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**COLLEGE: MEDICINE AND HEALTH SCIENCES**

**DEPARTMENT: MEDICINE AND SURGERY**

**COURSE: MEDICAL BIOCHEMISTRY IV**

**COURSE CODE: BCH 313**

**ASSIGNMENT TITLE: DIABETES, OBESITY AND CANCER**

**LEVEL: 300**

## **QUESTION**

Group 2 Category

1. Define the following terms
  - a. Ketogenesis
  - b. Ketonaemia
  - c. Ketonuria
  - d. Ketogenesis
2. What are the consequences of ketosis.
3. Write concisely on the management of ketoacidosis.

## **ANSWER**

1.
  - a. Ketogenesis: ketogenesis is a catabolic pathway of metabolism. In this process, fatty acids and certain ketogenic amino acids are broken down to derive energy by alternative means. Ketone bodies are produced in the ketogenesis process. Ketogenesis is preferred to compensate for energy requirements in certain cases like starving and in low-carb diets.
  - b. Ketonaemia: This is defined as the presence of recognizable concentrations of ketone bodies in the plasma.
  - c. Ketonuria: Ketonuria is the presence of excess amounts of ketone bodies in the urine. This condition is also called ketoaciduria and acetonuria. It is common in individuals who have diabetes.
  - d. Ketogenesis: ketogenesis is a catabolic pathway of metabolism. In this process, fatty acids and certain ketogenic amino acids are broken down to derive energy by alternative means. Ketone bodies are produced in the ketogenesis process. Ketogenesis is preferred to compensate for energy requirements in certain cases like starving and in low-carb diets.

## 2. Consequences of Ketosis

a. **Ketoacidosis:** A few cases of ketoacidosis (a serious condition that occurs in uncontrolled diabetes) have been reported in breastfeeding women, likely triggered by a very low-carbohydrate diet. However, this is extremely rare.

b. **Kidney stones:** Although uncommon, some epileptic children have developed kidney stones on a ketogenic diet.

c. **Raised Cholesterol Levels:** Some people get increased total and low-density lipoprotein (LDL) cholesterol levels.

d. **Constipation:** This is common because people on a ketogenic diet lack enough fibre and fluids. Some people may also get diarrhea, but its less common.

## 3. Management of Ketoacidosis

Diabetes Ketoacidosis is managed by replacing fluid and electrolytes (particularly potassium loss), and administering short-acting insulin to gradually correct hyperglycemia without precipitating hypoglycemia. More ways to manage ketoacidosis is by correction of acid-base balance and treatment of concurrent infection, if present.