

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

- **Malnutrition means**
 - A person is not eating properly.
 - May mean undernutrition or over nutrition.
 - Someone is starved.
 - Someone is eating too much.

- **The first reaction in the citric acid cycle is binding**
 - Carbon dioxide to a four-carbon (C4) molecule.
 - Acetyl-CoA to a C4 molecule.
 - Acetyl-CoA to a C5 molecule.
 - Acetyl-CoA to citric acid.

- **Macronutrients that provide energy include all except:**
 - carbohydrate
 - Proteins
 - Fats

- Fiber

- **Which process produces both NADH and FADH₂?**
 - a. The citric acid cycle
 - b. Glycolysis
 - c. Urea cycle
 - d. The preparatory reaction

- **Which nutrient provides the most amount of energy per gram?**
 - Carbohydrate
 - Fats
 - Protein
 - Vitamin

- **At what age do people suffer the most from malnutrition?**
 - Elderly
 - Teenagers
 - Elderly and Children
 - Teenagers and Children

- **The preparatory steps of glycolysis breaks**
 - a. Glucose into pyruvates.
 - b. Pyruvates into glucose.
 - c. Glucose into glyceraldehyde-3-phosphate.
 - d. Pyruvates into acetyl-CoA and CO₂.

- **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?

- GTP
- Glucose
- NADH
- Acetyl CoA

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

- Citric acid cycle
- Glycolysis
- Krebs cycle
- Urea cycle

11. Meat and fish provide the following important nutrient

- Carbohydrate
- Protein
- Lipid
- Fiber

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

- Pyruvate
- Lactic acid
- NADH
- ATP

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

- Cracked and scaly skin
- Loss of appetite
- Excess sweating
- 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?

- All enzymes of the cycle are located in the cytoplasm, except succinate dehydrogenase, which is bound to the inner mitochondrial membrane.
- In the presence of malonate, one would expect succinate to accumulate.
- Oxaloacetate is used as a substrate but is not consumed in the cycle.
- 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	F
17	Proper growth	B	Macronutrient	H
18	Urea	C	Marasmus	G
19	Swelling	D	Triose	J
20	Fiber	E	Kwashiorkor	B
21	Dietary carbohydrates	F	Anaerobic glycolysis	A
22	Enlarged liver	G	Non toxic	E
23	Pyruvate	H	Balanced diet	D
24	Low calorie intake	I	Unsaturated fat	C
25	Canola oil	J	Edema	I

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
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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	<p>reactants (what we need)</p> <p>(1) 1 glucos</p> <p>(2) NAD</p> <p>(3) 2ATP</p> <p>END PRODUCTS;</p> <p>(1) 2 PYRUVATE</p> <p>(2) NADH</p> <p>(3) 4 ATP</p> <p>WE USE 2 ATP IN THIS PROCESS SO WE HAVE NET GAIN 2 ATP.</p>
	B	18	G	27	<p>(1) HEAT DISEAS STROKE</p> <p>(2) HIGH BLOOD PRESSURE</p> <p>(3) DIABETES</p> <p>(4) CANCERS SPEICALLY BREAST</p> <p>(5) GALLBLADER DISEAS AND GALL STONE</p> <p>(6) OSTEOARTHRITIS</p> <p>(7) GOUT</p> <p>(8) BREATHING PROBLEMS , SLEEP APNEA AND ASTHEMA</p>