option-C

Question51:-Which of the following statement is/are false about Nitric oxide ?

i. Nitric oxide synthase 1 is found in endothelial cells and catalyze the reaction of synthesis of nitric oxide from Arginine.

ii. Flow induced dilatation in large arteries to tissues is due to local release of nitric oxide.

iii. Nitric oxide acting via cAMP is important in brain function.

iv. Nitric oxide is inactivated by hemoglobin through dioxygenation.

A:-Only i and iii

B:-Only i and iv

C:-Only ii and iv

D:-Only i and ii

Correct Answer:- Option-A

Question52:-Which of the following statement is/are true about ECG changes due to variation in ionic composition of blood ?

i. When plasma K^+ level rises (± 7.0 meq/l) first change is appearance of tall peaked 'T' wave

ii. Plasma K^+ level ± 8.5 meq/l causes prolongation of QRS complex with tall slender 'T' wave.

iii. Decrease in plasma K^+ may cause prominent 'u' wave and late 'T' inversion in precordial leads.

iv. Hypocalcemia causes prolongation of ST segment and QT interval.

A:-Only i, ii and iii

B:-All the above (i, ii, iii, iv)

C:-Only iii and iv

D:-Only ii, iii

Correct Answer:- Option-B

Question53:-Which of the following statement is/are true about low pressure baroreceptors in atria ?

- i. They are bare ends of myelinated nerve fibers.
- ii. They are mechanoreceptors that regulate effective circulating volume and cardiac output.'
- iii. Afferent fibers of atrial receptors project to medulla and hypothalamus.
- iv. Increased stretch of atrial B-type receptors like high pressure receptors decrease heart rate.

A:-i, ii and iii only

B:-i, ii and iv only

C:-Only ii, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-A

Question54:-Which of the following statement is/are true about vasovagal syncope ?

- i. Massive vasodilation occurs but resulting fall in blood pressure is not corrected by baroreceptor response.
- ii. There will be profound fall in Mean Arterial Blood Pressure.
- iii. Loss of consciousness is due to transient fall in perfusion pressure to brain.
- iv. The plasma Arginine Vasopression level is found to be decreased in vasovagal syncope.

A:-Only i, ii and iii

B:-Only i and ii

C:-Only i, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-A

Question55:-Which of the following statement is/are true regarding coronary circulation ?

- i. Receives 15% of cardiac output from left heart and mostly returns it to right heart.
- ii. Changes in heart rate will not affect coronary blood flow.
- iii. There is nearly linear correspondence between myocardial oxygen consumption and myocardial blood flow.
- iv. Heart relies primarily on metabolic mechanisms to increase caliber of coronary vessels.

A:-All the above i, ii, iii, iv

B:-Only iii and iv

C:-Only ii and iii

D:-Only i, iii and iv

Correct Answer:- Option-B

Question56:-Which of the following statement is/are true about non respiratory

functions of lung ?

- i. Angiotension converting enzyme is located in caveolae intracellulars on surface of pulmonary capillary endothelial cells and convert Angiotension I to Angiotension II.
- ii. Major site of inactivation of serotonin is lung and it is by enzymatic degradation.
- iii. Prostaglandins E1, E2 and F2 α are activated in lung.
- iv. Lung secretes IgA in bronchial mucus.

A:-All the above i, ii, iii and iv

B:-i, ii and iv only

C:-i and iv only

D:-ii and iii only

Correct Answer:- Option-C

Question57:-Which of the following statement is/are false ?

- i. V/Q decreases from top to bottom of lung.
- ii. Pulmonary capillary uptake of oxygen is complete in 0.50 sec.
- iii. 0.50 sec is the time available in pulmonary capillary for exchange of O_2 and CO_2 .
- iv. O_2 uptake in pulmonary capillary is usually perfusion limited, but partially diffusion limited also in diseased state.

A:-Only i and iii

B:-Only ii and iii

C:-Only iii and iv

D:-Only i and iv

Correct Answer:- Option-B

Question58:-Which of the following statement is/are true about long term adaptation to high altitudes ?

