

[A-30]

No. of Printed Pages: 2

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**SARDAR PATEL UNIVERSITY**

**M. Sc. Semester- IV (Under CBCS) Examination - BIOCHEMISTRY**

**Thursday, 23<sup>rd</sup> April 2015**

**Time- 10:30am to 1:30pm**

**PS04CBIC02 Nutritional & Clinical Biochemistry**

**Marks: 70**

**Q.1 Mark the right answer of following questions.**

**[08]**

1. A calorie is the amount of energy necessary to raise the temperature of one gram of \_\_\_\_\_ by one degree \_\_\_\_\_.
  - a. Water, Fahrenheit
  - b. Water, Centigrade
  - c. Oil, Fahrenheit
  - d. Oil, Centigrade
  
2. What will be calorific value of a mix diet containing 15g of carbohydrates and 5 g of proteins, which upon burning in bomb calorimeter, raises the temperature of 5000g of water by 2 °C. The water equivalent of the calorimeter is 500 g.
  - a. 1.1 Kcal
  - b. 11 Kcal
  - c. 11,000 Kcal
  - d. 110000 calories
  
3. Lipids are digested and absorbed much \_\_\_\_\_ than carbohydrates.
  - a. Slower
  - b. Faster
  - c. Earlier
  - d. All of the above
  
4. A mild heat treatment that primarily destroys enzymes and reduces microbial load is called-
  - a. Pasteurization
  - b. Blanching
  - c. Sterilization
  - d. Commercial sterilization
  
5. Which of the following is involved in regulation of water metabolism?
  - a. Aldosterone
  - b. Thirst centre in brain
  - c. ADH
  - d. All of the above
  
6. Increased fatty acid oxidation is a characteristic of-
  - a. Starvation
  - b. Diabetes mellitus
  - c. Hypoglycaemia
  - d. All of the above
  
7. Which hormone regulates the blood glucose concentration?
  - a. Adrenaline
  - b. Glucocorticoids
  - c. Insulin
  - d. All of the above
  
8. Alcohol consumption can lead to fatty liver condition because
  - a. Alcohol is converted into fat
  - b. Alcohol activates fatty acid transport
  - c. Alcohol changes [NADH]/[NAD<sup>+</sup>] ratio
  - d. None of the above

- Q.2 Answer the following questions. (ANY SEVEN OUT OF NINE) [14]**
1. What is RDA? What is the RDA for energy requirement of moderate men and women?
  2. Write the advantages of starch as a source of carbohydrates.
  3. What is Glycaemic index? What is the effect of fibrous food on glycaemic index?
  4. What is biological value of protein? How is it measured?
  5. How will you differentiate between starvation and undernutrition?
  6. Justify- "Fats burn in the flame of carbohydrates".
  7. What are PUFA and MUFA recommended in the diet of obese and diabetic persons?
  8. Define hypokalaemia and hyperkalaemia.
  9. Enlist the factors regulating blood sugar level.
- Q.3 a. List the various method and instruments used for the determination of energy value of food. Explain any one in detail. [06]**
- b. Write a short note on: (i) Glycogen storage level [06]**  
**(ii) Factors affect blood metabolic rate.**
- OR**
- b. Write down the changes in carbohydrate, fat & protein metabolism in *Diabetes mellitus* [06]**
- Q.4 a. Write a note on Kwashiorkor. [06]**
- b. What is glycosuria? Explain in detail about the occurrence of glycosuria in different conditions. [06]**
- OR**
- b. What is polyol pathway? How does it cause diabetes specific complications? [06]**
- Q.5 a. Explain the causes and mechanism of development of obesity. [06]**
- b. Explain the effect of various hormones on activation of lipase. [06]**
- OR**
- b. What are the four major groups of lipoproteins? Describe the metabolic fate of Chylomicrons & VLDL from blood. [06]**
- Q.6 a. Describe the factors regulating water in the body. [06]**
- b. Explain the futile cycle of fat between adipose tissue and liver. [06]**
- OR**
- b. What are electrolytes? Explain the role of hormones in maintaining electrolyte balance. [06]**