

8. Health and Hygiene - Food for living

Multiple Choice Questions

1. Question

The nutrient required in trace amounts to accomplish various body functions is _____

- A. Carbohydrate
- B. Protein
- C. Vitamin
- D. Fat

Answer

Vitamins are the only nutrients which are required in trace amounts to accomplish various body functions.

All other nutrients given in options i.e. carbohydrate, protein and fats act as a major source of energy and building blocks for the body. Therefore, they are required in a large amount as compared to vitamins which are required in a small amount to carry out essential body functions.

2. Question

The physician who discovered that scurvy can be cured by ingestion of citrus fruits is _____

- A. James Lind
- B. Louis Pasteur
- C. Charles Darwin
- D. Isaac Newton

Answer

James Lind was the physician who discovered that scurvy can be cured by citrus fruits.

All other scientists given in the options like Louis Pasteur discovered the pasteurization and vaccination, Charles Darwin gave the concept of Natural selection and Issacs Newton is related to the discovery of laws of motion.

Therefore, correct answer is (a) James Lind.

3. Question

The sprouting of onion and potatoes can be delayed by the process of _____

- A. Freezing
- B. Irradiation
- C. Salting
- D. Canning

Answer

Freezing is the process in which vegetables are stored at a temperature at 0°C. At this temperature, there is no growth of microorganisms and all metabolic reactions are delayed.

Sprouting is the process of germination of seeds. Since all metabolic reactions are delayed in freezing there will be no sprouting.

4. Question

Food and Adulteration Act was enacted by Government of India in the year _____

- A. 1964
- B. 1954
- C. 1950
- D. 1963

Answer

In 1954 Government of India enacted the food laws i.e. food and adulteration act.

5. Question

An internal factor responsible for spoilage of food is _____

- A. Wax coating
- B. Contaminated utensils
- C. Moisture content in food
- D. Synthetic preservatives

Answer

Internal factor here refers to the factor which is present inside the food and cause its spoilage. The internal factor responsible for spoilage of food is their moisture content as it provides medium to the bacteria to grow.

All other options like wax coating, contamination of utensils and synthetic preservatives cause spoilage of food as external factors as they are not present inside the food.

Fill In the Blanks

1. Question

Deficiency diseases can be prevented by taking the _____ diet.

Answer

Deficiency diseases can be prevented by taking the Balanced diet.

Deficiency diseases include all those diseases which occur due to deficiency of any nutrient in the body. These diseases can be prevented by taking a balanced diet because a balanced diet will fulfill all nutrient requirements of the body and as there will be no deficiency of any nutrient, so there will be no deficiency disease.

2. Question

The process of affecting the natural composition and the quality of food substance is known as ____.

Answer

The process of affecting the natural composition and the quality of food substance is known as Adulteration.

Addition and subtraction of any component of the food affect the natural composition of food in some way or the other. Since this process adulterates the natural composition, this process is known as adulteration.

3. Question

Vitamin D is called _____ vitamin as it can be synthesized by the body from the rays of the sun.

Answer

Vitamin D is called Sunshine vitamin as it can be synthesized by the body from the rays of the sun.

Since the human body can synthesize Vitamin D as sun rays fall on the human body. This vitamin is known as Sunshine vitamin. It does so by converting dehydro cholesterol into vitamin D as sun rays fall on the body.

4. Question

Dehydration is based on the principle of removal of ____.

Answer

Dehydration is based on the principle of removal of Water.

Hydration refers to the process of addition of moisture and water. Hydro means water. So, dehydration is the process which is based on the removal of water.

The name Dehydration itself suggests the principle involved because “De” means Removal and “Hydration” refers to water.

5. Question

Do not purchase food beyond the date of ____.

Answer

Do not purchase food beyond the date of Expiry.

Date of expiry represents the date before which the product can be used and do not cause any harmful effect on the body. Using the product beyond the expiry date can cause any type of harm.

Therefore, we should not purchase any food beyond the expiry date.

6. Question

AGMARK is used to certify ____ and ____ products in India.

Answer

AGMARK is used to certify Agriculture and Livestock products in India.

AGMARK is a quality control agency which checks for all the minimum standards in the agricultural and livestock product according to the consumer use. So, that no harm is caused to the consumer due to this product. It certifies the products which are according to standards and is not harmful.

