

PROVISIONAL ANSWER KEY

Question 107/2023/OL

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Code:

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Department Medical Education

Question1:-The molecular biology technique where RNA is converted to cDNA and then amplified is

A:-RT-PCR

B:-RFLP

C:-FISH

D:-Northern Blotting

Correct Answer:- Option-A

Question2:-Nucleic acid probes can be used for

A:-Prenatal diagnosis of sickle cell anemia

B:-Detection of CMV virus in patient samples

C:-Detection of Philadelphia chromosome

D:-All of the above

Correct Answer:- Option-D

Question3:-In SDS-PAGE

A:-The separating gel has larger pore size than stacking gel

B:-The stacking gel has larger pore size than separating gel

C:-The stacking gel and separating gel do not differ in pore size but differ in pH of the buffer

D:-SDS is used only for preparing the separating gel

Correct Answer:- Option-B

Question4:-The concept of real time PCR came because

A:-The ability to volatise the sample in a nebulizer

B:-The development of dot-blot methods

C:-Development of chain ligase reaction

D:-Taq polymerase has 5' to 3' exonuclease activity

Correct Answer:- Option-D

Question5:-In HPLC the resulting bands in the chromatogram are measured by

A:-Ruler

B:-Mass spectrometer

C:-Densitometer

D:-Two-dimensional electrophoresis

Correct Answer:- Option-B

Question6:-In a chromatographic instrument selective separation of a mixture occurs in

A:-Mass analyser

B:-Spectrometer

C:-Column

D:-Sample injection port

Correct Answer:- Option-C

Question7:-Drug of abuse can be measured by

A:-Thin layer chromatography

B:-Gas/liquid chromatography

C:-Size exclusion chromatography

D:-Paper chromatography

Correct Answer:- Option-B

Question8:-Mass spectrometer identifies analytes based on

A:-Mass: charge ratio

B:-Retention factor

C:-Density of the band

D:-Molecular weight

Correct Answer:- Option-A

Question9:-In atomic absorption spectroscopy with what material is the cathode in hollow cathode lamp made?

A:-Tungsten

B:-Cadmium

C:-Element to be analysed

D:-Deuterium

Correct Answer:- Option-C

Question10:-Prussian Blue stain is used for staining which of the following metals?

A:-Iron

B:-Copper

C:-Selenium

D:-Zinc

Correct Answer:- Option-A

Question11:-The Phenomenon by which an organic compound becomes excited when oxidised and emit light when it returns to ground state is

A:-Fluorescence

B:-Nephelometry

C:-Phosphorescence

D:-Luminescence

Correct Answer:- Option-D

Question12:-Regarding fluorometry which among these is true

A:-Emission wavelenths are always set at a lower wavelength than excitation

B:-The detector is always placed at right angle to excitation beam

C:-Fluorescence is more sensitive technique than absorption

D:-All of the above

Correct Answer:- Option-D

Question13:-The most sensitive detector in spectrophotometry is

A:-Photomultiplier

B:-Phototube

C:-Photocell

D:-Photodiode array

Correct Answer:- Option-D

Question14:-Which of the following is true about Haemotoxylin and Eosin staining?

A:-Hematoxylin is a basic dye and binds to nucleic acids in the nucleus and imparts a blue color

B:-Eosin is a basic dye and binds to the nucleic acids in the nucleus and imparts a blue color

C:-Both 1 and 2 are correct

D:-None of the above

Correct Answer:- Option-A

Question15:-What is the ideal section thickness for preparing routine H and E stained sections?

A:-1-2 microns

B:-8-10 microns

C:-6-8 microns

D:-3-5 microns

Correct Answer:- Option-D

Question16:-Which among the following is true about reverse phase liquid chromatography/

A:-Separation is based on charge instead of size

- B:-Polar mobile and non-polar stationary phase
- C:-Non-polar mobile and polar stationary phase
- D:-Separation is based on size instead of charge

Correct Answer:- Option-C

Question17:-What do you mean by bright field microscope?

- A:-The microscope uses natural light
- B:-The microscope is lit from above and viewed from below
- C:-The microscope is lit from below and viewed from above
- D:-None of the above

Correct Answer:- Option-C

Question18:-The magnifying power of an eye piece in microscope is

- A:-10X
- B:-20X
- C:-40X
- D:-60X

Correct Answer:- Option-A

Question19:-Which among the following types of microscope does not require staining to view the slide?

