

**Course Title: Medical Biochemistry II**  
**Radiology 2<sup>nd</sup>, Sec A**  
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**Max Marks: 30**

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**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**

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## **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 FADH<sub>2</sub>?**
  - a. The citric acid cycle
  - b. Glycolysis
  - c. Urea cycle
  - d. The preparatory reaction
  
- 5. Which nutrient provides the most amount of energy per gram?**
  - a. Carbohydrate
  - b. Fats
  - c. Protein
  - d. Vitamin
  
- 6. At what age do people suffer the most from malnutrition?**
  - a. Elderly
  - b. Teenagers
  - c. Elderly and Children
  - d. Teenagers and Children
  
- 7. 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 CO<sub>2</sub>.
  
- 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  $\text{NADH}_2$  and one molecule of  $\text{FADH}_2$  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 products 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

|          |          |           |          |           |          |
|----------|----------|-----------|----------|-----------|----------|
| <b>1</b> | <b>B</b> | <b>10</b> | <b>B</b> | <b>19</b> | <b>J</b> |
| <b>2</b> | <b>B</b> | <b>11</b> | <b>B</b> | <b>20</b> | <b>E</b> |
| <b>3</b> | <b>D</b> | <b>12</b> | <b>B</b> | <b>21</b> | <b>A</b> |
| <b>4</b> | <b>A</b> | <b>13</b> | <b>C</b> | <b>22</b> | <b>E</b> |
| <b>5</b> | <b>B</b> | <b>14</b> | <b>C</b> | <b>23</b> | <b>D</b> |
| <b>6</b> | <b>D</b> | <b>15</b> | <b>A</b> | <b>24</b> | <b>C</b> |
| <b>7</b> | <b>A</b> | <b>16</b> | <b>F</b> | <b>25</b> | <b>I</b> |
| <b>8</b> | <b>D</b> | <b>17</b> | <b>H</b> | <b>26</b> |          |
| <b>9</b> | <b>C</b> | <b>18</b> | <b>G</b> | <b>27</b> |          |

Paper biochemistry

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Name Asim Noor khan

ID 16240

Program BS radiology

Semester 2<sup>nd</sup>

Section A

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## SECTION B

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QNO.26) Mention the product of glycolysis?

Definition

The process in which glucose is broken down to give energy or pyruvate or lactate is known as glycolysis

- Step of glycolysis
- In first step glucose are converted into glucose 6 phosphate with the help of an Enzymes known as hexokinase enzymes
- In the second step glucose 6 phosphate are converted into fructose 6 phosphate With the help of an enzyme known as phosphoglucose isomerase

- In the third step fructose 6 phosphate are converted into fructose 1,6 bis phosphate with the help of an enzyme know as phospo fracto kinase
- In forth step fructose 1,6 bis phosphate are converted into DHAP and GAP
- In Fift step GAP are converted into 1,3 bis phospo glycerat by an enzyme know as glyceralde 3 phosphate dehydrogenase
- In 6<sup>th</sup> step 1,3 bis phospoglycerat are converted into phospoglycerat by an enzyme know as phospoglycerat kinase
- In 7<sup>th</sup> steps 3, phospoglycerat are converted into 2 phospoglycerat by an enzyme know as phospoglycerat maltase
- In the 8<sup>th</sup> steps 2 phospoglycerat are converted into PEP by an enzyme know as Enalase
- In the last steps PEP are converted into pyrovat by an enzyme know as private
- Kinase so the Last product of glycolysis is pyrovate

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Q NO.27) write down the name of health issue associated with the obesity?

ANS. Obesity

- Obesity is a complex disease involving an exsive amount of body fat
- Obesity is not just a cosmetic concern
- It is a medical problem that increase your risk of other disease and health problems such as heart disease diabetes and high blood pressure
- [Heart disease and stroke](#)
- OBESITY
- Obesity mack you more likely to have High blood pressure and abnormal cholesterol levels which are ricks factors for heart disease and stroke

## DIABETES

- Obesity can effect the way your body use insulin to control blood sugar levels the rise your risk of insulin resistance and diabetes

### CERTEN CANCER

- Obesity May increase your risk of cancer of the uterus overy

### DIGESTIVE PROBLEM

- Obesity increase the gallbladder disease and liver problems

### SEXAL PROBLEM

- Obesity May cause infertile

### OSTEO ARTHRITIS

- Obesity increase the stress placed on weights bring joints in addition

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