True or False

1. Question

Iron is required for the proper functioning of thyroid gland.

Answer

Given statement is false. The correct statement is as follows:

Iodine is required for the proper functioning of the thyroid gland.

2. Question

Vitamins are required in large quantities for normal functioning of the body.

Answer

Given statement is false. The correct statement is as follows:

Vitamins are required in small quantities for normal functioning of the body.

3. Question

Vitamin C is a water-soluble Vitamin.

Answer

Given statement is true.

4. Question

Lack of adequate fats in diet may result in low body weight.

Answer

Given statement is true.

5. Question

ISI mark is mandatory to certify agricultural products.

Answer

Given statement is false. The correct statement is as follows:

AGMARK is mandatory to certify agricultural products.

OR

ISI is mandatory to certify industrial products.

Match The Following**1. Question**

Match the following

A	B
1. Calcium	a. Muscular fatigue
2. Sodium	b. Anaemia
3. Potassium	c. Osteoporosis
4. Iron	d. Goiter
5. Iodine	e. Muscular cramps

Answer

A	B
1. Calcium	c. Osteoporosis
2. Sodium	e. Muscular cramps
3. Potassium	a. Muscular fatigue
4. Iron	b. Anemia
5. Iodine	d. Goiter

This table depicts the minerals and the diseases associated due to their deficiency.

Fill In the Blanks with Suitable Answer

1. Question

Fill in the blanks with suitable answers.

Vitamin	Rich source	Deficiency disease
Calciferol	_____	Rickets
_____	Papaya	Night blindness
Ascorbic acid	_____ sprouts, leafy _____	_____
_____	Whole grains	Beri

Answer

Vitamin	Rich source	Deficiency disease
Calciferol	<u>Sunlight (synthesized in the body in presence of sunlight), eggs, fishes</u>	Rickets
<u>Retinol</u>	Papaya	Night blindness
Ascorbic acid	<u>Citrus fruits, sprouts, leafy vegetables</u>	<u>Scurvy</u>
<u>Thiamine</u>	Whole grains	Beri Beri

Complete the Sentence

1. Question

Unscramble the words in the brackets to complete the sentence

Salting is a process involving the addition of _____(aslt) removes the ____ (Witmer) content in the ____ (dof) by the process of _____ (sosisom) and prevents the growth of _____ (artcaeib).

Answer

Salting is a process involving the addition of SALT (aslt) removes the MOISTURE (Witmer) content in the FOOD (dof) by the process of OSMOSIS (sosisom) and prevents the growth of BACTERIA (artcaeib).

Abbreviations

1. Question

Give abbreviations for the following food standards

- i. ISI – _____
- ii. FPO – _____
- iii. AGMARK - _____
- iv. FCI- _____
- v. FSSAI – _____

Answer

- i. ISI – Indian Standards Institution
- ii. FPO – Fruit Process Order
- iii. AGMARK - Agriculture Marking
- iv. FCI- Food Corporation of India
- v. FSSAI – Food Safety and Standards Authority of India

Assertion and Reason Type

1. Question

Direction: In the following question, a statement of an Assertion is given and a corresponding Reason is given just below it. Of the statements given below, mark the correct answer as:

Assertion: Haemoglobin contains iron.

Reason: Iron deficiency leads to anaemia.

- A. If both Assertion and Reason are true and the Reason is the correct explanation of Assertion.
- B. If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- C. If Assertion is true but Reason is false.
- D. If both Assertion and Reason is false.

Answer

Anaemia is caused due to deficiency of blood and blood contains Haemoglobin. For the formation of Haemoglobin iron is required and as there will be a deficiency of iron, no hemoglobin will be formed and ultimately the person will suffer from anaemia.

Therefore, both assertion and reason are true and reason is the correct explanation of assertion.

1. Question

Direction: In the following question, a statement of an Assertion is given and a corresponding Reason is given just below it. Of the statements given below, mark the correct answer as:

Assertion: AGMARK is a quality control agency.

Reason: ISI is a symbol of quality.

A. If both Assertion and Reason are true and the Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason is false.

Answer

AGMARK is a quality control agency for agricultural and livestock products and symbol of quality is Agmark.

Whereas ISI is a symbol of quality but it is not certified by AGMARK, as it is related to the quality of industrial products.



