

Biochemistry I Final Exam 2016

Part 1 Multiple choice questions (20 Marks)

Biochemistry I
dr Mohamed algussain
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- 1- The formation of Acetyl CoA from pyruvate is
 - a) Needing pantothenic acid
 - b) Catalyzed by pyruvate dehydrogenase enzyme
 - c) Catalyzed by pyruvate decarboxylase enzyme
 - d) Belonged to ligases
 - e) A and b

- 2- Substances that targeting acetyl cholinesterase enzymes are
 - a) Pesticides competitively binding
 - b) Chemical weapons irreversibly binding
 - c) Pesticides non-competitively binding
 - d) A and b
 - e) B and c

- 3- The difference between hydrolyases and lyases enzymes is
 - a) Hydrolyases needed water
 - b) Both reactions produces negative ΔG
 - c) Both are hydrolyzing enzymes
 - d) A and b
 - e) A, b and c

- 4- The phosphorylation process;
 - a) Phosphatase enzyme can remove the phosphate group
 - b) Kinases can add phosphate to either substrate or enzyme
 - c) Insulin stimulates both kinases and phosphatases
 - d) A and b
 - e) All of the above

- 5- The mechanism of enzymes action;
 - a) Change the total ΔG of the reaction
 - b) Decrease the transitional state energy
 - c) Formation a complex with products
 - d) The active sites is formed from nucleotides
 - e) Apoenzyme is the non protein part structure

- 6- Glucagon can not
 - a) Allosterically activate all gluconeogenesis enzymes
 - b) Inhibit of glycogen synthase by phosphorylation
 - c) Activate glycolysis
 - d) Stimulate the glucose synthesis enzymes
 - e) Stimulates glycogen degradation

- 7- All about glycogen phosphorylase are true except
- Acidic hydrolysis action
 - Break glycogen α (1 - 4) bonds
 - Break glycogen α (1 - 6) branches
 - Vitamin B6 is a co enzyme
 - Use phosphate to break and form Glucose 1 P
- 8- Epimers sugars;
- Isomers differs only by two location
 - C4 epimerase transforms galactose to glucose
 - C3 epimerase transforms glucose to mannose
 - Cannot be changed to each other according to body needs
 - Isomers with different functional groups aldehydes and ketones
- 9- The only enzyme present in (mouth, stomach and duodenum)
- Amylase
 - Lipase
 - Pepsin
 - Glucosidase
 - None of the above
- 10- The hyper cholesteremia and lipoproteinemia may due to
- Increase cholesterol, VLDL and LDL blood level
 - Decreasing numbers of cellular receptors
 - Diminishing of lysosomal enzymes
 - A and b
 - All of the above
- 11- Eskimo's sugar intolerance disorder may due to the deficiency of
- Sucrase enzyme
 - Iso-maltase enzyme
 - Lactase enzyme
 - A and b
 - All of the above
- 12- Breast feeding substances characterized by
- Contain antibodies can be absorbed by fetus GIT
 - Contain fatty acids 12-14 C
 - Albumin carry fatty acids that enter mitochondrial cells without carrier
 - A and b
 - A, b and c
- 13- The cyclization of sugars;
- About 50% in nature of sugars
 - Fructose is formed by ketal reaction between C2 ketone and C6 alcohol
 - Glucose is formed by acetal reaction between C1 aldehyde and C5 alcohol

- d) All of the above
- e) None of the above

14- The body can synthesized fatty acids

- a) Fully saturated till 16 C palmitic acid
- b) Can reach 18 and 20 in Golgi apparatus
- c) In brain endoblastic reticulum may reach 24 C
- d) Omega enzymes present in the human
- e) Can be un saturated at any site

15- The remnant of un digested lipids are

- a) C2 mono glycerides by lipases
- b) C2 phospholipids by phospho- lipases
- c) Cholesterol esters
- d) Removed by feaces
- e) Absorbed by passive diffusion

16- Thymine formation does not need

- a) Uracil
- b) Folic acid and ATP
- c) Methionine
- d) Methyl transferase
- e) B12

17- The active vitamins in nature are

- a) Vitamin A
- b) Vitamin C
- c) Biotine
- d) A and b
- e) B and c

18- Bruises is a symptom of

- a) Beri beri
- b) Scurvy
- c) Bellagra
- d) Anemia
- e) None of the above

19- Vitamins toxicity is mainly from the accumulation of

- a) A, D, K and E vitamins
- b) B6
- c) Water soluble vitamins
- d) A and b
- e) None of the above

20- The microcytic anemia may caused by the deficiency of

- a) Vitamin B12

- b) Folic acid
- c) Iron
- d) A and b
- e) All of the above

Part 2 Short note questions (Answer only 5 questions 40 Marks)

Add structures to your answers

Q1-Draw these structures; heparin sulphate, GC nucleotides in DNA, Sucrose, TPP, cAMP, Palmitoleic acid and N glycosidic linkage sugars.

Q2- with an example; what are the mechanisms of:

a) Vitamin A optical properties

b) Atrovastatine

b) L methyl malonyl CoA mutase

c) AST

d) Glycogen phosphorylase

e) Vitamin E anti-radical

Q3- Many vital metabolizing products synthesized from precursors;
what are the substances synthesized from: a) Pyruvate

b) Emulsifiers from cholesterol

c) Sphingosine

d) PIP2

Q4 - Compare between: a) Competitive and non competitive inhibitor curves

b) HDL and VLDL

c) Phosphatase and Phosphorylase enzymes

d) NADH and FADH2 oxidation processes

Q5- Explain why?

a- Cortisol is a very powerful anti inflammatory action

b- Vitamin B6 involved in many reactions

c- Isoniazide reduces some vitamins concentration

d- Folic acid can carry different groups and actions

e- MI can be diagnosed in different stages

Q6- Complete the table

Disease	Deficiency	Characteristics
		Sphingomyelin accumulation
Beri beri		
Pellagra		
	N-acetylglucosaminidase	
		B glucouronic accumulation (Dermatan and heparan)
I cell		
		Steatorrhea
	Glucocerebrosidase	

Dr Mohamed Al Ghassain