

**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 NADH<sub>2</sub> and one molecule of FADH<sub>2</sub> 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**

| <b>Sr. No</b> | <b>A</b>      |   | <b>B</b>               | <b>C</b> |
|---------------|---------------|---|------------------------|----------|
| 16            | Lactate       | A | polysaccharides starch | <b>F</b> |
| 17            | Proper growth | B | Macronutrient          | <b>H</b> |
| 18            | Urea          | C | Marasmus               | <b>G</b> |
| 19            | Swelling      | D | Triose                 | <b>J</b> |
| 20            | Fiber         | E | Kwashiorkor            | <b>B</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 |

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## SECTION B

**Q26. Mention the products of Glycolysis?**

**Ans. Products of Glycolysis;**

- 2-Net ATP
- 2-NADH
- 2-Pyruvate molecules
- 2-Molecules of Pyruvic acid

**Q27. Write down the names of health issues associated with Obesity.**

**Ans. Health Issues Associated with Obesity;**

- Heart Disease and stroke
- Certain cancers
- Sleep apnea
- Osteoarthritis
- Sexual problems
- Cardiac disease
- Diabetes

❖ Keys of MCQs;

|          |          |           |          |  |  |
|----------|----------|-----------|----------|--|--|
| <b>1</b> | <b>B</b> | <b>10</b> | <b>B</b> |  |  |
| <b>2</b> | <b>B</b> | <b>11</b> | <b>B</b> |  |  |
| <b>3</b> | <b>D</b> | <b>12</b> | <b>B</b> |  |  |
| <b>4</b> | <b>A</b> | <b>13</b> | <b>C</b> |  |  |
| <b>5</b> | <b>B</b> | <b>14</b> | <b>C</b> |  |  |
| <b>6</b> | <b>C</b> | <b>15</b> | <b>A</b> |  |  |
| <b>7</b> | <b>D</b> |           |          |  |  |
| <b>8</b> | <b>B</b> |           |          |  |  |
| <b>9</b> | <b>B</b> |           |          |  |  |