Figure: Turmeric powder packet with quality sign AGMARK on it



Figure: A pressure cooker (industrial product) containing ISI symbol

Very Short Answer Type

1. Question

Differentiate

- Kwashiorkar from Marasmus
- Macronutrients from micronutrients

Answer

- Kwashiorkar from Marasmus

KWASHIORKAR	MARASMUS
• This disease takes place due to deficiency of proteins.	• This disease takes place due to deficiency of carbohydrates, proteins and fats.
• It takes place in children of age group 1-5 years.	• It takes place in infants which are below 1 year.
• In this the diet taken is rich in carbohydrates but is deficient in proteins.	• In this the diet taken is deficient in all carbohydrates, proteins and fats.



Figure: Children suffering from Kwashiorkar



Figure: Infant suffering from marasmus

b)

Macronutrients	Micronutrients
• These are the nutrients which are required by the body in large amounts.	• These are the nutrients which are required by the body in less or minute amounts.
• These provide energy to the body for its various activities.	• They carry out some vital functions associated with each micronutrient.
• Example- Carbohydrates, Proteins, Fats	• Example- Vitamins, Minerals

2. Question

Give reasons why salt is used as preservative in food.

Answer

Following are the reasons for using salt as a preservative:

- Salt removes the moisture content by osmosis process. Since moisture is the internal factor responsible for the spoilage of food, removal of water by salt prevents spoilage of food.
- Salt prevents the growth of the bacteria which are mainly responsible for spoilage of food by removing the moisture of food and also due to high salt content change in the pH take place due to which bacteria find hard to grow in food having high salt content and thus spoilage is prevented.

3. Question

What is an adulterant?

Answer

Adulterant is any component whose addition or subtraction to and from the food causes a change in the natural composition of food and change in quality of food takes place.

For example Brick powder act as an adulterant in chili powder.

Seeds of papaya act as adulterant in black pepper.

4. Question

A doctor advised an adolescent girl who is suffering from anaemia to include more leafy vegetables and dates in her diet. Why so?

Answer

Anaemia is a disease which takes place due to deficiency of haemoglobin. Iron is an important component of haemoglobin and is required for its formation. So, it refers that deficiency of iron leads to anaemia.

The doctor has advised the girl to take leafy vegetables and dates in her diet because they are a rich source of iron. As the requirement of iron is fulfilled in the body there will be enough haemoglobin in the body and the girl will no longer suffer from the anaemia.

So, in order to cure the girl from anaemia doctor has advised leafy vegetables and dates to the girl.

5. Question

Name any two naturally occurring toxic substances in food.

Answer

Prussic acid in seeds of apple, poisonous mushrooms are two naturally occurring toxic substances in food.

6. Question

What factors are required for the absorption of Vitamin D from the food by the body?

Answer

Following are the factors required for the absorption of vitamin D from the food by the body:

- Vitamin D is a fat soluble vitamin. Therefore, for the absorption of vitamin D fats must be there in our body.
- Digestion of fats should be proper because vitamin D will be absorbed along with fats being a fat-soluble vitamin.

Short Answer Type

1. Question

Write any one function of the following minerals

(a) Calcium

(b) Sodium

(c) Iron

(d) Iodine

Answer

(a) Calcium is a macronutrient and is required in large amounts by our body. There are various bodily functions which are controlled by calcium.

Function- It plays important role in muscle contraction.

(b) Sodium is a macronutrient and is required in large amounts by our body. There are various bodily functions which are controlled by sodium.

Function- It is involved in the transmission of impulses through nerve cells.

(c) Iron is a micronutrient and is required in trace amounts.

Function: It is an important component of haemoglobin and is required for its formation.

(d) Iodine is a micronutrient and is required in trace amounts.

Function: It is required by thyroid gland for synthesis of its hormones.

2. Question

Explain any two methods of food preservation.

Answer

Following are two methods of food preservation:

- **Dehydration:**

As the name itself suggests dehydration refers to a process of removing water or moisture. Water is an internal factor responsible for the spoilage of food. Removal of water can prevent spoilage of food.

This can be done by drying the food products in the presence of sunlight (as we do with cereals), in the presence of hot air (as we do with potato flakes). All these methods help in vaporizing water and thus prevent the spoilage of food.