- i. Reduced arterial PO_2 triggers adaptations mainly mediated by increase in hypoxia inducible factor I.
- ii. Kidney excrete alkaline urine.
- iii. Expression of oxidative enzymes in mitochondria.
- iv. Right ventricular hypertrophy increases pulmonary arterial pressure increasing perfusion to well ventilated regions of lung.

A:-Only i and ii

B:-Only i, ii, iii

C:-Only i, iii and iv

D:-All the above i, ii, iii, iv

Correct Answer:- Option-C

Question59:-Which of the following statement is/are true about hypoxia ?

- i. In carbon monoxide poisoning arterial blood PO_2 remains normal.
- ii. In hypoperfusion hypoxia and histotoxic hypoxia, administration of oxygen rich gas mixture is of very limited value.
- iii. In carbonmonoxide poisoning death results when 70-80% of circulating hemoglobin is converted to COHb.
- iv. Most common form of hypoxia seen clinically is hypoxic hypoxia.

A:-Only i, ii and iii

B:-All the above i, ii, iii and iv

C:-Only i, ii and iv

D:-Only ii, iii and iv

Correct Answer:- Option-B

Question60:-Which of the following statement is/are true about pulmonary 'C' fiber receptor ?

- i. Impulses from these receptors pass up the vagus nerve in slowly conducting non myelinated fibers.
- ii. Stimulation results in rapid shallow breathing and even apnea.
- iii. Stimulation causes bronchodilation and decreases mucus secretion in airway.
- iv. Engorgement of pulmonary capillaries and increase in interstitial fluid volume of alveolar walls activate these receptors.

A:-Only i, ii and iii

B:-Only i, ii and iv

C:-Only ii, iii and iv

D:-Only i and ii

Correct Answer:- Option-B

Question61:-Which of the following statement is/are false about Forced Expiratory Volume ?

- i. FEV_1 is the volume of air that can be forcibly expired in first second.
- ii. The entire vital capacity can be forcibly expired in 3 seconds normally.
- iii. In normal individuals 90% of vital capacity can be forcibly expired in first second.
- iv. In fibrosis both FEV_1 and FVC decrease but FEV_1 is decreased less than FVC.

A:-Only iv

B:-Only iii and iv

C:-Only iii

D:-Only i and iv

Correct Answer:- Option-C

Question62:-Asphyxia is characterized by

- i. Acute hypoxia and hypercapnea develop together.
- ii. There is profound stimulation of respiration.
- iii. Catecholamine secretion increases and blood pH drops.
- iv. In 10% of drowning death results from asphyxia without water entry into lungs.

A:-Only i and ii

B:-All the above (i, ii, iii and iv)

C:-Only i, ii and iv

D:-Only i and iii

Correct Answer:- Option-B

Question63:-Which of the following statement is/are true about respiratory changes during exercise ?

- i. Arterial pCO_2 increases during most forms of exercise.
- ii. Arterial pO_2 usually increases slightly although it may fall at very high work out

levels.

iii. Arterial pH falls for mild to moderate exercise.

iv. On exercise increase in ventilation closely matches the increase in O_2 uptake and CO_2 output.

A:-Only i and ii

B:-Only i and iv

C:-Only ii, iii and iv

D:-Only ii and iv

Correct Answer:- Option-D

Question64:-Which of the following statement is/are true about peripheral chemoreceptors ?

i. The sensitivity of peripheral chemoreceptors to changes in arterial pO_2 begins around 500 mm of Hg.

ii. Response of peripheral chemoreceptors to arterial pO_2 is much less important than that of central chemoreceptors.

iii. Inhibition of Ca^{2+} channels leads to depolarization of glomus cells.

iv. In humans, the carotid but not aortic bodies respond to a fall in arterial pH .

A:-Only i, ii and iv

B:-Only i and iv

C:-Only ii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-B

Question65:-True statement about airway resistance is/are ?

i. Major site of resistance to airflow is medium sized bronchi.

ii. Tone of bronchial smooth muscles which is an important determinant of caliber of airways is under autonomic control.

iii. The relationship between lung volume and airway resistance is linear.

iv. Density and viscosity of gas that is breathed affects the pressure drop along the airway.

