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BATCH # 059
ASSIGNMENT # 3
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Q: Write Dengue and Hepatitis (definitions, symptoms, causes, preventive measures).

DENGUE

Definition:

Dengue (break-bone fever) is a viral infection that is more common in tropical and subtropical climates.

Causes:

Dengue viruses are the main causative agents that spread to people through the bite of an infected *Aedes* species mosquito.

Symptoms:

The most common dengue symptom is fever alongside with

- Headache
- Muscle, bone or joint pain
- Nausea
- Vomiting
- Rash
- Pain behind the eyes

Preventive Measures:

Prevention depends on control and protection from the bites of the mosquito that transmits it. The primary preventive measures includes:

- The elimination of *Aedes* species mosquito's habitats.
- Generalized spraying with organophosphate or pyrethroid insecticides.
- Reducing open collections of water through environmental modification.
- People can prevent mosquito bites by wearing clothing that fully covers the skin.
- Vaccination is also available to prevent dengue.

HEPATITIS

Definition:

Hepatitis means inflammation of the liver. It can lead to liver dysfunction and even cirrhosis.

Causes:

Hepatitis can be caused by:

- Excessive Alcohol intake
- Chemicals & Drugs overdose
- Autoimmune hepatitis
- Viral hepatitis (A, B, C, D & E)

Symptoms:

General symptoms of hepatitis include:

- Malaise
- Fatigue
- Jaundice
- Dark-colored urine
- Light colored stools
- Abdominal pain & tenderness, especially in the upper right corner
- Nausea with or without vomiting
- Abdominal swelling

Prevention:

The methods to prevent the spread of hepatitis include:

- Don't share needles to take drugs.
- Don't use an infected person's personal items.
- Practice good personal hygiene such as frequent hand washing with soap and water.
- Get vaccines that are available.
- Maintain healthy diet and nutritional habits.

Q: Write a note on classification of proteins, fats and carbohydrates.

CARBOHYDRATES

Definition:

The body's primary source of energy is called carbohydrates. It is a biomolecule consisting of carbon, hydrogen and oxygen atoms.

Classification:

Carbohydrates are classified as:

① Monosaccharides

They are the simplest forms of sugar and the most basic unit of all carbohydrates.

e.g: Glucose, mannose, galactose, fructose etc.

② Disaccharides

Disaccharides are comprised of two monosaccharides bonded together, by glycosidic linkage.

e.g:

Sucrose, lactose, maltose etc

③ Oligosaccharides

Oligosaccharides represent carbohydrates that contain between

3 to 10 simple sugars.

e.g.:

Raffinose, stachyose, verbasose

④ Polysaccharide

They are long chain polymeric carbohydrates composed of monosaccharide units bound together by glycosidic linkages.

e.g.:

Starch, glycogen, cellulose etc

PROTEINS

Definition:

Proteins are large biomolecules that comprises peptide-bonded amino acids.

Classification:

On the structural basis proteins are classified as following.

① Primary proteins

Protein structure is a sequence of amino acids in a chain.

e.g.: The first 6 amino acids in hemoglobin (valine, histidine, leucine etc)

② Secondary proteins

Protein structure formed by folding & twisting of amino acid chains is called secondary proteins.

e.g: α helix & the β pleated sheet

③ Tertiary Proteins

Protein structure formed when the twists and folds of the secondary structure fold again to form a larger three dimensional structure is called tertiary proteins.

e.g:

Myoglobin etc

④ Quaternary Proteins

Quaternary protein structure is a protein consisting of more than one folded amino acid chain

e.g:

Insulin etc

FATS

Definition:

Fats are nutrients in food that the body uses to build cell membranes, nerve tissue (including the brain) and hormones.

Classification:

① Saturated Fats

They tend to stay solid at room temperature, due to the

strong single bond. It is responsible for bad cholesterol.

e.g.: Fats in sausages, cheese, beef, cookies etc

② Unsaturated fats

They are of 2 types:

→ Mono-unsaturated fats

→ Poly-unsaturated fats

→ Monounsaturated fats

These are healthy fats and plays vital role in protecting the heart and supporting healthy energy levels.

→ Polyunsaturated fats

They are also healthy fats which are abundantly found in both plants and animal foods. These fats include both Omega 3 & Omega 6 fats.

③ Trans fats

Trans fats are made by heating liquid vegetable oils by hydrogenation