- A:-Electron microscope
- B:-Phase contrast microscope
- C:-Light microscope
- D:-Dark field microscope

Correct Answer:- Option-B

Question20:-Which among the following represents the correct stages of tissue processing?

- A:-Fixation-dehydration-clearing-infiltration-embedding
- B:-Fixation-clearing-dehydration-infiltration-embedding
- C:-Clearing-fixation-dehydration-infiltration-embedding
- D:-Embedding-dehydration-fixation-infiltration-clearing

Correct Answer:- Option-A

Question21:-All are true regarding active site of an enzyme except

- A:-The active site of an enzyme is relatively small compared with the total volume of the enzyme molecule
- B:-Active sites of enzymes are three dimensional structures that are formed as a result of the overall tertiary structure of the protein
- C:-Enzyme is bound to its substrate by covalent and noncovalent forces
- D:-Active sites are noted in clefts and crevices in the protein which exclude

bulk solvent and reduces the catalytic activity of the enzyme

Correct Answer:- Option-C

Question22:-Select the statement that is correct.

A:-Enzymes can facilitate the rate of reaction by binding very tightly to the substrate

B:-Enzymes often lower the activation energy by destabilizing transition state intermediates

C:-Enzyme can facilitate the rate of reaction by preventing the substrates from changing its ionic state

D:-The presence of an enzyme has no effect on ΔG°

Correct Answer:- Option-D

Question23:-Turn over number $K_{(cat)}$

A:-Has units of 1/time

B:-Has units of substrate concentration

C:-Is a ratio of the rate constants for the formation of ES and of product

D:-For a homogenous enzyme catalytic activity is calculated by dividing V_{max} by protein concentration

Correct Answer:- Option-A

Question24:-All are enzymes used as therapeutic agents except

A:-Streptokinase

B:-Papain

C:-Urokinase

D:-Uricase

Correct Answer:- Option-D

Question25:-All statements regarding isoenzymes are correct except

A:-Chemically and immunologically distinct forms of an enzyme

B:-Same forms with similar physical properties

C:-Catalyzes same reaction

D:-Same quaternary structure

Correct Answer:- Option-B

Question26:-All are regarding the Michaelis constant (K_m) except

A:-The K_m value is substrate concentration at half maximal velocity

B:- K_m is independent of enzyme concentration

C:-At high concentration of substrate $[S] \gg K_m$, the velocity of the reaction is proportional to the substrate concentration and the rate of the reaction is said to be first order

D:- K_m denotes the affinity of enzyme for substrate

Correct Answer:- Option-C

Question27:-Which of the following statement(s) is/are correct about allosteric regulation?

- (i) Allosteric effectors can change either the K_m or the of the reaction or the V_{max} of the reaction
- (ii) Homotropic interactions are always positive
- (iii) Most allosteric enzymes bind the allosteric effector with no effect on binding other ligands

A:-Only (i) and (ii)

B:-Only (ii) and (iii)

C:-Only (i) and (iii)

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

Correct Answer:- Option-A

Question28:-All are used as immobilized enzymes except

A:-Urease

B:-Horse raddish peroxidase

C:-Trypsin

D:-Leucine Amino Peptidase

Correct Answer:- Option-B

Question29:-Which of the following statements is/are correct?

- (i) The protein part of the enzyme is the prosthetic group
- (ii) The prosthetic group of the enzyme is called the co enzyme
- (iii) Co enzyme is a low molecular weight organic substance

A:-(i) and (ii)

B:-(ii) and (iii)

C:-(i) and (iii)

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

Correct Answer:- Option-B

Question30:-An example of a lyase is

A:-Acetyl CoA carboxylase

B:-Trypsin

C:-Glycogen synthase

D:-Aldolase

Correct Answer:- Option-D

Question31:-All are true regarding enzyme inhibition except

A:-Reversible inhibition of an enzyme may be competitive uncompetitive or mixed

B:-Irreversible inhibitors bind permanently to the active site by forming a covalent bond or a very stable non covalent interaction

C:-Transition State analogues are molecules that bind to an enzyme tightly at a site distinct from the active site

D:-Mixed inhibitors bind to either E or ES at a site distinct from the active site

Correct Answer:- Option-C

Question32:-Which of the following statement(s) about immunochemical methods of isoenzyme analysis is/are correct?