A:-Only ii and iii

B:-Only ii and iv

C:-Only i, ii and iii

D:-Only i, ii and iv

Correct Answer:- Option-D

Question66:-All are true regarding regulation of gastric secretion Except

A:-Histamine is the strongest agonist of H^+ secretion

B:-Parietal cells express CCK1 (cholecystokinin type 1) receptor for gastrin

C:-When pH of gastric lumen reaches below 3, somatostatin is released from endocrine cells in antral mucosa

D:-Acetyl choline binds to M_3 receptors and open Ca^{2+} channels in apical plasma membrane

Correct Answer:- Option-B

Question67:-Pancreatic α amylase is activated by

A:-Trypsin

B:- H^+ ion

C:- Cl^- ion

D:-Enteropeptidase

Correct Answer:- Option-C

Question68:-Which of the following statement is/are false about parts of renal tubule ?

i. Principal cells of collecting duct are large in number and have numerous mitochondria but intercalated cells of collecting duct are few and contain less number of mitochondria.

ii. Pars recta of PCT has cuboidal cells with densely packed microvilli called 'brush border' and high metabolic activity.

iii. The descending and ascending limb of loop of Henle have cells with very low level of metabolic activity.

iv. Thick ascending limb of loop of Henle has cuboidal epithelial cells with numerous mitochondria and short microvilli but no brush border.

A:-Only i and ii

B:-Only iii and iv

C:-Only i and iv

D:-Only i and iii

Correct Answer:- Option-A

Question69:- $Na^+K^+-2Cl^-$ cotransporter is present in which part of renal tubule ?

A:-Distal Convoluted Tubule

B:-Thick Ascending Limb of Loop of Henle

C:-Proximal Convoluted Tubule

D:-Connecting Tubule and Collecting Duct

Correct Answer:- Option-B

Question70:-Which of the following statement is/are true about regulation of body temperature ?

i. Free nerve endings act as specialized sensors for providing CNS with information about body's thermal condition.

ii. Hypothalamic cold receptors greatly outnumber warmth receptors.

iii. A one degree change in the core temperature produces a nine fold greater thermoeffector response.

iv. Increasing local temperature upto $44-46^\circ C$ causes warmth receptors to increase their steady firing rate.

A:-Only i and ii

B:-All the above i, ii, iii and iv

C:-Only i, iii and iv

D:-Only i, ii and iii

Correct Answer:- Option-C

Question71:-Which of the following statement is/are correct regarding the synthesis of thyroid hormone ?

- i. In the brain the enzyme D_2 thyroid deiodinase contributes to the formation of T_3
- ii. The thioureylenes promotes the iodination of monoiodotyrosine.
- iii. Large doses of iodide cause transient inhibition of organic binding of iodide.

A:-Only i and iii

B:-Only i and ii

C:-Only ii and iii

D:-All the above i, ii and iii

Correct Answer:- Option-A

Question72:-Following is/are true about insulin receptors Except

- i. The gene for the insulin receptor in human is located on chromosome 9.
- ii. All the insulin receptors are synthesized on a single mRNA.
- iii. They are found on many different cells in the body, including the cells in which insulin does not increase glucose uptake.
- iv. The β subunit of insulin receptor span the cell membrane

A:-Only i

B:-Only iii

C:-Only ii and iii

D:-Only iv

Correct Answer:- Option-A

Question73:-A 32 year old lady following labour developed severe postpartum haemorrhage and went into shock. After her recovery from shock she displays symptoms of hypopituitarism. Which of the following are expected in this patient.

- i. Pallor
- ii. Infertility
- iii. Cachexia
- iv. Low basal metabolic rate

A:-Only i and iii

B:-Only ii

C:-Only i, ii and iv

D:-All the above (i, ii, iii and iv)

Correct Answer:- Option-C

Question74:-A statement which is false regarding pheochromocytoma is

- i. Tumour caused by hyperplasia of either adrenal medullary tissue or extra adrenal chromaffin tissue.
- ii. Tumours can be benign or malignant.
- iii. Glucose intolerance is one of the clinical findings.
- iv. They make catecholamines, just like the normal medulla, except in an unregulated fashion.

