Archive

Biochemistry

Collected by

لجنة الطب والجراحة

رَوْح

1: The only amino acid that give yellow color when it react with ninhydrin is:

a) lysin

b) proline

c) tryptophan

d) arginine

ANSWER: B

2: At bradford assay the differences between the two forms of the dye is greatest at :

a) 465

b) 610

c) 595

ANSWER: C

3: The only type of chromatography that use a helium as mobile phase is :

a) liquid chromatography

b) gas chromatography

ANSWER: B

4* : One of the following is incorrect :

a) specific gravity of cow milk is less than in human milk

b) human milk get white color and cow milk get yellow color

c) cow milk lipids are equal to human milk lipids

d) acidity of cow milk is more than it in human milk

e) اشي اله دخل بالبروتين وهو الجواب الصح

5- The Ph of human milk :

a-6.6-6.8

b-7

c-5.9

d-5.5

ANSWER:A

6- The mansuf is a national food in Jordan. to be a good absorption of iron we favorable to drink :

a) milk

b) water

c) lemon juice

d) tea

e) coffee

ANSWER: C

7- All of the following are correct except :

a) aqueous humor fills the posterior chamber

ANSWER: A

8*- All of the following are correct except :

a) tears are produced by lachrymal gland

b) when tears flow with a slow rate , it will be hypertonic

c) when tears flow is copies , the fluid is isotonic

باقي الخيارات بما فيها الجواب الصحيح ناسيه .... كنت شغال عاالستثناء بس المهم السؤال بيتعلق بالدموع على ما اذكر

9 : The total content of iron in an adult body is:

a) 9-11 mg

b) 10-12 mg

c) 3-5 g

d) 10-12 g

c) 30-40 g

ANSWER: C

10- One of the following are macro mineral :

a) molybdenum

b) iron

c) sulfur

d) cobalt

e) manganese

ANSWER: C

11- One of the following is wrong about calcium:

a) the milk products is good sources

b) the absorption of calcium occur in duodenum and jejunum

c) calcitonin play a role in increase of calcium

d) most of body calcium storage in bone and teeth

e) calcium is the most abundant mineral in animal tissues

ANSWER: ?

12- The PTH promotes Ca absorption by :

a) induce the synthesis of Ca binding protein

ANSWER: A

13- One of the following is correctly matched :

a) fructose ------ > malt sugar

b) lactose ----- > table sugar

c) glucose ------ > blood sugar

d) sucrose ---- > milk sugar

ANSWER: C

14- The storage saccharide is most abundant in animal cells :

a) starch

b) galactose

c) cellulose

d) chitin

e) glycogen

ANSWER: e

15 : One of the following is incorrect stereoisomer :

a) galactose ------ > glucose

b) glucose ------ > fructose

c) glucose ----- > mannose

d) alpha ribose ------- > beta ribos

e) L- glucose -------- > D - glucose

ANSWER: B

16- The human milk secretion stimulates by :

a) oxytocin

b) prolactin

c) estrogen

d) testosterone

ANSWER: B

17- The similarity myoglobin and hemoglobin is :

a) no obvious relation between them

b) similar in both primary structure and tertiary structure

c) different in primary structure and tertiary structure

d) similar in primary structure but different in tertiary structure

e) similar in tertiary structure but different in primary structure

ANSWER: B

18- The peptide bond occurs when :

a) the hydroxyl group of carboxylic acid of one molecule react with hydrogen atom in the amine group of other molecule

b) the hydrogen atom of carboxylic acid of one molecule react with hydroxyl group in the amine group of other molecule

c) the hydrogen atom of carboxylic acid of one molecule react with hydrogen atom in the amine group of other molecule

d) the hydroxyl group of carboxylic acid of one molecule react with hydroxyl group in the amine group of other molecule

ANSWER: A

19- If you know :

l : not all proteins has quaternary structure

ll : the beta - sheet secondary structure may be parallel or anti parallel

lll : disulfide bond make tertiary structure

lV : the hydrogen bond between backbone atom make secondary structure

the correct answer is :

a) l only

b) ll and l

c) lll and lV

d) l and ll and lll

e) l and ll and lll and lV

ANSWER: D

20- Cough , fever and headache , a tinge of yellow in whites of eyes .

all of these are symptoms of :

a) Alzheimer disease

b) anemia

c) mad cow disease

d) collagenopathy

ANSWER: B

21- Must be supplied through diet:

a) serine

b) proline '

c) cysteine

d) alanine

e) phenylalanine

ANSWER: E

22- Nonpolar , aromatic R group , have indole side chain :

a) phenylalanine

b) tryptophan

c) proline

d) alanine

e) histidine

ANSWER: B

23- The best thing that describe the specificity of enzymes is :

a) km

b) km / k1 + k2

c) k-1+k-2 / km

ANSWER: ?

24- The induced fit model when :

a) the substrate bind to the enzyme

b) the substrate be at proximity to enzyme

c) the change occur in the active site after the binding of substrate

d) the change in the active site before binding of the substrate

ANSWER: ?