- (i) Are particularly applicable to isoenzymes derived from multiple gene loci
- (ii) The greater discriminating power of monoclonal antibodies has potentially brought all multiple forms of an enzyme within the scope of immuno chemical analysis
- (iii) The most common routine methods to measure isoenzymes or isoforms are now based on immunochemical assays

A:-i and ii

B:-ii and iii

C:-i and iii

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

Correct Answer:- Option-D

Question33:-Lineweaver-Burk plot is derived from

A:-Reciprocal of substrate concentration against reciprocal of velocity

B:-Substrate concentration against V_{max}

C:- K_m against initial velocity

D:-Reciprocal of initial velocity against substrate concentration

Correct Answer:- Option-A

Question34:-Example of enzyme induction is

A:-Glycogen Phosphorylase by glucagon

B:-Tryptophan pyrrolase by glucocorticoids

C:-ALA synthase by heme

D:-None of the above

Correct Answer:- Option-B

Question35:-An enzyme which undergo covalent modification by acetylation is

A:-Acetyl CoA carboxylase

B:-Glycogen synthase

C:-Long chain acyl CoA dehydrogenase

D:-Aspartate Trans carbamoylase

Correct Answer:- Option-C

Question36:-The pattern of appearance of an enzyme in blood after an acute injury depends on

A:-The intracellular location and whether molecules are bound or free

B:-Molecular weight

C:-The rate of elimination from blood

D:-All of the above

Correct Answer:- Option-D

Question37:-Testing of AST in addition to ALT should be limited because

A:-ALT is more liver-specific enzyme

B:-Increase of ALT activity persists longer than AST

C:-The incremental benefit for routine determination of AST in addition to ALT is limited

D:-All of the above

Correct Answer:- Option-D

Question38:-Which of the following statement(s) is/are true regarding pancreatic enzymes in acute pancreatitis?

(i) Lipase measurement is superior to pancreatic amylase in terms of Diagnostic performance

(ii) It is recommended that lipase replace pancreatic amylase as initial test for acute pancreatitis

(iii) The measurement of total amylase is recommended

A:-i and ii only

B:-ii and iii only

C:-i and iii only

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

Correct Answer:- Option-A

Question39:-True statement regarding unit of enzyme activity

A:-The international system of unit for catalytic activity is expressed in terms of units per liter U/L

B:-The international system of units derived units for catalytic activity is International Unit (U)

C:-The international system of units derived units for catalytic activity is Katal

D:-None of the above

Correct Answer:- Option-C

Question40:-All are examples of riboenzymes except

A:-Spliceosome

B:-RNAase-P

C:-Transposase

D:-Peptidyl transferase

Correct Answer:- Option-C

Question41:-Which of the following is FALSE regarding EDTA contamination of blood sample?

A:-Increased potassium

B:-Increased magnesium

C:-Decreased calcium

D:-Decreased alkaline phosphatase

Correct Answer:- Option-B

Question42:-All the following statements are TRUE regarding control materials EXCEPT

A:-Should be available in aliquots or vials

B:-Should be available in a stable form

C:-Should have a non-protein matrix when serum is the test material to be analyzed

D:-Should be available for analysis for an extended time

Correct Answer:- Option-C

Question43:-A gaussian curve is usually

A:-Sigmoid

B:-Rectangular

C:-Bell shaped

D:-Skewed

Correct Answer:- Option-C

Question44:-Choose the INCORRECT statement regarding quality assessment in a health care laboratory

A:-It emphasizes on test utility

B:-It emphasizes on statistical quality control procedures

C:-It is concerned with patient identification and specimen identification

D:-It is concerned with laboratory performance like turnaround time

Correct Answer:- Option-B

Question45:-Systematic errors in lab. analytic processes can occur due to all the following EXCEPT

A:-Unstable calibrating solutions

B:-Lack of stability of reagent blanks

C:-Lack of reproducibility in the pipetting of samples and reagents

D:-Inadequate sample blanks

Correct Answer:- Option-C

Question46:-Quality control measures are used to minimize

A:-Errors arising from incorrect sample processing

B:-Analytical errors

C:-Preanalytical errors

D:-Post analytical errors

Correct Answer:- Option-B

Question47:-All the following are measures of central tendencies EXCEPT

A:-Mean

B:-Mode

C:-Range

D:-Median

Correct Answer:- Option-C

Question48:-Westgard rule where control values are lying on one side of the mean should likely correspond with all EXCEPT

