

Course Title: Medical Biochemistry II

DT 2nd, Sec A

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Max Marks: 30

Note: There are TWO sections

Section A consist of 15 MCQs and 10 match column questions, each carry ONE mark with grand total of 25 marks.

Choose the appropriate option and write in the ANSWER section.

Section B consist of 2 short questions, with grand total of 5 marks

Write to the point answers, do not give explanation.

ATTEMPT all questions of Section A and Section B

SECTION A

1. Malnutrition means

- a. A person is not eating properly.
- b. May mean undernutrition or over nutrition.
- c. Someone is starved.
- d. Someone is eating too much.

2. The first reaction in the citric acid cycle is binding

- a. Carbon dioxide to a four-carbon (C4) molecule.
- b. Acetyl-CoA to a C4 molecule.
- c. Acetyl-CoA to a C5 molecule.
- d. Acetyl-CoA to citric acid.

3. Macronutrients that provide energy include all except:

- a. carbohydrate
- b. Proteins
- c. Fats
- d. Fiber

- 4. Which process produces both NADH and FADH₂?**
- The citric acid cycle
 - Glycolysis
 - Urea cycle
 - The preparatory reaction
- 5. Which nutrient provides the most amount of energy per gram?**
- Carbohydrate
 - Fats
 - Protein
 - Vitamin
- 6. At what age do people suffer the most from malnutrition?**
- Elderly
 - Teenagers
 - Elderly and Children
 - Teenagers and Children
- 7. The preparatory steps of glycolysis breaks**
- Glucose into pyruvates.
 - Pyruvates into glucose.
 - Glucose into glyceraldehyde-3-phosphate.
 - Pyruvates into acetyl-CoA and CO₂.
- 8. Which statement about glycolysis is correct?**
- Resulting pyruvate molecules are always directly incorporated into the Krebs cycle
 - Glycolysis cannot proceed under anaerobic conditions
 - Three molecules of NADH₂ and one molecule of FADH₂ are produced
 - Two net molecules of ATP are produced through substrate-level phosphorylation.

9. Which of the following is a product of glycolysis?

- a. GTP
- b. Glucose
- c. NADH
- d. Acetyl CoA

10. Which of the following biological processes will occur under both aerobic and anaerobic conditions in humans?

- a. Citric acid cycle
- b. Glycolysis
- c. Krebs cycle
- d. Urea cycle

11. Meat and fish provide the following important nutrient

- a. Carbohydrate
- b. Protein
- c. Lipid
- d. Fiber

12. Which of the following product is not created by aerobic glycolysis?

- a. Pyruvate
- b. Lactic acid
- c. NADH
- d. ATP

13. Which of the following is not include in the symptoms of kwashiorkor.

- a. Cracked and scaly skin
- b. Loss of appetite
- c. Excess sweating
- d. Learning disability

14. What is the definition of overweight?

- a. BMI > 18.5
- b. BMI 18.5 - 24.9
- c. BMI 25 - 29.9
- d. BMI 30 and higher

15. Which of the following is not true of the citric acid cycle?

- a. All enzymes of the cycle are located in the cytoplasm, except succinate dehydrogenase, which is bound to the inner mitochondrial membrane.
- b. In the presence of malonate, one would expect succinate to accumulate.
- c. Oxaloacetate is used as a substrate but is not consumed in the cycle.
- d. Succinate dehydrogenase channels electrons directly into the electron transfer chain.

Match column A with column B and write the correct option (only correct letter) in column C

Sr. No	A	B	C
16	Lactate	A polysaccharides starch	
17	Proper growth	B Macronutrient	
18	Urea	C Marasmus	
19	Swelling	D Triose	
20	Fiber	E Kwashiorkor	
21	Dietary carbohydrates	F Anaerobic glycolysis	
22	Enlarged liver	G Non toxic	
23	Pyruvate	H Balanced diet	

24	Low calorie intake	I	Unsaturated fat	
25	Canola oil	J	Edema	

SECTION B

26. Mention the products of Glycolysis? (2)

27. Write down the names of health issues associated with Obesity. (3)

ANSWERS

1	A	10	B	19	J
2	A	11	B	20	B
3	D	12	A	21	A
4	A	13	C	22	E
5	B	14	C	23	D
6	C	15	A	24	C
7	C	16	F	25	I
8	D	17	H	26	Ans:Products of glycolysis 1: 2 ATP 2: 2 pyruvate molecules (pyruvic acid) 3: 2 NADH 4: 2 H₂O (water molecules)
9	B	18	G	27	Ans: 1:Heart disease & stroke 2: High blood pressure

				<p>3:Diabetes</p> <p>4: Cancers specially breast cancer</p> <p>5:Gallbladder disease & Gallstones</p> <p>6:Osteoarthritis</p> <p>7: Gout</p> <p>8:Breathing problems such as sleep apnea (when a person stops breathing for short episodes during sleep) & asthma .</p>
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