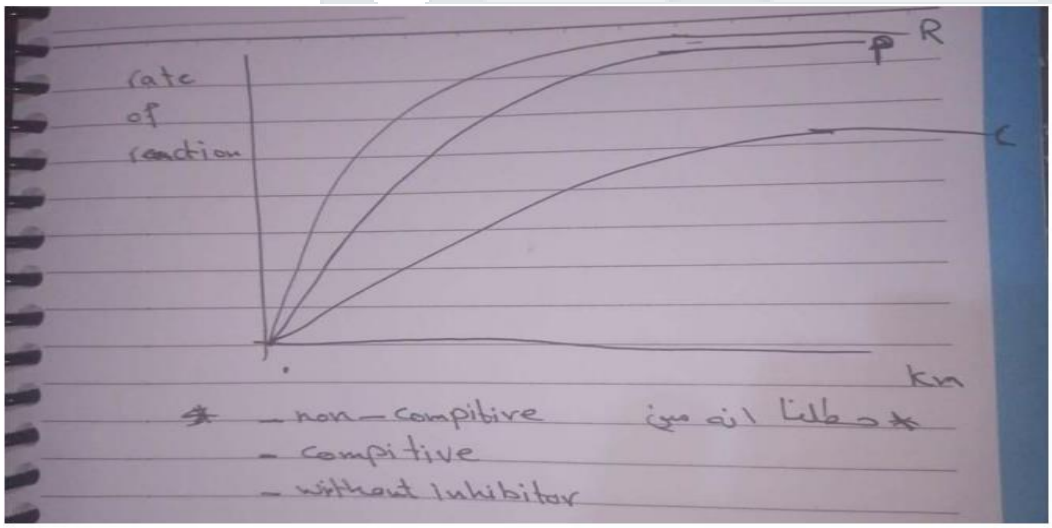
25 :

في سؤال كان معطي رسمة فيها ثالث منحنيات (H,D,P)

السؤال متعلق بالمثبطات ، حاط المنحنيات في مستوى بياني وحاط ثالث أسماء لمثبطات

Non competitive , uncompetitive , competitive

فالمطلوب انه الطالب يحفظ رسمات المثبطات كل مثبط كيف الرسمة تاعته وشو بيغير وشو((ب يثبت ((و هاي الرسمة بالصورة



....

26- The inhibitor that react with the ES complex but not directly to

enzyme :

a-uncompetitive

ANSWER: A

27- Which one of the following describe the action of aspirin?

a) adding a sulphate to active site

b) blocking the active site

c) applying a conformational change to the enzyme

ANSWER: C

28- The lipoprotein that contain the lowest phospholipids :

a-Chylomicron

b-LDL

c-HDL

ANSWER: ?

29- Arrange the chylomicron , VLDL , IDL , LDL from the smallest size to the largest :

a-HDL , LDL, VLDL , chylomicron

b-VLDL , IDL , LDL , chylomicrons

ANSWER: A

30- The apoprotein using as enzyme cofactor:

a- apo c-ll

b- apo B

ANSWER: A

31- The desired value in most adult for HDL is:

a- 40-60

ANSWER: A

32-One of the following is true about sterols:

ANSWER: it is composed of 17 carbon atom with two methyl group

C18 , C19

33- Esterified happens:

ANSWER: carboxylic acid with alcohol and remove water

34-Estrified in cholesterol:

ANSWER: fatty acid esterified with C-3 OH of cholesterol

35- Example of primary bile acid :

a- chenodeoxycholic acid

b- lithocholic acid

c- deoxycholic acid

ANSWER: ?

36-Example of corticosteroids produced by adrenal cortex are:

ANSWER: cortisol

37- Hormone stimulation milk secretion:

a- prolactin

b-oxytocin

ANSWER: a

38- Hormone important in menstrual cycle:

a-progesterone

b- estrogen

ANSWER: B

39- All of the following is components of ganglioside except:

a-glycerol

b-sphingosine

c-carbohydrates

answer;?

40- Fat in animal is:

a- saturated only

b-saturated and polyunsaturated with short chain fatty acid

c-polyunsaturated only

answer;?

41- Fatty acid with 20 carbon atom and 3 double bond and the first double bond is on carbon number 8 is:

a- omega 6

b- omega 3

c- omega 9

answer;?

42- All of the following is examples of macro minerals except:

a- molybdenum

b- sodium

c- chloride

d- phosphorus

answer;?

44- Which one of the following is amino acid should bound in

ninhydrin reaction :

a- acidic amino acid

b- natural amino acid

c-basic amino acid

d-essential amino acid

answer;B

45- Tripeptides contain :

a-3 amino acid and 2 peptide bond

b- 3 amino acids and 3 peptide bond

c- 3 amino acid and 1 peptide bond

answer;a

46- All of the following is example about interstitial fluid except:

a-serum

b-csf

c-synovial

answer;?