Figure: Hot air-dried potato flakes

- **Freezing:**

In this, the food is stored at very low temperature i.e. at 0°C. At this temperature, all the metabolic and chemical processes are reduced. Due to this, no bacteria can grow as no metabolic and chemical process can take place. Also, 0°C is not the optimum temperature for the growth of many microorganisms. Thus, the spoiling of food is prevented.



Figure: Preservation of food through freezing

3. Question

Sanjana wants to buy a jam bottle in a grocery shop. What are the things she should observe on the label before purchasing it?

Answer

Following are the things that she should observe on the label before purchasing it:

- Name of the product: We should look for the name of the product.
- Details of the manufacturer: We should look for the details of the manufacturer in order to know about the company who had made that particular product.
- Ingredients: It indicates the components that product contains.
- Net weight: It indicates the amount of the particular product.
- Maximum retail price: It indicates the maximum price that can be charged for that product.
- Date of manufacture: It indicates the date on which the product is manufactured.
- Date of expiry: It indicates the date before which the product is best to use and would not cause any harmful effect.
- Standardises marks: It indicates the standards of the product, quality of the product.

All the things mentioned above must be checked in order to know the complete details of the product before buying. So, that we always buy a trusted product.

4. Question

Give one reason for the following statements:

- a. Salt is added as a preservative in pickles.
- b. We should not eat food items beyond the expiry date.
- c. Deficiency of calcium in the diet leads to poor skeletal growth.

Answer

(a) Salt helps in removal of moisture from the food by the process of osmosis. Removal of moisture prevents the spoilage of food. Therefore, salt is added as a preservative in pickles.

(b) We should not eat food items beyond expiry date because their consumption beyond the expiry date can cause harmful effect on our body.

(c) Calcium is an important component of bones. It is a macronutrient. Bones are formed by calcium. Since it is required in large amount for the bone formation deficiency of it leads to poor skeletal growth. As the requirement of calcium is not fulfilled there is no proper development of bones and there is poor skeletal growth.

5. Question

What are the effects of consuming adulterated food?

Answer

Adulteration is a serious issue which contaminates the food and affects its natural composition by addition or subtraction of any component in the food.

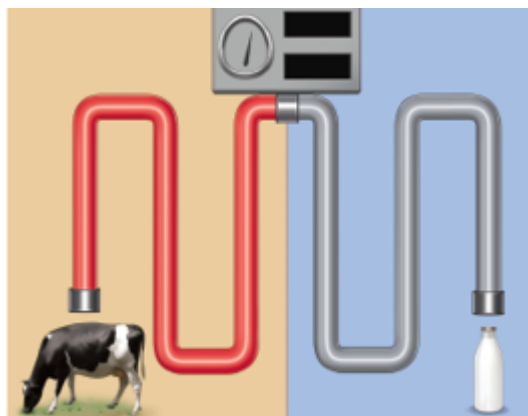
There are various bad effects of consuming adulterated food like- Diarrhoea, nausea, vomiting, fever, different kind of allergies, gastrointestinal disorders, kidney and liver failure etc.



Figure: This picture represents the effects of adulterated food

6. Question

Look at the picture and answer the question that follows:



- Name the process involved in the given picture.
- Which food is preserved by this process?
- What is the temperature required for the above process?

Answer

- Pasteurisation is the process involves in the given picture.
- Milk is the food preserved by this process.
- 63°C is the temperature required for the above process.

Detail Answer

1. Question

How are vitamins useful to us? Tabulate the sources, deficiency diseases and symptoms of fat-soluble vitamins.

Answer

Vitamins are substances which are required in trace amounts in our body and they carry out some vital functions.

Vitamins are not synthesized in our body but since they are required to carry out some vital functions they need to be taken in the diet in order to fulfill the requirement.

- There are two types of vitamins depending on their solubility- Fat-soluble vitamins and Water-soluble vitamins.
- Fat-soluble vitamins- Those vitamins which are soluble in fat but are not soluble in water are called Fat-soluble vitamins.
- Water-soluble vitamins- Those vitamins which are soluble in water but are not soluble in fats are called Water-soluble vitamins.
- Following are the sources, deficiency diseases and symptoms of fat soluble vitamins:

Name of the vitamin	Sources	Deficiency diseases	Symptoms
Vitamin A	Carrot, leafy vegetables, eggs, dairy products	Xerophthalmia, Nyctalopia (Night blindness)	Unable to see in dark, dryness in the cornea
Vitamin D	Sunlight, Egg, dairy products	Rickets	Deformed bow bones, protruding chest, defective ribs
Vitamin E	Almonds, milk, meat, whole wheat	Sterility in rats, reproductive abnormalities, dry skin, Premature aging, increased hair fall and in hair growth.	Sterility
Vitamin K	Leafy vegetables, soybean, milk	Blood clotting does not take place.	Excessive bleeding takes place as clotting do not take place at the time.