A:-Only iii

B:-Only ii

C:-Only i

D:-None of the above

Correct Answer:- Option-D

Question75:-Which of the following statement is/are correct about Pseudohypoparathyroidism ?

- i. The key defect is an abnormality in a stimulatory β subunit of a heterotrimeric G protein.
- ii. The patient with this disorder have a high serum phosphate and a low serum calcium level.
- iii. There is increased circulating concentration of PHT.
- iv. They have an increased risk of hypothyroidism, as well as gonadal dysfunction in woman.

A:-Only ii, iii and iv

B:-Only i, ii and iv

C:-Only ii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-A

Question76:-Cryptorchidism may shows all the features except

- i. Degenerative changes in the tubular epithelium.
- ii. Abnormally formed testes.
- iii. Decreased secretion of testosterone.
- iv. Incidence of malignant tumours is less

A:-Only i

B:-Only ii

C:-Only iii

D:-Only iv

Correct Answer:- Option-D

Question77:-Which of the following is/are correct statement about Estrogens ?

- i. Naturally occurring estrogens are estrone, estriol and 17β -estradiol.
- ii. Biosynthesis depend on the enzyme aromatase.
- iii. Cause decreased secretion of angiotensinogen.
- iv. The "estrogen dominated" uterus is less sensitive to oxytocin.

A:-Only ii and iv

B:-Only i, iii and iv

C:-Only i and ii

D:-All the above i, ii, iii and iv

Correct Answer:- Option-C

Question78:-Effects of lower motor neuron lesion on erection and ejaculation are

- i. Reflexogenic erection
- ii. Psychogenic erection
- iii. Less impaired ejaculation

iv. Retrograde ejaculation

A:-Only i and iv

B:-Only i and iii

C:-Only ii and iv

D:-Only ii and iii

Correct Answer:- Option-D

Question79:-Statement which is/are true about the birth control pills are

i. Ethinyl estradiol and mestranol are approved for oral contraceptive use.

ii. Progestins like gestodene and norgestimate have high androgenic effects.

iii. Progestin only pills do not effectively inhibit ovulation as do the combination pills.

iv. Combination pills are more ideal for nursing mothers than progestin only pills.

A:-Only i and iii

B:-Only ii and iii

C:-Only ii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-A

Question80:-Which of the following statement is/are true about hyperprolactinemia Except ?

i. Chromophobe adenomas of the anterior pituitary can cause hyperprolactinemia.

ii. 15-20% of women with secondary amenorrhea have elevated prolactin levels.

iii. Hyperprolactinemia in men is associated with impotence and hypogonadism and is irreversible even when prolactin secretion is reduced.

iv. Most women with galactorrhea have high prolactin levels and a significant elevation is seen in more than 70% of the patients.

A:-Only i and iii

B:-Only ii and iii

C:-Only iii and iv

D:-Only iv

Correct Answer:- Option-C

Question81:-Statement which is/are false regarding Spermatogenesis.

i. Spermatogonia have the normal diploid complement of 46 chromosome.

ii. The secondary spermatocytes enter their second meiotic division slowly.

iii. Groups of spermatogonia at comparable stages of development undergo mitosis simultaneously.

A:-Only iii and iv

B:-Only ii

C:-Only iii

D:-None of the above

Correct Answer:- Option-B

Question82:-The complete development and the full function of seminiferous tubule

mainly depend on

A:-Androgen and FSH

B:-Oxytocin and LH

C:-LH and FSH

D:-Somatostatin and LH

Correct Answer:- Option-A

Question83:-Which of the following statement is/are true about the changes towards parturition ?

- i. Frequency of irregular uterine contractions decrease in the last month of pregnancy.
- ii. The increase in circulating estrogens produced by increased circulating DHEAS makes the uterus more excitable.
- iii. In early labor, the oxytocin concentration in the maternal plasma is not elevated from the pre labour value.
- iv. ACTH in the fetus probably triggers the onset of labor

A:-Only i and ii

B:-Only i, ii and iv

C:-Only ii, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-C

Question84:-Features of Menopausal syndrome includes

- i. Vasomotor instability
- ii. Hot flushes and Night sweats
- iii. Headaches
- iv. Short term memory loss

A:-Only i, ii and iii

B:-Only ii, iii and iv

C:-Only ii and iii

D:-All the above i, ii, iii and iv

Correct Answer:- Option-D

Question85:-Statement which is/are false about Chiari-Frommel syndrome.

