

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?

- a. Resulting pyruvate molecules are always directly incorporated into the Krebs cycle
- b. Glycolysis cannot proceed under anaerobic conditions
- c. Three molecules of NADH_2 and one molecule of FADH_2 are produced
- d. 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 included 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	Candla 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	B	10	B	19	J
2	B	11	B	20	B
3	D	12	B	21	A
4	A	13	D	22	E

5	B	14	C	23	D
6	C	15	A	24	C
7	A	16	F	25	I
8	D	17	H	26	2 pyruvate, NADH 4ATP. (2ATP use) 2 ATP remaining
9	C	18	G	27	Heart disease, diabetes, high blood pressure, certain cancer, digestive problems, sleep apnea, osteoarthritis, strokes.