Biochemistry Final Exam

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1-What is true about plasma proteins?

A-They are all produced in the liver.
B-Most of them have a short half life (only hours).
C-Most of them have a single peptide.
D-Albumin is N-glycosylated.
E-Most of them does not undergo post translational modifications.
Ans is C

2-What is the active form of vitamin D?

A-Cholecalciferol.
B-Calcitriol.
C-Calcidiol.
D-Ergocalciferol.
Ans is b

3-Which reaction occurs after vitamin D is synthesized in the liver?

A-Carboxylation.
B-Decarboxylaion.
C-Oxidation.
D-Hydroxylation.
Ans is D

4-What is the most abundant plasma protein?

Answer: Albumin.

5-which plasma protein rescues hemoglobin?

Answer: Haptoglobin.

6-What is the rate of the reaction if Vmax=10V and [S]=0.1Km?

A-Approximately 0.1Vmax.
B-Approximately 0.5Vmax
C-equal to Vmax.
D- V=5Vmax.
E-V=10Vmax.
Ans is A

7-Which vitamin is derived from beta-carotene?

A-Vitamin B12
B-Vitamin A
C-Vitamin B9
D-Vitamin K
Ans is b

8-Which bonds are responsible for temporary waves?

A-disulfide bonds.
B-Hydrogen bonds
Ans is b

9- (SDS-PAGE) separates molecules based on:

A-Charge.
B-size (molecular weight).
Ans is b

10-PKA is activated by :

Answer: cAmp.

11-Which immunoglobulin is involved in allergic reactions?

A-IgM.
B-IgG.
C-IgD.
D-IgE
E-IgA.
Ans is D

12-Choose the correct and the best matching.

A-Hydroxylysine & cross linking.
B-Proline & kinks.
C-Hydroxyproline & glycosylation.
D-Allysine & flexibility.
Ans is B

13-What would increase binding of oxygen to hemoglobin?

A-High CO_2 levels.
B-High temperature.
C-High BPG levels.
D-High chloride levels.
E-High pH.
Ans is E

14-Isozymes are NOT different at:

A-kinetics.
B-genes.
C-reactions.
D-tissue type.
Ans is C

15-Which peptide cannot be digested by Chymotrypsin?

A-Gly-Trp-Lys
B-Phe-Val-Arg

C-Tyr-Trp-Phe
D-Ala-leu-Gly

16-Which type of bonds metal ions use to stabilize protein structure?

A-Hydrogen bonds.
B-Covalent bonds.
C-Disulfide bonds.
Ans is B

17-What determines the overall structure of the protein?

A-Primary structure.
B-Secondary structure.
C-Tertiary structure.
D-Quaternary structure.
Ans is C

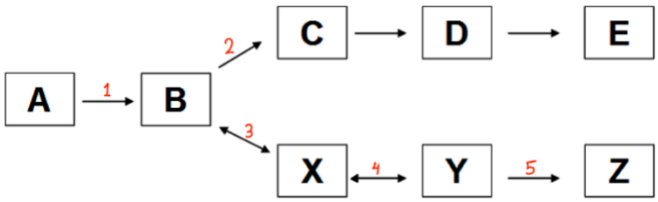
18-Which amino acids cannot be glycosylated?

A-Asn.
B-Thr.
C-Ser.
D-hydroxylysine.
E-Lys.
Ans is E

19-Which peptide is considered as opiates?

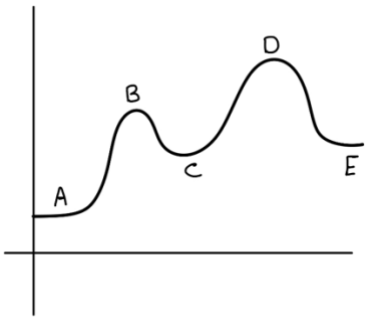
A-Carnosine.
B-Glutathione.
C-Enkephalins.
D-Oxytocin.
E-Vasopressin.
Ans is C

20- What is the committed step for making product Z?



A-1
B-2
C-3
D-4
E-5
Ans is E

21-What represents the enzyme effect?



A-A-C
B-B-A
C-A+B
D-D-B
E-D-A
Ans is E

22-SDS followed by …… for complete desaturation of protein's structure?

A-Reducing agent.
B-Nonionic detergent.
Ans is A

23-What is a feature of peptide bond?

Answer: Resonance.

24-Which amino acid is affected by cis-trans isomerase?