- i. Persistence of galactorrhea and amenorrhea in a woman who do not nurse after delivery
- ii. May be associated with some genital atrophy
- iii. Persistent prolactin secretion
- iv. There is no secretion of LH and FSH

A:-Only i

B:-Only ii

C:-Only iv

D:-None of the above

Correct Answer:- Option-D

Question86:-Declarative memory include all the below Except

- i. Memory of the meaning of the experience.
- ii. Memory of causes of he experience.
- iii. Memory of relationship and speed of the ball to the racquet while playing tennis.
- iv. Memory of one's deductions that were left in the person's mind.

A:-Only i

B:-Only iii

C:-Only iv

D:-Only iii and iv

Correct Answer:- Option-B

Question87:-Which of the following statement is/are correct about Thermoreceptors ?

- i. Innocuous cold receptors or cool receptors are on dendritic endings of A delta fibers and C fibers.
- ii. Innocuous warmth receptors are on dendritic endings of C fibers.
- iii. There are 4-10 times as many cold sensitive as heat sensitive spots on the skin.
- iv. The thershold for activation of warmth receptor is 30°C and below 10°C cold receptors are inactive

A:-Only i, ii and iii

B:-Only i and iii

C:-Only ii, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-D

Question88:-Which of the following is the definitive sign of Alzheimer disease ?

A:-Loss of short term memory

B:-A loss of cholinergic neurons in the nucleus basalis of Meynert

C:-The presence of intracellular neurofibrillary tangles and extracellular neuritic plaques with a core of β -amyloid peptides

D:-A mutation in genes for amyloid precursor proteins on chromosome 21

Correct Answer:- Option-C

Question89:-Nucleus tractus solitarii receives inputs from all the below Except

- i. Medullary raphe and Area postrema.
- ii. Periaqueductal gray and Parabrachial nucleus.
- iii. Facial nerve and Trigeminal nerve.
- iv. Forebrain nuclei and Reticular formation

A:-Only i and iv

B:-Only ii

C:-Only iv

D:-Only iii

Correct Answer:- Option-C

Question90:-A 40 year old lady while riding as scooter met with a road traffic

accident and was brought to the casualty. She was unconscious and there was severe bleeding from her nose. Her CT scan showed severe intracranial hemorrhage. The symptoms she might experience are depend on the area of the brain which is most affected. Regarding this situation which of the following statement is wrong ?

A:-Damage to the angular gyrus in the categorical hemisphere cause nonfluent aphasia

B:-Damage to the mammillary bodies cause loss of recent memory

C:-Damage to the parietal lobe of the right hemisphere cause unilateral inattention and neglect

D:-Damage to Broca's area in the categorical hemisphere cause slow speech

Correct Answer:- Option-A

Question91:-Which of the following statement is/are true about pain suppression system ?

i. Electrical stimulation in the periaqueductal gray area can suppress many strong pain signals entering by way of the dorsal spinal roots.

ii. Electrical stimulation in the raphe magnus nucleus can suppress many strong pain signals entering by way of the dorsal spinal roots.

iii. Stimulation of the periventricular nuclei in the hypothalamus lying adjacent to the third ventricle can suppress pain.

iv. Stimulation of medial forebrain bundle in the hypothalamus can suppress pain.

A:-Only i, ii and iii

B:-Only ii, iii and iv

C:-Only i, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-D

Question92:-Examples of descending cortical control of autonomic output includes all the below Except

A:-Fear : initiate fight or flight response

B:-Chronic stress : can lead to peptic ulcers from increased gastric acid secretion

C:-Cognitive activity : can initiate sexual arousal

D:-Hypercapnia : cause increase in the rate of respiration

Correct Answer:- Option-D

Question93:-Which of the following statement is/are false about endocochlear potential ?

i. An electrical potential of about + 40 millivolts exist all the time between endolymph and perilymph.

ii. Positivity is inside the scala media and negativity is outside.

iii. It is generated by continual secretion of positive potassium ions into the outside of scala media by the striae vascularis.

iv. The importance of the endocochlear potential is that the tops of the hair cells project through the reticular lamina and are bathed by the endolymph of scala media, whereas perilymph bathes the lower bodies of hair cells.