47*- All of the following is true about sweat except :

a-pH 4.7-9.7

b-controlled by ANS

c-increase in sweat produced daily lead to water and electrolytic balance

answer;?

48- All of the following is true about aqueous humor except:

a-aqueous humor is secreted by posterior chamber of eye by retina

b-blockade in the flow of aqueous humor causes glaucoma

c- vitreous humor secreted by posterior chamber of eye

answer;?

49- One of the following is the only constituent in milk with specific gravity lower than 1000 :

ANSWER: lipid

50*- About B sheet what is the true :

l beta sheet consisted of one or more polypeptide

ll beta sheet is secondary structure

lll beta sheet is parallel or antiparallel

lV the polypeptide chain is linking in hydrogen bond

a- ll , lll and lV

b-l,ll,lll and lV

52- The major component of synovial fluid, which works as shock absorber?

a) hyaluronic acid

b) chondroitin sulfate

c) dermatan

d) keratan

e) heparin

ANSWER: A

53- Which one of the following describe the action of aspirin?

a) adding a sulphate to active site

b) blocking the active site

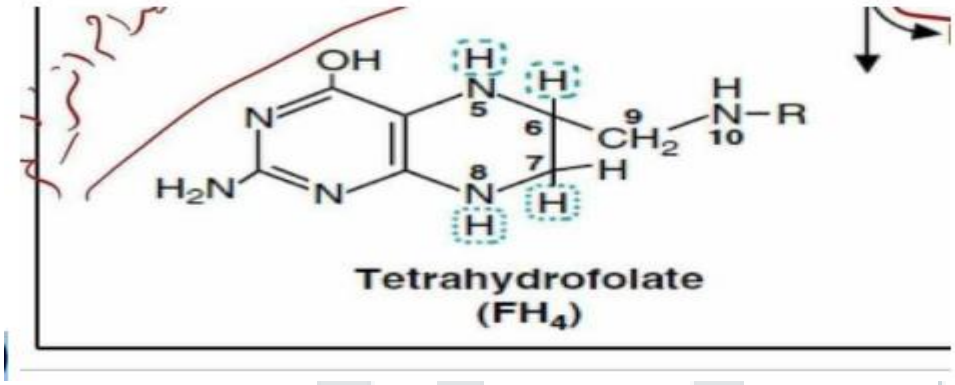
c) applying a conformational change to the enzyme

ANSWER: C

54- Which of the following is true about allosteric inhibitions :

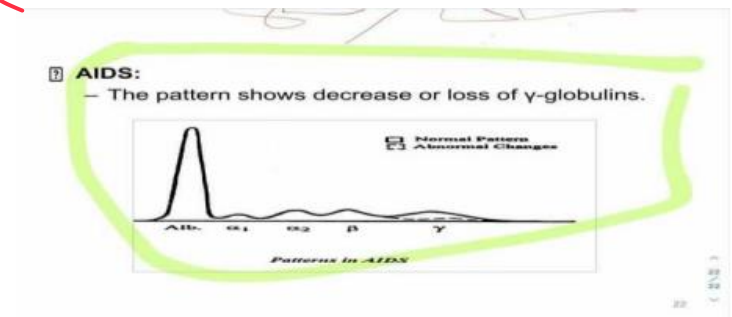
ANSWER: Usually in quaternary structure

55- this is?



ANSWER: -tetrahydrofolate (FH4)

56- the disease is



ANSWER: AID

^^WATEEN^^

1- A 3-year-old child was brought to you with bow legs, protruding forehead, and presence of osteoid tissue (knobs) on ribs. This disorder is due to deficiency of which vitamin and what is the most activeform?

Select one:

a. Vitamin A -- beta-carotene

b. Vitamin A-11-cis-retinal

c. Vitamin D-25 hydroxy-cholecalciferol

d. Vitamin D 1,25 dihydroxy-cholecalciferol

e. Vitamin E- y-tocopherol

ANSWER:D

2- Regarding Lactose Intolerance, one of the following is

correct? Select one:

a. It is caused by deficiency of the sugar lactose in milk

b. It has symptoms like constipation and fever

c. due to deficiency of lactase enzyme, the lactose found in milk will be absorbed from the wall

ofsmall intestine intact

d. GIT disturbances are resulted from undegraded lactose reaching the colon intact

e. Small babies are given the milk formula AR

ANSWER:D

3- This test is semiquantitative and can indicate the amount of sugar present in urine of diabeticpatient depending on the resulting colour?

Select one:

a. lodine test

b. Molisch test

C. Benedict's Test

d. Seliwanoff Test

e. Fisher Test

ANSWER:C

4- This polysaccharide is hetero, natural, linear and mainly found in mast cells?Select one:

a. Glycogen

b. Hyaluronic acid

c. Dermatan sulphate

d. Heparin

e. Chitin

ANSWER:D

5- The route by which iron is transported in the circulation from the intestine to

the sites ofmetabolism in the body?

