FREQUENTLY ASKED QUESTIONS

Q1) What is the importance of water in human nutrition?

Ans) Water is the most abundant substance in the human body as 70% of the human body is comprised of water. The most important functions performed by water are:

1. Most reactions in our bodies (of which there are millions every second) will not take place unless the reactants are dissolved.

2. Almost every cell in our body is bathed in interstitial fluid which is almost entirely water.

3. Most of the molecules in our body are suspended in water and are thus able to come into contact with other molecules.

4. Water is a great stabiliser of body temperature. It absorbs and releases heat very slowly.

5. Water also acts as a lubricating medium. It is the major part of mucous and other lubricating fluids.

7. Finally, water is the flushing medium which is used to clean the kidneys.

Q2) Describe briefly the chemical composition of fruits?

Ans) The composition of fruits is strongly influenced by the variety and ripeness. But the main constituents in fruits are sugar, polysaccharides, and organic acids, while N- compounds and lipids are present in lesser amounts. Minor constituents include pigments and aroma substances of importance to sensory quality, and vitamins and minerals of nutritional importance.

Q3) What are different fiber associated substances found in fruits?

Ans.) Saponins, phylates, tannins, lectins, and enzyme inhibitors.

Q4) What are dietary fibers?

Ans.) Functional fiber consists of isolated, nondigestible carbohydrates that have beneficial physiologic effects . Dietary fiber includes polysaccharides, oligosaccharides, lignin, and associated plant substances. Dietary fibers promote beneficial physiological

effects including laxation, and/or blood cholesterol attenuation, and/or blood glucose attenuation.

Q5) What are carotenoids?

Ans.) Carotenoids are red, orange, or yellow tetraterpenoids. They function as accessory pigments in plants, helping to fuel photosynthesis by gathering wavelengths of light not readily absorbed by chlorophyll. The most familiar carotenoids are carotene (an orange pigment found in carrots), lutein (a yellow pigment found in fruits and vegetables), and lycopene (the red pigment responsible for the color of tomatoes).

Q6) How does calcium delay ripening?

Ans.) Ripening is delayed by calcium as it reduces the production rates of CO2 and ethylene and also reduces the incidences of physiological disorders, and thus extends the storage life of fruits.

Q7) Why should we consume fruits?

Ans.) Fruits are rich sources of antioxidants, substances that can help prevent free radicals from damaging the body's cells and in turn can slow or even prevent certain types of cancer. The bright colors of fruit and vegetables can indicate high levels of antioxidants, so consuming a variety of different-colored produce every day is a great strategy to ensure you're consuming many types of antioxidants. Many fruits are also high in calcium, a nutrient that may reduce your risk of colon cancer. Fruits with their high fiber content, can also help fight off deadly cardiovascular disease and heart conditions. Dietary fiber can lower cholesterol levels and blood pressure when eaten instead of high-fat, high-sodium foods.

Q8) Name some unsaturated fatty acids?

Ans.) linoleic acid , linolenic acid, docosa hexanoxic acid (DHA), etc.

Q9) What are anti oxidants?

Ans.) Anti oxidants are present in large amounts in fruits as polyphenols and anthocyanins, which can play an important role in absorbing and neutralising free radicals or decomposing peroxides.

Q10) What are phenolic compounds?

Ans.) Polyphenols are naturally occurring compounds found largely in the fruits, vegetables, cereals and beverages. Polyphenols are secondary metabolites of plants and are generally involved in defense against ultraviolet radiation or aggression by pathogens.

Q11) What are Reactive Oxygen Species (ROS)?

Ans.) Reactive oxygen species (ROS) are chemically reactive molecules containing oxygen. Examples include oxygen ions and peroxides.However, during times of environmental stress (e.g., UV or heat exposure), ROS levels can increase dramatically.This may result in significant damage to cell structures. damage of DNA, oxidations of polyunsaturated fatty acids in lipids (lipid per-oxidation), oxidations of amino acids in proteins, oxidatively inactivate specific enzymes by oxidation of co-factors cumulatively, this is known as oxidative stress.

Q12) What do you mean by energy producing nutrients?

Ans.) The physiological functions of the body could only be possible when there is sufficient energy supply to the body and there are only three nutrients that provide energy to the body when metabolized. These include, carbohydrates, fats and proteins and as these nutrients provide energy to the body they are known as energy producing nutrients.

Q13) what are bio active compounds?

Ans) Bio active compounds are extra-nutritional constituents that typically occur in small quantities in foods (such as fruits, vegetables, nuts, oils, and whole grains). They have actions in the body that may promote good health. They are being studied in the prevention of cancer, heart disease, and other diseases. Examples of bioactive compounds include lycopene, resveratrol, lignan, tannins, and insoles, etc.

Q14) What is the difference between maturity and ripening?

Ans) Maturation is the stage of development leading to the attainment of physiological or horticultural maturity. Physiological maturity is the stage of development when a plant or plant part will continue ontogeny even if detached. Horticultural maturity is

the stage of development when a plant or plant part possesses per-requisites for utilization by consumers for a particular purpose. Whereas ripening is the composite of processes that occur from latter stages of growth and development through early stages of senescence that results in characteristic, aesthetic and/ or food quality, as evidenced by changes in composition, texture, color, or other sensory attributes.

Q15) What are the major compositional changes that take place during maturity?

Ans.) The composition of fruits is strongly influenced by the variety and ripeness. As the fruit approaches maturity, sugar content increases while starch, acid, and tannin content decreases. In addition to that there starts development of certain volatile compounds which give the fruit its characteristic aroma. There is also degradation of chlorophyll and development of anthocyanins and carotenoids during ripening.