A:- 4_{1S}

B:- $10_{\bar{x}}$

C:- 2_{2S}

D:- R_{4S}

Correct Answer:- Option-D

Question49:-Levy Jennings chart is used for

A:-Assessing POCT device malfunctioning

B:-Validation of laboratory reports generated from the automated clinical chemistry analyzer

C:-Interpreting external quality assurance scheme report

D:-None of the above

Correct Answer:- Option-B

Question50:-POCT devices are all except

A:-Glucometer

B:-ABG analyzer

C:-Automated clinical chemistry autoanalyzer

D:-Pregnancy testing Kit

Correct Answer:- Option-C

Question51:-Which of the following DO NOT come under OSHA law and standards?

A:-OSHA inspectors have no authority to enter a clinical laboratory unannounced and inspect it

B:-Employers must keep accurate records of work related injuries and illness

C:-Workers can participate in OSHA inspection and speak in private with the inspector

D:-Each clinical laboratory is responsible for designating a safety officer

Correct Answer:- Option-A

Question52:-GLP certificate for laboratories in India is granted by

A:-NCCLS

B:-OECD

C:-NGCMA

D:-HCFA

Correct Answer:- Option-C

Question53:-All of the following are TRUE about External Quality Control (EQC) except

A:-It mainly check accuracy

B:-It is an intralaboratory comparison

C:-SDI is used for EQC

D:-It is a Proficiency testing program

Correct Answer:- Option-B

Question54:-Quality assurance scheme is necessary for

A:-Customer satisfaction

B:-Correct reporting

C:-Meeting quality standards

D:-All of the above

Correct Answer:- Option-D

Question55:-Choose the correct statement

A:-Post-prandial blood glucose should be measured after 2 hours post dinner

B:-Incorrect data entry of lab tests is an analytical error

C:-Preanalytical errors are commoner than post analytical errors

D:-Barcoding prevents post analytical errors

Correct Answer:- Option-C

Question56:-The first enzyme to appear in the blood after a heart attack is

A:-SGOT

B:-SGPT

C:-Creatine Phospho Kinase

D:-Lactate Dehydrogenase

Correct Answer:- Option-C

Question57:-"Cardiomegalia glycogenica" is a characteristic of which of the following Glycogen Storage Diseases (GSDs)

A:-Type I GSD

B:-Type II GSD

C:-Type III GSD

D:-Type IV GSD

Correct Answer:- Option-B

Question58:-Regulation of the electrolyte content of the body fluids is done by

- A:-Liver
- B:-Kidney
- C:-Brain
- D:-Spleen

Correct Answer:- Option-B

Question59:-In humans, the renal threshold for glucose per 100 ml of blood is

- A:-80 mg
- B:-120 mg
- C:-180 mg
- D:-250 mg

Correct Answer:- Option-C

Question60:-The phenomena of "Insulin resistance" is characteristic of

- A:-Type I Diabetes Mellitus
- B:-Type II Diabetes Mellitus
- C:-Both Type I and Type II diabetes mellitus
- D:-Diabetes Insipidus

Correct Answer:- Option-B

Question61:-Jaundice (Icterus) occurs due to

- A:-Overproduction of bilirubin
- B:-Failure of bilirubin excretion
- C:-Biosynthesis of Bile pigment
- D:-Overproduction or failed excretion of bilirubin

Correct Answer:- Option-D

Question62:-"Inulin Clearance Test" is used to estimate

- A:-Urine flow rate
- B:-Urine obstruction in Kidneys
- C:-Glomerular Filtration Rate
- D:-Clearance rate of blood impurity

Correct Answer:- Option-C

Question63:-In HbA1C test for determining the severity of Diabetes, the glucose binds predominantly to which to amino acid of hemoglobin?

- A:- β -Val-1, β -Lys-66, α -Lys-61
- B:- α -Val-1, β -Lys-66, β -Lys-61
- C:- β -Val-11, β -Lys-66, α -Lys-6
- D:- α -Val-11, β -Lys-66, β -Lys-6

Correct Answer:- Option-A

Question64:-Lactate Dehydrogenase 5 (LDH-5 or M4) elevation in blood is indicative of

A:-Myocardial Infarction

B:-Megaloblastic anemia

C:-Renal Infarction

D:-Liver Cirrhosis

Correct Answer:- Option-D

Question65:-Assertion A: A bone marrow aspirate of a strictly vegetarian female, confirms the suspicion that she has a megaloblastic anemia because it showed a greater than normal number of red and white blood cell precursors, most of which were larger than normal.