Select one:

a. Assimple Fe2+ in the serum

b. Bound to albumin

c. Bound to ferritin

d. Bound to transferrin

e. Assimple Fe3+ in the serum

ANSWER:D

6- The main components of vegetable oil is?Select one:

a. Phosphoglycerolipids

b. Gangliosides

C. Sphingomyelin

d. Cholesterol

e. Triglycerides

ANSWER:E

7- Which of the followings does not contain glycerol?Select one:

a. Phosphoglycerides

b. Phosphatidylinositol

C. Sphingomyelins

d. Triacylglycerols

e- Phosphatidate

ANSWER:C

8- One of the following compounds is not considered as modified sugar?Select one:

a. glucuronic

b. acidglycerol

C. deoxyribose

d. glyceraldehyde

e. glucosamine

ANSWER:D

9- One of the following is not deficient in milk?Select one:

a. Vitamin D

b. Vitamin C

c. Vitamin K

d. Vitamin A

e. Copper

ANSWER:D

10- The normal PH of human milk is?Select one:

a. 5.5-7

b. 6.8-7.4

c. 4.7-7.5

d. 6.6 6.8

e. 5.5 7.4

ANSWER:B

11- Which of the following vitamins best matches its underlying mechanism of activation to coenzymeform? Select one:

a. Thiamin by oxidation

b. Niacin by adenylation

c. Riboflavin by methylation

d. Cobalamin by reduction

e. Folate by phosphorylation

ANSWER:A

12- Actin filaments are? Select one:

a. also known as microtubules

b. able to assemble and disassemble from component proteins

c. found in the center of flagella and cilia

d. intermediate in size between microtubules and microfilaments

e. made of different kinds of components in different tissue

ANSWER:B

13- Urine may contain lactose during last third of pregnancy, it could be differentiated from glucose inurine in the diabetics by? Select one:

a. Osazon test

b. Electrophoresis

c. Bradford method

d. Fehling test

e. Benedict test

ANSWER:A

14- Which of the following is TRUE as regards water-soluble vitamins? Select one:

a. They act mainly as coenzymes

b. They are excreted mainly in faeces

C. All of them are heat- and light- stable

d. They require chylomicrons to be transported to chyle

e. Excess dietary intake causes toxicity

ANSWER:A

15- Many factors affect calcium absorption, Which of the following carbohydrate is effective inpromoting the calcium absorption? Select one:

a. Sucrose

b. Maltose

C. Lactose

d. Xylose

e. Galactose

ANSWER:C

16- Standard amino acid with secondary amino group attached to alpha carbon? Select one:

a. Proline

b.Tyrosie

C. Alanine

d. Glycine

e. Lysine

ANSWER:A

17- Asregard eye tears, all the following sentences are true except? Select one:

a. Eye lubricant

b. It becomes hypertonic with profound flow

C. Have protective function against infection

d. Protein content is 0.6 to 0.18g/dl

e. PH 7 to 7.6

ANSWER:B

18- Which of the following vitamins CORRECTLY matches an important cause of its deficiency? Selectone:

a. Vitamin B9 in obstructive jaundice

b. Vitamin B3 in anticoagulant therapy overdose

c.Vitamin B2 if boiling of food

d. Vitamin C in vegetarian

e. Vitamin B1 in chronic alcoholism

ANSWER:E

19- Covalent modifications that increase the activity of allosterically regulated enzymes do so by? Selectone:

a. Adding phosphate groups to essential amino acids in the active site

b. Causing the enzyme to fold into a more active configuration

C. The involvement of the main source of cellular energy

d. Increasing the amount of total enzyme present

e. Increasing the rate of enzyme degradation

ANSWER:A

20- Regarding Lactose Intolerance, one of the following is correct? Select one:

a. It is caused by deficiency of the sugar lactose in milk

b. It has symptoms like constipation and fever

C. due to deficiency of lactase enzyme, the lactose found in milk will be absorbed from the wall

ofsmall intestine intact

d. GIT disturbances are resulted from undegraded lactose reaching the colon intact

e. Small babies are given the milk formula AR

ANSWER:D

21- As regard points of differentiation between human milk and cow milk, all the

following are true EXCEPT? Select one:

a. Human milk contain less mineral elements than cow's milk

b. Cow's milk contains higher free cholesterol while human milk contain mainly ester form

c. Phospholipids in cow's milk twice that of human milk

d. Cow's milk is sweeter than human milk

e. Human's and cow's milk contain the same amount of fat

ANSWER:D

22- The structure of GM2 is different from cerebrosides by? Select one:

a. Number of fatty acids

b. Type of alcohol

c. Presence of choline

d. Number of carbohydrate molecules

e. Presence ofserine group

ANSWER:D

23- Gluconic acid results from? Select one:

a. oxidation of aldehyde group of glucose

b. reduction of aldehyde group of glucose

C. oxidation of terminal OH of glucose

d. reduction of terminal OH of glucose

e. oxidation of chiral carbon number 5 of glucose

ANSWER:A

24- The process of separation of mixture into its components by partition between two phases is called?Select one:

a. Electrophoresis

b. Chromatography

c. Dialysis

d. Chemical precipitation

e. Centrifugation

ANSWER:B

25- Fatty acids, choose the wrong statement? Select one:

a. carbon number 3 is called B-carbon

b. most of the fatty acids found in nature have an even number of carbon atoms

C. At pH 9 fatty acids are not ionized

d. Stearic fatty acid is a saturated fatty acid

e. Unsaturated fat has less energy than saturated fat

ANSWER:C

26- What is the proportion of glycine residues in collagenous regions?

