


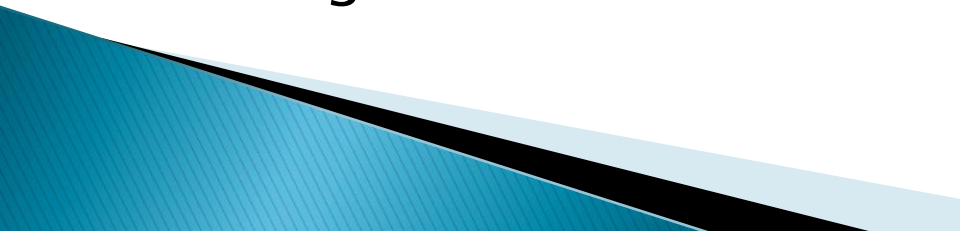
**Topic: Nutrition**  
**Class: B.Sc Part -III (Hons.)**  
**Paper- V**  
**Group - B**

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# Obesity

- ▶ With obesity at high rates in the United States, there is a public health focus on reducing obesity and associated health risks,
- ▶ which include diabetes, colon and breast cancer, and cardiovascular disease. How does the food consumed contribute to obesity?
- ▶ Fatty foods are calorie-dense, meaning that they have more calories per unit mass than carbohydrates or proteins.
- ▶ One gram of carbohydrates has four calories, one gram of protein has four calories, and one gram of fat has nine calories.

- ▶ Animals tend to seek lipid-rich food for their higher energy content. Greater amounts of food energy taken in than the body's requirements will result in storage of the excess in fat deposits.
  - ▶ Excess carbohydrate is used by the liver to synthesize glycogen. When glycogen stores are full, additional glucose is converted into fatty acids.
  - ▶ These fatty acids are stored in adipose tissue cells—the fat cells in the mammalian body whose primary role is to store fat for later use.
  - ▶ The rate of obesity among children and healthcare providers to ensure that children have access to healthy foods—more fruits, vegetables, and whole grains—and consume fewer calories from processed foods.
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- ▶ There are many organs that work together to digest food and absorb nutrients.
  - ▶ The mouth is the point of ingestion and the location where both mechanical and chemical breakdown of food begins.
  - ▶ Saliva contains an enzyme called amylase that breaks down carbohydrates.
  - ▶ The food bolus travels through the esophagus by peristaltic movements to the stomach.
  - ▶ The stomach has an extremely acidic environment.
  - ▶ The enzyme pepsin digests protein in the stomach.
  - ▶ Further digestion and absorption take place in the small intestine.
  - ▶ The large intestine reabsorbs water from the undigested food and stores waste until elimination.
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- ▶ Carbohydrates, proteins, and fats are the primary components of food.
  - ▶ Some essential nutrients are required for cellular function but cannot be produced by the animal body.
  - ▶ These include vitamins, minerals, some fatty acids, and some amino acids.
  - ▶ Food intake in more than necessary amounts is stored as glycogen in the liver and muscle cells, and in adipose tissue.
  - ▶ Excess adipose storage can lead to obesity and serious health problems.
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