Reason R: Megaloblastic anemia mostly occurs due to Vitamin B12 deficiency also called as Cobalamin

In the light of the above statements, Choose the correct answer from the options given below:

A:-Both A and R are true and R is the correct explanation of A

B:-Both A and R are true but R is NOT the correct explanation of A

C:-A is true but R is false

D:-A is false but R is true

Correct Answer:- Option-A

Question66:-Assertion A: In a 30 year-old man fasting for several days, his brain reduces its need for glucose by using an alternate source of energy.

Reason R: Beta hydroxy butyrate is used as an alternate source of energy due to ketoacidosis.

In the light of the above statements, choose the correct answer from the options given below:

A:-Both A and R are true and R is the correct explanation of A

B:-Both A and R are true but R is NOT the correct explanation of A

C:-A is true but R is false

D:-A is false but R is true

Correct Answer:- Option-A

Question67:-Statement I : During acute Myocardial Infarction, the test of Cardiac troponins, Serum myoglobin and Creatine Phospho kinase-MB (CPK-MB) can give the conclusive diagnosis.

Statement II : During acute Myocardial Infarction, the test of Blood pressure, Lactate dehydrogenase and Choline esterase can give the conclusive diagnosis.

In the light of the above statements, choose the most appropriate answer from the options given below :

A:-Both Statement I and Statement II are correct

B:-Both Statement I and Statement II are incorrect

C:-Statement I is correct but Statement II is incorrect

D:-Statement I is incorrect but Statement II is correct

Correct Answer:- Option-C

Question68:-Identify correct statements about Glycogen and its storage disorders

1. Glycogen is the major storage carbohydrate of animals and a branched polymer of α -D-Glucose
2. it occurs mainly in liver (upto 6%) and muscle where it rarely exceeds 1% of its weight
3. liver glycogen is the readily available source of glucose for glycolysis.
4. liver contains 3 to 4 times as much glycogen as does muscle
5. Glycogen Storage Diseases (GSDs) are inherited disorders with abnormal deposition and deficient mobilization of glycogen.

Choose the correct answer from the options given below :

A:-2, 4, and 1 only

B:-1, 2 and 5 only

C:-2 and 3

D:-4, 3 and 5 only

Correct Answer:- Option-B

Question69:-In Jaundice (Icterus) excessive bilirubin catabolism and clearance occurs in the following sequence

1. bilirubin formed in peripheral tissues is transported to the liver by plasma albumin
2. bilirubin is conjugated with glucuronic acid by Bilirubin-UGT activity
3. Uptake of bilirubin by liver parenchymal cells through facilitated transport system
4. Secretion of conjugated Bilirubin into Bile by an active transport mechanism
5. Bilirubin is derived from hemoglobin destruction, ineffective erythropoiesis and from other heme proteins like cytochrome P450

choose the correct answer from the options given below :

A:-5, 1, 3, 2, 4

B:-3, 2, 4, 1, 5

C:-4, 5, 2, 1, 3

D:-5, 1, 3, 4, 2

Correct Answer:- Option-A

Question70:-Insulin is released into the blood stream in response to hyperglycemia

1. ATP sensitive K^+ channels are inhibited causing membrane depolarization
2. There is influx of Ca^{2+} ions within the β cells
3. There is exocytosis of insulin into the blood
4. The β cells of the Islets of Langerhans are freely permeable to glucose via. GLUT-2 receptors
5. Glucose increases the metabolic flux and increases ATP production in the β

cells

Choose the correct answer from the options given below :

A:-4, 5, 1, 2, 3

B:-3, 2, 4, 1, 5

C:-4, 5, 2, 1, 3

D:-2, 1, 3, 4, 5

Correct Answer:- Option-A

Question71:-Ketosis that occurs in diabetic patients involve

A:-Overproduction of volatile acids in the blood

B:-Overproduction of ethyl alcohol in the blood

C:-Overproduction of Acetoacetate and β -hydroxybutyrate

D:-Overproduction of glucose in the blood

Correct Answer:- Option-C

Question72:-**Assertion A** : Citrate anticoagulants have an important advantage over the oxalate anticoagulants

Reason R : Oxalate is toxic to the body, whereas moderate quantities of citrate can be injected intravenously.