a.Half

b. One-tenth

c. One-fourth

d. One-third

e. One-sixth

ANSWER:D

27- Which of the following best describes vitamin D? Select one:

a. 24,25 dihydroxy-cholecalciferol isthe most active form

b. Calcitriol increases renal calcium reabsorption

C. At low calcium level 1,25dihydroxy-cholecalciferol enhances bone mineralization

d. Excess vitamin D is excreted in urine

e. Hypervitaminosis D occurs most commonly due to exposure to sunlight

ANSWER:B

28- The most common cause of familial hypercholesterolemia is? Select one

a. A high cholesterol diet

b. Defective cholesterol

c. Genetically defective LDL receptor synthesis

d. Accumulation of chylomicrons in the blood

e. Defect in HDL

ANSWER:C

29- Which of the following components is found in all sphingolipids? Select one:

a. A carbohydrate

b. A negative charge

c. A phosphate group

d. An amino alcohol

e. Cholesterol

ANSWER:D

30- Which of the characteristics below apply to free cholesterol? Select one:

a. It consists of 17 carbon atoms.

b. It hasthree hydroxyl groups.

C. It is completely hydrophobic structure.

d. It increases the rigidity of cell membrane.

e. Low levels may lead to atherosclerosis.

ANSWER:D

31- Iron deficiency anaemia is less common in breast feeding babies due to? Select one:

a. Breast milk contain the required amount for the baby

b. The newborn are not requiring high iron

C. They store iron in their liver during prenatal life that is sufficient till weaning time

d. The mothers always give them iron supplementation

e. The iron is highly absorbed due to high content of calcium in milK

ANSWER:C

32- The iron is oxidized to ferric form (Fe3+) by which of the following? Select one:

a. Ferritin

b. HCL

C. Transferrin

d. Hemosidrin

e. Ceruloplasmin

ANSWER:E

33- One of the following is not correct regarding cellobiose? Select one

a. It is a reducing sugar

b. This disaccharide results from degradation of celulose

C. It consists of two B-glucose units

d. The monomers in cellobiose are found in the D-configuration and as cyclic pyranose rings

e. The glucose units are joined together by a-1,4 glycosidic bond

ANSWER:e

34- can affect the catalytic activity of the enzyme. Which of the following statements concerning thateffect is correct? Select one:

a. An increase in temperature can stop the reaction by denaturing the enzyme

b. An increase in temperature can increase the reaction rate by increasing the speed at

whichmolecules move

C. An increase in temperature to the optimum temperature maximizes reaction rate

d. More than one correct response

e. No correct response

ANSWER:D

35- Deformity of the bones that occurs due to vitamin D deficiency in growing children is called? Select one:

a. Hemosidrosis

b. Osteomalacia

c. Osteoporosis

d. Ricketss

e. Hemochromatosis

ANSWER:D

36- Which of the following is FALSE as regards vitamin A metabolism? Select one:

a. In light, rhodopsin is dissociated to 11 cis-retinal and opsin

b. Retinal can be reduced to retinol

C. Retinol-binding protein transthyretin complex is important for its transport in plasma

d. Excess vitamin A is stored in liver in the form of retinyl ester

e. Retinoic acid can regulate the level of expression of certain genes

ANSWER:?

37- A 20-year-old woman was admitted to hospital complaining from bilateral burning sensation of the lower extremities and difficulty to walking. Laboratory investigation revealed macrocytic anemia and high plasma and urine L-methylmalonic acid. What isthe probable deficient vitamin? Select one

a. B12

B. B1

c. B2

d.B3

e.B9

ANSWER:A

38- Which of the following molecules is not a fatty acid? Select one

a. CH3(CH2)14COOH

b. CH3(CH2)7CH=CH(CH2)7COOH

c. CH3CH2(CH=CHCH2)3(CH2)6COOH

d. (CH3)4CH(CH2)3OH

e. CH3(CH2)7CH=CH(CH2)9 COOH

ANSWER:D

39- All the following factors decrease calcium absorption except? Select one:

a. Lysine

b. Phytate and oxalate

C. Free fatty acids

d. High PH

e. High phosphate diet

ANSWER:A

40- Choose the correct statement Select one:

a. myosin is a tetramer protein

b. tropomyosin protein binds head to tail with actin thin filament

C. troponin complex contains five subunits

d. myoglobin protein hasthe quaternary structure level

e. the heavy chain of myosin contains four domains

ANSWER:B

41- The normal PH of sweat is?

