

Q.1 Choose the most correct options for the following questions.

(08 marks)

1. If the liver contains 100 grams of carbohydrates, this represents  
(a) 400 calories                      (b) 100 Kcal                      (c) obese                      (d) 400 Kcal
2. Lipids are digested and absorbed much \_\_\_\_\_ than carbohydrates  
(a) slower                      (b) faster                      (c) earlier                      (d) all above are true
3. Plasma glucose concentration doesn't reduce further to 3.5 mM/L in prolonged starvation because  
(a) glycolysis is inhibited in the surrounding tissues                      (c) glycolysis is never inhibited  
(b) glucose transport is inhibited                      (d) none of the above
4. Diabetes specific microvascular diseases is a leading cause of  
(a) Blindness                      (b) Renal failure                      (c) nerve damage                      (d) all of the above
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. \_\_\_\_\_ is a numerical system of measuring the degree of rise in blood sugar in response to various carbohydrates taken in diet.  
(a) Glycemic Index                      (b) IGT                      (c) Threshold value                      (d) Carbohydrate index
7. Receptors for chylomicron remnant are  
(a) Apo A specific                      (b) Apo B-48 specific                      (c) Apo C specific                      (d) Apo E specific
8. Insulin activates \_\_\_\_\_ enzyme to transform excess carbohydrate in the diet to get converted into fat  
(a) Acetyl Co-A ACP transferase                      (c) Malonyl Co-A ACP transferase  
(b) Acetyl- Co-A carboxylase                      (d) none of the above

[P.T.O.]

Q.2 Answer any seven of the following questions in brief:

(14 marks)

1. What is an average daily energy requirement of a moderately active adult male and female?
2. What will be the energy value of 2gm of wheat when combusted in bomb calorimeter. raised the temperature of 3kg of water from 23° C to 26° C. The water equivalent of calorimeter was about 500gm.
3. What is Respiratory quotient? Write R.Q. of body at post absorptive state.
4. Which lipoprotein is lower in the serum of an obese?
5. Name the sites of biosynthesis of LDL, VLDL, HDL and Chylomicrons.
6. List four hypothesis explaining chronic diabetes-specific complications.
7. Which enzyme is deficient in Phenylketonuria?
8. Which lipoprotein is responsible for causing Ischaemic Heart Disease?
9. Distinguish between normal Glucose Tolerance (NGT) and Impaired Glucose Tolerance (IGT).

Q3(a) What is the energy value of food? Differentiate between physiological energy value and energy value obtained using bomb calorimeter. (06)

(b) What is Insulin Resistance? Describe how Insulin Resistance develops into Diabetes mellitus. (06)

OR

(b) What is Polyol pathway? What are its detrimental effects? (06)

Q4 (a) Explain three major methods to evaluate nutritional quality of proteins – PER, NPU and NPR. (06)

(b) Explain the metabolic adaptation in prolonged starvation. (06)

OR

(b) Explain protein-energy malnutrition. (06)

Q5 (a) Describe the metabolic fate of Chylomicrons and VLDL from blood. (06)

(b) Explain the causes and mechanism of development of obesity. (06)

OR

(b) What are essential fatty acids? Discuss their physiological functions. (06)

Q6 (a) Explain regulation of water metabolism in the body. (06)

(b) Describe any two methods of food preservation. (06)

OR

(b) Describe loss of vitamins during food processing. (06)

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