A:-Both A and R are true and R is the correct explanation of A

B:-Both A and R are true but R is NOT the correct explanation of A

C:-A is true but R is false

D:-A is false but R is true

Correct Answer:- Option-B

Question73:-Identify correct statements about blood clotting and anticoagulants :

1. The anticoagulant of choice for blood cell counts is EDTA
2. The anticoagulant suitable for storing blood for transfusion is dextrose, phosphate and citrate
3. Anticoagulants are also called as Vasodilators
4. In an anticoagulated specimen, the liquid part separated out from the blood is called as serum
5. Heparin inhibits the conversion of prothrombin to thrombin.

Choose the correct answer from the options given below :

A:-3, 2, 1, and 1 only

B:-2 only

C:-1, 2 and 5 only

D:-4, 3 and 5 only

Correct Answer:- Option-C

Question74:-The functions of the synovial fluid includes all of the following except

A:-Lubrication for the joints

- B:-Removal of cartilage debris
- C:-Cushioning joints during jogging
- D:-providing nutrients for cartilage

Correct Answer:- Option-B

Question75:-Reverse Cholesterol Transport primarily involves

- A:-Chylomicrons
- B:-Very low Density Lipoproteins (VLDLs)
- C:-Low Density Lipoproteins (LDLs)
- D:-High Density Lipoproteins (HDLs)

Correct Answer:- Option-D

Question76:-Choose the hormones which are nonapeptides

- A:-Oxytocin and Antidiuretic hormone
- B:-Growth hormone and Adrenocorticotrophic hormone
- C:-Thyroid stimulating hormone and Melanocyte stimulating hormone
- D:-Epinephrine and Norepinephrine

Correct Answer:- Option-A

Question77:-Find out the incorrect match : (Hormone – Signalling Pathway)

- A:-Insulin – Tyrosine protein kinase
- B:-Growth hormone – Jak Stat pathway
- C:-Prolactin – Tyrosine protein kinase
- D:-Catecholamines – G protein linked cAMP Pathway

Correct Answer:- Option-C

Question78:-Which is the hormone that require parenchymal cells of more than one organ for its synthesis?

- A:-Calcitriol
- B:-Calcitonin
- C:-Glucagon like peptide - 1
- D:-Growth hormone

Correct Answer:- Option-A

Question79:-All the following hormones with common alpha sub units but with different beta subunit, except

- A:-Thyroid stimulating hormone
- B:-Follicle stimulating hormone
- C:-Luteinizing hormone
- D:-Thyrotropin releasing hormone

Correct Answer:- Option-D

Question80:-The substrate of aromatase enzyme complex

A:-Pregnenolone and Progesterone

B:-Cholesterol and 7 dehydro cholesterol

C:-Testosterone and androstenedione

D:-17 α - Hydroxypregnenolone and 7 α
- Hydroxypregnenolone

Correct Answer:- Option-C

Question81:-All the following hormones are synthesized from Tyrosine, except

A:-Thyroid stimulating hormone

B:-Thyroxine

C:-Epinephrine

D:-Norepinephrine

Correct Answer:- Option-A

Question82:-Acute decrease in the level of plasma ionized calcium stimulates the synthesis and secretion of

A:-Calcitriol

B:-Parathyroid hormone

C:-Calcitonin

D:-Calbindin

Correct Answer:- Option-B

Question83:-Antiotensin-Converting Enzyme (ACE) inhibitors are used to treat renin dependent hypertension because

A:-Inhibition of ACE block the conversion of angiotensin 1 to angiotension II

B:-Inhibition of ACE block the formation of angiotensinogen

C:-Inhibition of ACE promote release of renin

D:-Inhibition of ACE decrease aldosterone release

Correct Answer:- Option-A

Question84:-Tyrosyl residues in thyroglobulin are iodinated to form thyroid hormones but iodinated free tyrosine cannot be incorporated into thyroglobulin to form thyroid hormones : Why?