Select one:

a. 2.7-4

b.5.7-7

c. 6.7-7.5

d. 3.7 to 4.7

e. 4.7 to 7.5

ANSWER:E

42- Which of the following conversions best matches its required vitamin?
Select one:

a. Proline-> hydroxyl proline (Menaquinone)

b. Glutamate gamma -> carboxy glutamate (Tocopherol)

c. Deoxy UMP -> deoxy TMP (Thiamin)

d. Tryptophan -> Niacin (Retinol)

e. Homocysteine -> Methionine (Cobalamin)

ANSWER:E

43- The highest phospholipids content is found in? Select one:

a. Chylomicrons

b. Very low density lipoprotein

c. Low density lipoprotein

d. High density lipoprotein

e. Intermediate density lipoprotein

ANSWER:D

44- After the cyclic sugar formation, the carbonyl carbon will be converted to? Select one:

a. anomeric carbon

b. achiral carbon

c. alcoholic carbon

d. carboxylic acid

e. ketonic group

ANSWER:A

45- Which of the following vitamins contains sugar acid in its structure? Select one:

a. Riboflavin

b. Thiamin

C. L-ascorbic acid

d. Niacin

e. Folic acid

ANSWER:C

46- One of the regulatory mechanisms of enzymatic activity is the covalent modification, whichstatement is false about such a mechanism? Select one

a. It is reversible

b. It isslower than allosteric regulation

C. It is irreversible

d. Phosphorylation is a common covalent modification

e. It isrequiring the activity of two enzymes

ANSWER:C

47- C6H1206 isthe molecular formula of all of the following sugars EXCEPT? Select one:

a. Glucose

b. Fructose

c. Galactose

d. Mannose

e. Ribose

ANSWER:E

48- Which of the following vitamins CORRECTLY matches its deficiency state? Select one:

a. L-ascorbate deficiency -> Neural tube defects

b. Riboflavin deficiency-> Pernicious anemia

c. Thiamine deficiency -> Beri beri

d. Folate deficiency -> Scurvy

e. Cobalamin deficiency -> Rickets

ANSWER:C

49- Chylomicron, IDL, LDL and VLDL all are serum lipoproteins. What is the correct ordering of these particles from the lowest to the greatest density? Select one:

a. LDL, IDL, VLDL, Chylomicron

b. Chylomicron, VLDL, IDL,

LDLc .VLDL, IDL, LDL,

Chylomicron

d. Chylomicron, IDL, VLDL, LDL

e. IDL, chylomicron, LDL, VLDL

ANSWER:B

50- If the OH group at ONLY one chiral carbon in the linear structure of monosaccharides is located onthe right or the left, then the resulting stereoisomer is assigned as? Select one:

a. L-sugar

b. D-sugar

c. Epimer

d. a-sugar

e. B-sugar

ANSWER:C

51- Which one of the following steroids contains 19 carbon atoms? Select one:

a. Estradiol

b. Cortisol

c. Cholesterol

d. Testosterone

e. Progesterone

ANSWER:D

52- Which of the following is FALSE as regards antioxidant vitamins? Select one:

a. Vitamin E protects cell membranes from oxidative stress

b. Tocopherols prevent oxidation of low

densitylipoprotein (LDL)

C. L-ascorbic acid convertsferric to ferrous iron for better absorption

d. Provitamin-A is effective antioxidant

e. Vitamin D decreases the rate of glutathione reductase synthesis

ANSWER:?

53- Upon adding an inhibitor to an enzyme-catalyzed reaction, the rate of reaction is markedly decreased, then, the rate does not show any increase

upon increasing the substrate concentration.What is your conclusion about the inhibitor? Select one:

a. That it is a kinase

b. That it is a competitive or noncompetitive inhibitor

C. That it bindsthe enzyme's active site only

d. That it is an inorganic or competitive inhibitor

e. That it is a noncompetitive or uncompetitive inhibitor

ANSWER:E

54- There are different mechanisms for regulating enzyme activity including the allosteric one.which of the following would usually be found in such a mechanism? Select one:

a. The need for cofactors

b.The enzyme is a monomeric molecule

C. Both activating and inhibitory activity by one modulator

d. Feedback inhibition by the reaction end product is not existing

e. Cooperativity

ANSWER:C

55- The glucose isthe main energy substrate in? Select one:

a. Brain cells

b. Skeletal muscles

C. Liver cells

d. Heart cells

e. Kidney cells

ANSWER:A

Enzymes

1- In enzyme chemistry, the active site concept means that? :

a. There may be a covalent bond between enzyme and substrate

b. Functional groups on the enzyme participate directly in the reaction

c. All enzymes are having the flexible model of the active site

d. For all enzymes, no catalysis in the absence of cofactors

e. All enzymes are having the rigid model of the active site

ANSWER:D

2- A plot of enzyme activity (y-axis) versus substrate concentration (x-axis) with other variables constant is a?:

a. Straight line with an upward slope.

b. Line parallel to the y-axis

c. An upward line slope followed by a downward slope.

d. Straight horizontal line.

e. Line with an upward slope and a long flat top.

