

Course No: NUTR 2305
Course Title: Nutritional Biochem.
Date: 20/05/2018
No. of Questions: (5)
Time: 2 hours
Using Calculator (No)

University of Palestine



Final Exam For 2nd
Semester.
2017/2018
Total Grade:70

Instructor Name: _____
Student No.: _____
Student Name: _____
College Name: _____
Dep. / Specialist: Health & Nutrition
Using Dictionary (No)

Question 1: True or false

20 marks

- 1- Glucagon secretion is inhibited by glucose and insulin and stimulated by amino acids ().
- 2- Skeletal muscle uses the same type of energy fuel under different conditions ().
- 3- The development of insulin sensitivity tends to be enhanced by obesity and by lack of exercise ().
- 4- The initial step in the catabolism of BCAAs involves removal of the keto group ().
- 5- Soluble fibers form a viscous gel in the gut and increase the rate of gastric emptying and intestinal transit ().
- 6- Binding of plasma insulin to a receptor results in activation of kinases that catalyze phosphorylation of serine residues of specific proteins ().
- 7- The glycemic index estimates how much each gram of available carbohydrate (total carbohydrate plus fiber) in a food raises a person's blood glucose ().
- 8- Glycemic Load greater than 20 is considered high ().
- 9- The neonatal infant naturally produces and uses ketone bodies, whether fasting or not ().
- 10- The way in which energy is metabolized differs with the organ but not due to the conditions such as exercising, feeding or fasting ().
- 11- In β -cells the increase in the ATP provoke closing of membrane bound protein called channel and opening of another membrane-bound protein called Ca channel ().
- 12- Glycogen is broken down in the mechanism of phosphorolysis, rather than by hydrolysis().
- 13- Glycolysis probably takes place in all cells of the body; but gluconeogenesis takes place only in the liver and kidneys ().
- 14- Most of the electrons removed from fuels during energy metabolism are transferred via FAD ().

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- 15- The muscle proteins broken down during exercise are those of the myofibrils ()
- 16- The synthesis of glycogen, catalyzed by glycogen synthetase ()
- 17- It should be noted that one molecules of lactate are required for synthesis of one molecule of glucose ().
- 18- The liver uses fatty acids as its main fuel by the conversion to units of acetyl-CoA followed by oxidation to CO₂ ().
- 19- Apple juice may provoke abdominal cramps to a greater extent than other foods ().
- 20- Glycerol is converted to glycerol phosphate by the action of glycerol kinase ()

Question 2: Choose the most correct answer **20 marks**

- 1- The (α -amino of glutamate, in turn, can be transferred to pyruvate, producing -----
a- Aspartate b- Citrate c- Alanine d- Lysine
- 2- During exercise, the lactate produced and released by fermentative muscle is taken up by the liver and used for glucose production via the reactions of the ----- .
a- Cori cycle b- Urea cycle c- futile cycle d- Yo-yo cycle
- 3- Apple juice, which is relatively high in ----- may provoke abdominal cramps to a greater extent than other foods.
a- Lactose b- glucose c- fructose d-b and c
- 4- The ----- released during lipolysis in adipose tissue can be used for the synthesis of TGs or oxidized within the adipose tissue.
a- Glycine b- Schiff base c- glycerol d- none
- 5- Glycogen tends to become depleted during exercise of -----duration.
a- Moderate b- long c- short d- very short

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- 6- Foods which are rich in slowly digestible starches, fructose or contain substantial amounts of either insoluble fiber or fat produce a ----- glycemic response
a- High b- moderate c- very high d- low
- 7- Human fed on high glycaemic meals-----
a- Eat larger volume of food b- Feel less satisfied c - Get hungry sooner d- all
- 8- The range of fasting blood sugar in prediabetes is -----
a- 140-199mg/dl b- 100- 125mg/dl c- more than 200 mg/dl d- \geq 126 mg/dl
- 9- In the liver, G-6-P is hydrolyzed to glucose by the action of-----
a- glucose-6-phosphatase b- hexokinase c- ketokinase d- adlokinase
- 10- The hydrolysis of TGs to FFAs and glycerol is catalyzed by a lipase in ----- called hormone-sensitive lipase.
a- Adipocytes b- liver c- brain d- muscle
- 11- The glycerol released by hydrolysis of TGs stored in muscle cannot be used directly by the muscle, because muscle lacks-----, the enzyme required for introduction of glycerol into the glycolysis pathway.
a- glycerophosphate dehydrogenase b- aldolase c- mutase d- glycerokinase
- 12- The contribution of the body's ----- stores to energy requirements during exercise is relatively small: about 5% of the total energy expended.
a- Fat b- glucose c- ketone bodies d- protein
- 13- ----- is concentrated in specific regions in the brain, where it acts locally to control the appetite
a- CCK b- levulinc acid c- GABA d- Ghrelin

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- 14- During exercise, the ----- produced and released by fermentative muscle is taken up by the liver and used for glucose production.
- a- Acetate b- lactate c- oxaloacetate d- pyruvate
- 15- Crohn's disease is usually treated with drugs (corticosteroids), but it may also be treated by the elimination of a normal diet and its replacement with an
- a- Elemental diet b. yoyo Diet c. Dukan Diet d. Atkin Diet
- 16- ----- is drug used to induce diabetics by selectively destroying beta cells of the pancreas.
- a- Azitomycin b- floxabin c- streptozotocin d- streptococci
- 17- The increase risk of hypertension as a result of-----
- a- Dysepithelial functioning b-dyslipidemia c- increase sodium retention d- all
- 18- With the breaking of a fast, dietary carbohydrates are used first, mainly for the synthesis of ----- glycogen.
- a- Brain b- liver c- adipose tissue d- muscle
- 19- Concentrations of ----- can give a more accurate picture of pancreatic function than those of insulin itself.
- a- Glucagon b- pancreatic lipase c- C-peptide d- pyruvate dehydrogenase
- 20- Binding of plasma insulin to a receptor results in phosphorylation of a ----- residue present in the polypeptide chain of the receptor protein.
- a- Tyrosine b- lysine b- isoleucine d- glycine

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Question 3- Complete the missing with the suitable words **10 marks**

- 1- The reaction of condensation of the ----- group of the glucose with some -----
----- can result in the formation of small amounts of ----- hemoglobin
- 2- Ingestion of fructose may be followed by a rise in plasma insulin, because conversion of
fructose to ----- in the ----- results in a rise in plasma glucose levels.
This conversion is quite rapid.
- 3- ----- is important only during the early stages of exercise (i.e., during
sudden bursts of work).
- 4- Glycemic load is based on the glycemic index (GI), and is calculated by -----

Question 4: Complete the missing **10 marks**

- 1- The fuels used by exercising muscle may be arranged in the following "hierarchy," where the
order of appearance approximates relative importance during exercise: **5 marks**

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2- What are the metabolic consequences of high blood glucose?

5 marks

Question Ended