A:-There are no tRNA in the body which recognizes iodinated tyrosine

B:-Free tyrosine cannot be iodinated

C:-Transcription of thyroglobulin blocked by iodinated free tyrosine

D:-Both 2 and 3

Correct Answer:- Option-A

Question85:-The hormone that is not produced from a larger peptide precursor

A:-Insulin

B:-Parathyroid hormone

C:-Epinephrine

D:-Adrenocorticotrophic hormone

Correct Answer:- Option-C

Question86:-Choose the correct matching sequence related to hormone action :
(Hormone –Hormone action via)

A:-Somatostatin – Hormone response element on specific region of DNA

B:-Insulin – Activation of tyrosine kinase activity

C:-Glucagon – Inhibit adenyl cyclase

D:-Glucocorticoid –Stimulate adenyl cyclase

Correct Answer:- Option-B

Question87:-Different hormones and their urinary metabolites, useful to diagnose related disorders are given below. Find out the mismatch

A:-Catecholamines → Vanillylmandelic acid → Pheochromocytoma

B:-Dopamine → Vanillylmandelic acid → Meningioma

C:-Serotonin → hydroxy indole acetic acid→ Carcinoid tumour

D:-Dopamine → Vanillylmandelic acid → Homovanillic acid → Neuroblastoma

Correct Answer:- Option-B

Question88:-The following are hormones of adipose tissue, except

A:-Ghrelin

B:-Resistin

C:-Leptin

D:-Adiponectin

Correct Answer:- Option-A

Question89:-False statement related to incretins

A:-released during eating

B:-stimulate insulin secretin from the pancreas

C:-slowing down gastric emptying

D:-enhance the release of glycagon from alpha cells of pancreas

Correct Answer:- Option-D

Question90:-The rise in effective plasma osmolality stimulate the production and release of

A:-Antidiuretic hormone

B:-Adreno corticotrophic hormone

C:-Parathyroid hormone

D:-Prolactin

Correct Answer:- Option-A

Question91:-Find out the incorrect match

A:-Conversion of tamoxifen to activate metabolite endoxifen - CYP2D6

B:-Nortriptyline inactivation - CYP2D6

C:-Conversion of amitriptyline to its active metabolite nortriptyline - CYP2C19

D:-Activation of Nortriptyline - CYP2D6

Correct Answer:- Option-D

Question92:-Proteins used in therapy like insulin are produced by

A:-Polymerase chain reaction

B:-Recombinant DNA technology

C:-Southern blotting

D:-Gene Editing

Correct Answer:- Option-B

Question93:-Organic cation transporter OCT1 (SLC22A1) facilitates the movement across membrane of

A:-Metformin

B:-Digoxin

C:-Testosterone

D:-Progesterone

Correct Answer:- Option-A

Question94:-The route of administration that reduce bioavailability by first pass effect

A:-Sublingual administration

B:-Intra-arterial injection

C:-Intramuscular injection

D:-Oral administration

Correct Answer:- Option-D

Question95:-Drug effects that occur not by means of macromolecular receptors

A:-Mannitol

B:-Amiodarone

C:-Cortisol

D:-Insulin

Correct Answer:- Option-A

Question96:-True about median effective dose (ED_{50})

A:-The dose of a drug required to produce a specified effect in 50% of the population

B:-Range of steady-state concentrations of drug that provides therapeutic efficacy with minimal toxicity

C:-Determine in experimental animals

D:-One way to measure the short-term poisoning potential (acute toxicity) of a material

Correct Answer:- Option-A

Question97:-Idiosyncratic reactions indicate

A:-an abnormal reactivity to a chemical/drug that is peculiar to a given individual

B:-extreme sensitivity to low doses

C:-extreme insensitivity to high doses of drugs

D:-all the above

Correct Answer:- Option-D

Question98:-Choose the mismatch related to allergic reactions

A:-Type II Cytolytic reactions - mediated by bot IgG and IgM antibodies, activate the complement system

B:-Type III Arthus Reactions - mediated by sensitized T lymphocytes and macrophages

C:-Type I anaphylactic reactions - mediated by IgE antibodies

D:-Type IV Delayed Hypersensitivity reactions - mediated by sensitized T lymphocytes and macrophages

Correct Answer:- Option-B

Question99:-An example of genotoxic carcinogen

A:-Benzo[a]pyrene, in tobacco smoke

B:-Phorbol esters

C:-Asbestos

D:-Ethanol

Correct Answer:- Option-A

Question100:-Erethism is due to

A:-Chronic mercury vapor inhalation

B:-Chronic arsenic poisoning

C:-Erythromycin overdose

D:-Hypersensitivity to Penicillin

Correct Answer:- Option-A