ANSWER:E

3- If one continues to increase the temperature in an enzyme-catalysed reaction, the rate of the reaction?

a. Does not change.

b. Increases and then levels off.

c. Decreases and then levels off.

d. Increases and then decreases rapidly.

e. Decreases and then increases rapidly.

ANSWER:D

4- Which of the followings is not true regarding Ninhydrin test?

a. It is used to detect free amino acid and proteins

b. All the amino acids give the same results on reaction with Ninhydrin

c. This reaction provides an extremely sensitive test for amino acids

d. Amino acids react with ninhydrin at pH-4

e. It requires Boiling over a water bath for 2-5 minutes

ANSWER:B

5- LDH1 and LDH2 isoenzymes of lactate dehydrogenase enzyme are elevated in?

a. Myocardial infarction

b. Liver disease

c. C. Kidney disease

d. Brain disease

e. Lung diseases

ANSWER:C

6- Different isoenzymes of an enzyme have the same?

a. Amino acid sequence

b. Michaelis constant

c. Catalytic function

d. Tissues origin

e. Effect of activators and inhibitors

ANSWER:C

7- If the substrate concentration is much below the Km of the enzyme, the velocity of the reaction is?

a. Directly proportional to substrate concentration

b. Not affected by enzyme concentration

c. Nearly equal to Vmax

d. Inversely proportional to substrate concentration

e. Nearly equals to ½ Vmax

ANSWER:A

8- For the binding behavior of hemoglobin, choose the INCORRECT answer?

a. Hb has a lower affinity for 02 than Mb

b. The T-state is also known as the "tense" state and it has a high-binding affinity to oxygen

c. Hb binds 02 in a positive cooperative manner, which enhances the 02 transport

d. Upon oxygenation, the Fe atom ir moved into the porphyrin plane

e. Upon oxygenation, the quaternary structure of Hb changes markedly from (T) to the (R) form

ANSWER:B

9- Why does pH affect enzyme activity?

a. Changes in pH affect the concentration of the coenzyme

b. Changes in pH affect the concentration of enzyme

c. Changes in pH affect the concentration of substrate

d. Changes in pH affect the enzyme optimum temperature

e. Changes in pH affect the shape of the enzyme active site

ANSWER:E

10- One of these sets of enzymes can help as biomarkers in diagnosis of myocardial infarction?

a. LDH1 and CK-BB

b. LDH2 and CK-MM

c. LDH3 and CK-MB

d. LDH5 and CK-MB

e. LDH2 and CK-MB

ANSWER:E

11- Regarding anemia, choose the INCORRECT answer?

a. it is an autosomal recessive disease

b. The shape of the red cells is very irregular

c. Patients symptoms include Cough, fever and headache

d. amino acid sequence is -Val-His-Leu- Thr-Pro-Val-Glu-Lys

e. it is caused by a point mutation in the hemoglobin alpha gene

ANSWER:E

12- Regarding the Tumour suppressor protein 53, choose the CORRECT answer?

a. It can induce growth arrest by holding the cell cycle at the G2/S regulation point

b. P53 cannot initiate apoptosis

c. is a tumour suppressor protein that inhumans is encoded by the TP53 gene

d. More than 50 percent of human tumours contain a mutation or deletion of the P53 gene

e. The P53 gene cannot be damaged by mutagens

ANSWER:C

13- Why does the rate of an enzyme-catalysed reaction increase as temperature is raised from 0 to 37 °C?:

a. Enzyme and substrate molecules have more kinetic energy to get the transition state

b. The shape of the active site changes to be suitable for binding substrate

c. C. The shape of the substrate binding site changes at high temperature

d. Enzymes are denatured at high temperature

e. Enzyme substrate complex will take longer time to be in the transition state

ANSWER:A

14- Regarding the mad cow disease, choose the CORRECT answer?

a. Aprion is an infectious protein that is Similar to bacteria

b. the disease is caused by beta sheets to be converted into alpha-helices

c. the infectious agent in BSE is believed to be a specific type of folded protein called P53

d. the disease is a fatal neurodegenerative disease in cattle

e. mad cow disease is caused a spongy degeneration in the skeletal and cardiac muscles

ANSWER:D

15- For Ligases enzymes?

a. They catalyse oxidation/reduction reactions

b. They transfer a functional group

c. They catalyse the hydrolysis of various bonds

d. They catalyse isomerization changes within a single molecule

e. They join two molecules with covalent bonds

ANSWER:E

16- A plot of enzyme activity (y-axis) versus pH (x-axis) with other variables constant is a?

a. Straight line with an upward slope.