Answer: proline.

26-Which is true when glucose is low?

Answer: More activity for hexokinase than glukokinase.

27- What is true about myoglobin?

Answer: Has hyperbolic O2 saturation curve.

28- which is common between embryonic, fetal, adult hemoglobin?

Answer: number of polypeptide chain.

29-What is correct about Suicide inhibitors?

Answer: They mimic transition state.

30-Fetal hemoglobin can not bind with 2,3 bisphosphoglycerate as adult hemoglobin because of?

Answer: Change in primary sequence.

31- (A reaction: valine decarboxylation image)
Which coenzyme is needed?

Answer: TPP.

32- A reaction: (succincte to fumrate using FAD image)
The coenzyme used is:

Answer: Oxireductase.

33-Where are hypervariable regions found ?

A-loop.
B-immunoglobulin fold.
C- b-sheet.

34-What is the correct about this peptide Tyr-Asp-lys?

A-can be glycosylated.
B-can be phosphorylated.
C-has abnormal ends.

Ans is B

35- What happens in induced fit model?

A- substrate changes the shape of the whole enzyme.
B -substrate changes the shape of active site.
Ans is B

36- There was a table for five enzymes and their km and kcat,
The question says which enzyme is the most efficient?

U should divide kcat over km

37- Which is correct about r and t states?

A-enzyme should be phosphorylated to be active regardless of being in R/T.
B-enzyme should be R to be active regardless of being phosphorylated.
C-enzyme should be phosphorylated and in R state to be active.

Ans is B

38- glycogen phosphorylase is:

Answer: active in R form regardless of phosphorylation.

39- which of the following is covalent modification that can be reversed:

Answer: phosphorylation of the protein.

40-Aspirin inhibits cyclooxygenase by:

Answer: Adding not (Binding) inhibiting group to the active site of the protein. (not sure).

41- what is common between beta sheets and alpha helices?

Answer:The hydrogen bonds between backbone stabilize them.

42- elastin takes its original shape after stretching because of:

Answer: Hydrophobic affect.

42- in michaelis-menten which is correct:

Answer: Increasing Km value mean less affinity the enzyme to the substrate.

43- -if a protein is added to water, then a salt with low concentration is added, what will happen?

Answer: The protein solubility increases.

44- -in ELISA we target molecules by using?

Answer: Antibodies.

45-a researcher want to find the 3D structure of glucokinase bound to glucose molecule, what is the mechanism used?

Answer: NMR.

46- what is correct about enzymes active site?

A-It can distinguish between different enantiomers because it binds at 3 points.
B-it is composed of only hydrophobic amino acid.
C-It is on the surface on the enzyme.

And is A

47- -what is incorrect about antibodies?

A-They are tetramers.
B-They are connected by disulfide bonds.
C-They are glycosylated.
D-They are expressed with different genes producing different variable region.
E-Hybrodima cells produce polyclonal antibodies.

48- Which is a homotropic regulator in hemoglobin?

Answer: Oxygen.

49- What does it mean for protein to be native?

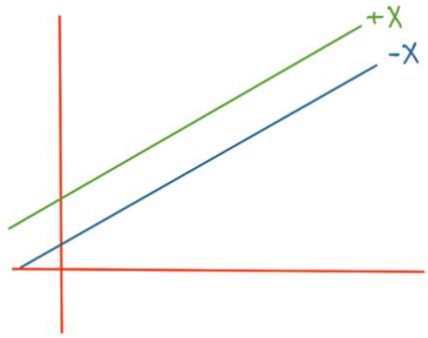
Answer: Folded in the proper way.

50- Cystine forming lead to:

A-determining the tertiary structure.
B-stabilizing the tertiary structure.

Ans is B

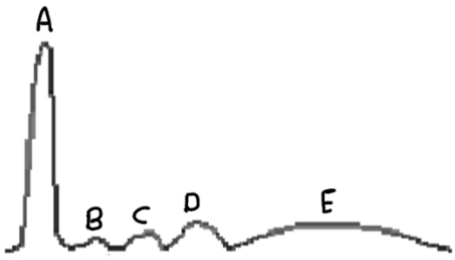
51-When going from (-X) to (+X):



A-Affinity decreases and Vmax increases.
B-Affinity increases and Vmax decreases.
C-Both affinity and Vmax increase.
D-Both affinity and Vmax decrease.

Ans is B

52- Which represents alpha-2?



A-A
B-B
C-C
D-D
E-E

And is C