

General Science and Ability Test - 1.

Q. No. 1

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PART - A

Differentiate between the food adulteration and food contamination.

Give examples

Ans Food Adulteration

It is artificial or deliberate method of debasing quality of food by adding different chemicals or mixtures by replacing original ingredients.

Types

① Poisonous adulteration @ Foreign Matter
② Economic adulteration (omitting a valuable constituent and adding that of less value).

Examples: Adulterated Milk (containing chemicals)
Adulterated Fertilizers (lacking true amount of PNS)

Food Contamination: It is related to

presence of pathogens in food. Any pathogen which spoils food taste and colors may thrive when it finds suitable conditions.

That food is called contaminated.

Example: Bacteria, fungi, and viruses spoil food.

Sand, marble, brick pieces etc can provide a ground for contamination.

Controlling measures

Food adulteration can be controlled through following measures or steps -

- (a) Standardization of quality by the food department.
- (b) Certifications like (Halal Food)
- (c) Transparent manufacturing process

(B) Five Food Preservation Methods

(i) Refrigeration: It slows down bacterial growth for a long time.

Examples: vegetables in refrigerators are placed for several days without any damage.

(ii) Sugaring or Salting: Food items are either placed in sugar solution or salt solution to prevent microbial activity.

Example: Meat is preserved by salting.

(iii) Chemicals: There are certain chemicals that remove oxygen that is necessary for microbes in a container.

Example: Sodium benzoate is added in juice boxes and bottles to preserve it for long time.

(iv) Radiation: Different kinds of rays (microwaves, x-rays) are used to kill bacteria, and then food is packed lightly.

Example: Fruits are radiated to kill bacteria that cause early ripening.

(vi) Dehydration: It is a method to preserve food by remove water from the food.

Example: Fruits and meat are dried under sun or ovens to dehydrate them. All the dry fruit that we consume is dehydrated.

(c) Weather Variables

(a) Temperature: It is the degree of hotness or coldness measured by any standard scale like Celsius, Fahrenheit, and Kelvin.

(b) Pressure: It is the force exerted by air molecules on any surface like Earth surface. It is also known as atmospheric pressure.

(c) Humidity: The amount of water vapours present in air is known as humidity.

(d) Earthquake

It is defined as a phenomenon that causes earth to vibrate in the form of seismic waves. The intensity of vibration may vary. The greater the intensity and depth of waves, the greater will be the loss on the surface of the earth.

Causes

Earthquake is a natural hazard that is

Caused by following factors. These factors cause a disturbance ϕ in tectonic plates, that cause the earth to vibrate.

(a) Volcanic activity. Volcanoes are the major cause of quakes in our oceans and mountainous regions.

(b) Slipping of Rocks.

Rocks slip inside or outside the surface due to cracks or gaps. This slipping create demolishing of rock, resulting into huge vibrations.

(c) Human Activity. Some human activities like nuclear testing under oceans or the surface or mining can also earthquakes.

Measurement of Earthquake -

(a) Seismograph is a tool that is used to measure vibrations caused by earthquake.

(b) Richter scale. It is used to measure magnitude of the earthquake.

Q No. 2

(A) Importance of Renewable energy sources

The Earth is facing severe threats from climate change, global warming and ozone depletion. All of these problems emerge from a major cause - fossil fuels or conventional sources of energy, like petrol, diesel, coal, natural gas etc.

To reduce the environmental degradation, the importance of renewable sources of energy has risen significantly. Here are some important facts.

(i) Renewable sources are environment-friendly. Hence they reduce climate burdens.

(ii) They are sustainable in nature. Hence, there is no chance of extinction of such resources in near future.

(iii) They are the cheap sources of energy. Hence they increase overall ~~well~~ wellbeing of humanity.

Solar Energy.

It is the energy obtained from

sun radiation. The sun is the greatest

source of energy on the Earth. It provides significant amount of heat and light

energy that is used by plants, animals and humans to grow.

Moreover, human can convert solar energy into electrical energy in order to deal with the rising demand of electrical energy. This is the most important source of getting renewable energy.

The plants use sunlight for photosynthesis. Animals use it for searching their food during daylight. Humans use sunlight for heat and daily activities.

B1.

Rocks

They are defined as accumulation of one or many minerals in the form of one solid material.

Types:

There are three main types of rocks.

(i) Sedimentary Rocks:-

The solid material consisting of minerals break into pieces. These broken pieces are called sediments. When many sediments accumulate and get buried, they form sedimentary rocks.

Example: Coal, limestone.

(ii) Metamorphic Rocks:-

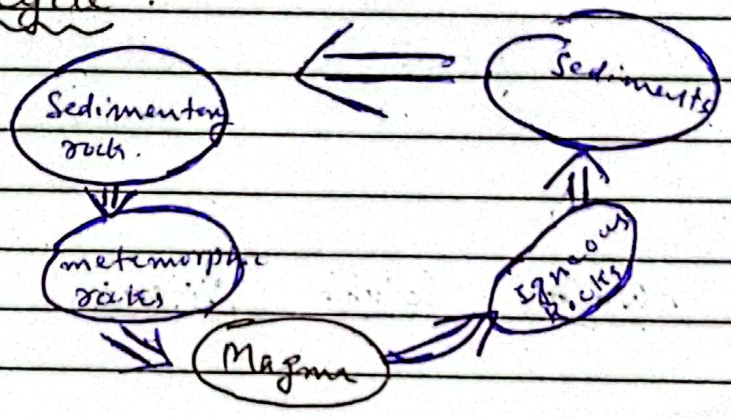
When exposed to extreme heat and pressure, changes occur in sediments. As a result, metamorphic rocks are formed.

Example Granite, Diorite, Basalt, etc.
Marble, slate, etc.

(iii) Igneous Rocks. As a result of volcanic activity, magma or lava is produced. When it cools down, it turns into igneous rocks.

Example: Granite, Diorite, etc.

Rock cycle.



As a result of weathering, which includes heat, pressure, humidity etc, these rocks change their shape and form. But, such a change works in a cyclic way. This called a Rock cycle.

C Saturated Fats.

These are the fats that are solid at room temperature. They are considered as unhealthy fats because increase the amount of bad cholesterol. Cheese, butter, milk, red and meat are the major sources of saturated fats.

Unsaturated Fats:

These fats are liquid at room temperature. They are normally oils. They are considered very good for health because they help to reduce bad cholesterol from the body.

Importance: Unsaturated fats are important for diet. They help to secure our body from cold. Also they give us fat-soluble ~~vitamin~~ vitamins like A, D, E and K. Also they increase heart health.

D Water Soluble Vitamins

Water soluble vitamins - B and complex and C, are known as water soluble because they are removed from our with water during digestion. Our body can not store them. That is why they are needed by our body on ~~daily~~ daily basis.

Sources

Vitamin C: This vitamin is found in citrus fruits, green vegetables.

Their deficiency cause Scurvy - bone disease.

Vitamin B complex: It is a family of vitamins. They are mostly milk, meat and vegetables. Their deficiency cause diseases like Beriberi, anemia, birth defects, nausea etc.