b. Line with an upward slope and a long flat top

c. S shaped line

d. An upward line slope followed by a downward slope

e. Straight horizontal line

ANSWER:D

17- The "lock and key" model of enzyme action illustrates that a particular enzyme molecule?

a. Forms a permanent enzyme- substrate complex

b. May be destroyed and resynthesized several times

c. Interacts with a specific type of substrate molecule

d. Reacts at identical rates under all conditions

e. Can allow the binding of substrate molecule whatever its shape

ANSWER:C

18- An uncatalysed reaction requires ?

a. A higher activation energy

b. A lower activation energy

c. A Balanced activation energy

d. No activation energy

e. A similar activation energy as the catalyzed reaction

ANSWER:A

19- Active site of an enzyme is ?

a. A particular gland that secrets a particular enzyme

b. A portion of the substrate molecule to which the enzyme molecule attaches

c. A portion of the enzyme in which the substrate molecule fits

d. An organ in the body where the enzyme works

e. A portion of the cell in which the enzyme catalysed reaction takes place

ANSWER:C

20- If you added 5 drops of 2% ninhydrine solution to 1 ml of unknown amino acid solution, boiled for 5 minutes. Then the solution turned to a yellow color. The unknown amino acid is suggested to be ?

a. Glutamic acid

b. Proline

c. Glycine

d. Histidine

e. Serine

ANSWER:B

21- Regarding Alzheimer Disease, choose the INCORRECT answer?

a. the disease is associated with plaques in the gray matter of the brain

b. the disease is caused by mutations in four genes, situated on chromosomes 1,14, 19, and 21

c. C. it is the fourth leading cause of death in adults

d. In Alzheimer Disease, the misfolded proteins are alpha-amyloid

e. Some observed symptoms of the disease include a progressive inability to remember facts and events

ANSWER:D

22- According to the induced fit model of enzyme function, which of the following is CORRECT?

a. The active site is not flexible.

b. Some enzymes become denatured when activators bind to the substrate.

c. The binding of the substrate depends on the shape of the active site.

d. The binding of the substrate changes the shape of the enzyme slightly.

e. The active site creates an environment ideal for the reaction.

ANSWER:D

23- The dye used for the colorimetric detection and quantitation of total protein in Bradford method?:

a. Benedict's reagent

b. Methylene blue

c. Coomassie brilliant blue

d. Ethidium bromide

e. Gentian violet

ANSWER:C

24- For the Tumor suppressor protein 53, choose the INCORRECT answer?

a. More than 50 percent of human tumor's contain a mutation or deletion of the P53 gene

b. The P53 gene cannot be damaged by mutagens

c. It can induce growth arrest by holding the cell cycle at the G2/S regulation point

d. P53 can initiate apoptosis

e. is a tumor suppressor protein that in humans is encoded by the TP53 gene

ANSWER:B

25- For Myoglobin, choose the WRONG statement?

a. Myoglobin Can't carry C02

b. Myoglobin 02 affinity is higher than hemoglobin 02 affinity

c. C. Myoglobin has cooperativity of 02 binding

d. Myoglobin has No quaternary structure

e. Myoglobin is found in muscles

ANSWER:C

26- For the binding behavior of hemoglobin, choose the CORRECT answer?

a. Hb has a higher affinity for 02 than Mb

b. The T-state is also known as the "tense" state and it has a high-binding affinity to oxygen

c. Hb binds 02 in a positive cooperative manner, which enhances the O2 transport

d. Upon oxygenation, the Fe atom is moved out of the porphyrin plane

e. Upon oxygenation, the quaternary structure of Hb changes markedly from (R) to the (T) form

ANSWER:C

27 - 75% of Myoglobin structure is a-helix in _____ regions?

a. Seven

b. Five

c. Six

d. Nine

e. Eight

ANSWER:E

28- Which of the following is not a way in which enzymes stabilize a transition state?

a. Covalent catalysis

b. Metal ion catalysis

c. General acid-base catalysis

d. Environmental temperature increase

e. Catalysis by approximation

ANSWER:D

29- Regarding anemia, choose the CORRECT answer?

a. The abnormal HbS clusters together, distorting the RBCs into sickled shapes

b. It is caused by a point mutation found on chromosome 12p15.5

c. C. It is an autosomal dominant disease

d. The shape of the red cells are very regular

e. Amino acid sequence is -Val-His-Leu-Thr-Pro-Ala-Glu-Lys

ANSWER:A

30- Energy of activation?

a. Increases enzymatic activity

b. Decreases enzymatic activity

c. C. Minimum amount of energy for the reaction to occur

d. Maximum amount of energy for the reaction to occur

e. Not needed for the reaction to occur

ANSWER:C

31- If one continues to increase the temperature in an enzyme-catalysed reaction, the rate of the reaction?

a. Does not change.

b. Increases and then levels off.

c. Decreases and then levels off.

d. Increases and then decreases rapidly.

e. Decreases and then increases rapidly

ANSWER:D