

Q No: 05

Q(a)

Differentiate between food Contaminants and food adulterants.

ASPECT	FOOD CONTAMINANTS	FOOD ADULTERANTS
Definition	Unintended harmful substances that enter food accidentally	Deliberately added substance to increase quantity, improve look, or reduce cost.
Nature	accidental, not intentional	intentional, fraudulent
Source	Environment, Processing, packaging, Storage, or handling	Producers / sellers for economic gain
Impact on food	Lower safety and may cause poisoning / disease	Reduce quality, nutrition, and may cause toxicity
Purpose	No purpose, occur due to the negligence or pollution	Economic benefit by cheating consumers.
Examples	Pesticides residues, heavy metals, aflatoxins, bacteria (E. coli, Salmonella)	water in milk, brick powder in chilli (terracotta), Honey with sugar, Artificial ripening.



Q(b)

Enlist major food groups based on nutrients, their functions and sources

Food group	Nutrient(s)	Function	Sources
✓ Energy giving foods	Carbohydrates	Provide energy for body function & physical activity	Rice, wheat, maize, bread, sugar, grains
✓ Body building and repair food	Proteins	Growth, repair, and maintenance of body tissues (enzyme, hormone)	Meat, fish, egg, milk, beans, lentils, nuts, soy.
✓ Energy reserve food. Fats & oils.	Fats, Essential fatty acids.	Concentrated energy insulation, absorb fat	Butter, Ghee, oils, nuts, seeds, vegetable oils.
✓ Vitamins Protective food	Vitamins (A, B, C, D, E and K) Comp	Regulate body processing Immunity, vision, bone health, healing	Carrots, citrus fruits, Spinach, fish, fortified milk & cereals, nuts, vegetables and fruits.
✓ Minerals Protective food	Minerals (Fe, Ca, Zn, P, K, Na etc)	Bones and teeth health, Oxygen transport, thyroid function, enzyme activity	Milk, cheese, liver, Spinach, beans, Iodized salt, seafood, whole grains
Water	Water	Fluid balance, digestion, nutrient transport, temperature regulation	Drinking water, milk, soups, watermelon YOUSAF PAPER

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Q.2)

Deficiency of vitamins causes different human diseases. Some of which are given in table below. Choose the correct type of vitamin from the box and write in front of each disease.

Vitamin A, Vitamin B<sub>1</sub>, Vitamin C, Vitamin D, Vitamin E, Vitamin K.

Diseases caused due to lack of	Name of the vitamin
1: Poor night vision	Vitamin A
2: Bleeding gums	Vitamin C (ascorbic acid)
3: Rickets in children	Vitamin D (cholecalciferol)
4: Beri-Beri	Vitamin B <sub>1</sub> (thiamin)
5: <del>Anaemia</del> Anaemia	Vitamin E (Tocopherol)

THIS ANSWER IS TOO SHORT  
EXPLAIN IN DETAIL 2/5