**Deficiency
of
Vitamin A
Leads to Dry Skin**

Figure: Vitamin A deficiency

Rickets

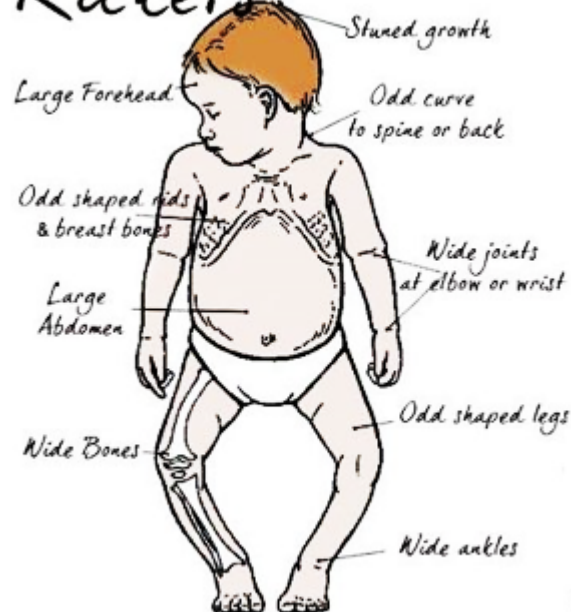
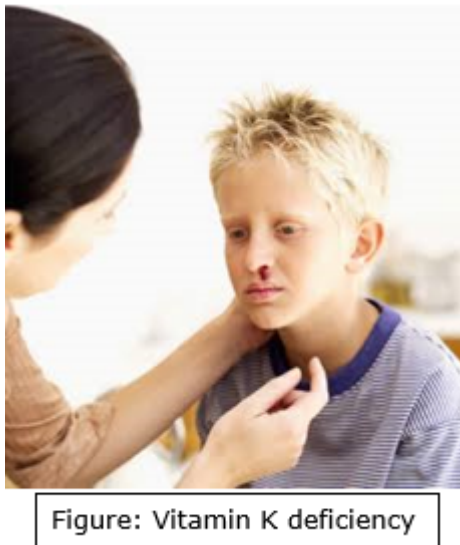


Figure: Vitamin D deficiency



2. Question

Explain the role of food control agencies in India.

Answer

Health of the citizens is the sole responsibility of the government. Therefore, the government always make sure that it makes available safe, unadulterated and hygienic food to the country. For this purpose government had established different food agencies.

- There are different food quality control agencies established by the government- ISI, AGMARK, FPO, FCI
- Food agencies established by government take care that each product which is going to sell in the market fulfills the minimum standards of quality and is not harmful. The products which fulfill the quality standards have symbols of quality upon them which helps the customer to judge the quality of the product as any product not fulfilling the minimum standards does not have those symbols.
- Functions of all food quality control agencies are as follows:

1. **FCI (Food Corporation of India)** takes care that the price of each food product is according to both customer and farmer's interest, food is available

throughout the whole country at reliable prices.

2. ISI (Indian Standards Institution) – It certifies all the industrial products including those which are involved in kitchen and food industries.

3. AGMARK (Agriculture marking)- It takes care that all agriculture and livestock products going to sell in the market meets minimum quality standards and it gives a symbol to them of AGMARK if they fulfil the minimum quality standards.

4. FPO (Fruit Process order) - It takes care that all the fruit products like fruit juices, jams, pickles fulfills the minimum quality standards.

5. FSSAI (Food Safety and Standards Authority of India) – It supervises different food products and their quality standards and thus help in protecting public health.

So, the ultimate role of all food agencies is to make available safe food to the country at reliable prices and protecting the health of the country.

Following are the symbols of food agencies in India:



AGMARK symbol



FCI symbol



ISI symbol



FSSAI symbol



FPO symbol