A:-Only ii

B:-Only iii

C:-Only i and iii

D:-Only iii and iv

Correct Answer:- Option-C

Question94:-Which of the following is/are correct statement about Olfactory receptors ?

i. Dendrites of each neuron terminates in a knob containing 12 to 20 cilia.

ii. The cilia are unmyelinated process of about 5-10 μm in length.

iii. Human olfactory epithelium contains 10-15 million of bipolar olfactory sensory neurons.

iv. The cilia contains specific receptors for odorants.

A:-Only i and iii

B:-Only ii and iii

C:-Only ii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-C

Question95:-A 45 year old man who suffering from fever and sore throat was found positive for Covid-19 RT-PCR blood test. He also complained about diminished taste sensation. Which of following statement is/are wrong about taste sensation ?

i. Dysgeusia causes a metallic, salty, foul or rancid taste.

ii. Taste disturbances can also occur under conditions in which serotonin and norepinephrine levels are altered.

iii. Administration of a 5-HT reuptake inhibitor reduces bitter taste and sour thresholds.

iv. Administration of a norepinephrine reuptake inhibitor reduces sensitivity to sweet and bitter taste.

A:-Only ii

B:-Only iii and iv

C:-Only iii

D:-None of the above

Correct Answer:- Option-B

Question96:-Congenital myasthenic syndrome can affect neuromuscular transmission by following ways.

i. AchE deficiency.

ii. Abnormal presynaptic release of Ach.

iii. Defective AchR function.

iv. Mutation in the α subunit of the human AchR.

A:-Only i, ii and iii

B:-Only ii, iii and iv

C:-Only iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-A

Question97:-Which of the following is/are correct statement about striations of skeletal muscles ?

- i. In striated muscle, thin filaments are 5 to 8 nm in diameter and 1 μm in length.
- ii. Thin filaments are tethered together at both ends where they project from a dense disk known as the Z disk.
- iii. Thick filaments are 10 nm in diameter and 1.6 μm in length.
- iv. Z disk is visible as a dark perpendicular line at the center of the I band.

A:-Only ii, iii and iv

B:-Only i, ii and iii

C:-Only i, iii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-C

Question98:-Following statement is/are wrong about the factors determining Osmotic pressure.

- i. The number of particles per unit volume of fluid.
- ii. The mass of the particles per unit volume of fluid.
- iii. The large particles, which have greater mass than small particles, move at higher velocities.
- iv. Molar concentration is the solution.

A:-Only ii and iii

B:-Only iv

C:-Only i and iii

D:-None of the above

Correct Answer:- Option-A

Question99:-The Donnan effect on the distribution of ions has following effects in the body.

- i. Because of charged proteins in plasma, there are more osmotically active particles in the plasma than in cells.
- ii. Normal cell volume and pressure depend on Na, K ATPase.
- iii. Because at equilibrium the distribution of permanent ions across the membrane is asymmetric, an electrical difference exist across the membrane whose magnitude can be determined by the Nerst equation.
- iv. Because there are more proteins in the plasma than in interstitial fluid, there is a Donnan effect on ion movement across the capillary wall.

A:-Only i and iii

B:-Only ii, iii and iv

C:-Only ii and iv

D:-All the above i, ii, iii and iv

Correct Answer:- Option-B

Question100:-Which of the following is/are correct statement about treatment of renal failure by dialysis ?

- i. The maximum rate of solute transfer occurs in the middle of dialysis.
- ii. The total amount of blood in the artificial kidney at any one time is usually less

than 500 ml.

iii. Hydrostatic pressure shouldn't be increased, so that mass transfer of solutes and water will not occur.

iv. If the concentration of a substance is greater in the plasma than in the dialysing fluid, there will be a net transfer of the substance from the plasma into the dialysing fluid.

A:-Only ii and iv

B:-Only i, iii and iv

C:-Only ii and iii

D:-None of the above

Correct Answer:- Option-A