

Part - II (Section - I)

Q2) Write a note on Balanced diet.

A balanced diet is a nutritional approach that provides the necessary nutrients in the right proportions to maintain overall health and well-being. It is crucial for individuals to consume a variety of foods from different food groups to ensure that they get all the essential nutrients their bodies need. A balanced diet typically includes the following components:

1) Carbohydrates :-

Carbohydrates are the body's prime source of energy. They are found in foods like grains, fruits, vegetables and legumes. Whole grains, such as brown rice, quinoa and whole wheat bread, are preferable over refined grains for their higher fiber content.

2) Proteins :-

Proteins are essential for building and repairing tissues, as well as for the production of enzymes and hormones. Good sources of protein include meat, poultry, fish, eggs, dairy products, beans

lentils and nuts.

3) Fats:-

Healthy fats are important for various bodily functions, including the absorption of fat-soluble vitamins.

Sources of healthy fats include avocados, nuts, seeds, olive oil, and fatty fish.

4) Vitamins:-

Vitamins are essential for various physiological processes, such as immune function, vision and blood clotting.

Different fruits and vegetables provide a wide range of vitamins, so it's important to consume a variety of colorful fruits.

5) Minerals:-

Minerals such as calcium, iron and potassium play vital role in bone health, oxygen-transport and fluid balance.

Dairy products, leafy greens, lean meats, and whole grains are good sources of essential minerals.

6) Fiber:-

Fiber is crucial for maintaining a healthy digestive system and preventing constipation.

Whole grains, fruits, vegetables, legumes and nuts are rich in dietary fiber.

(7) Water:

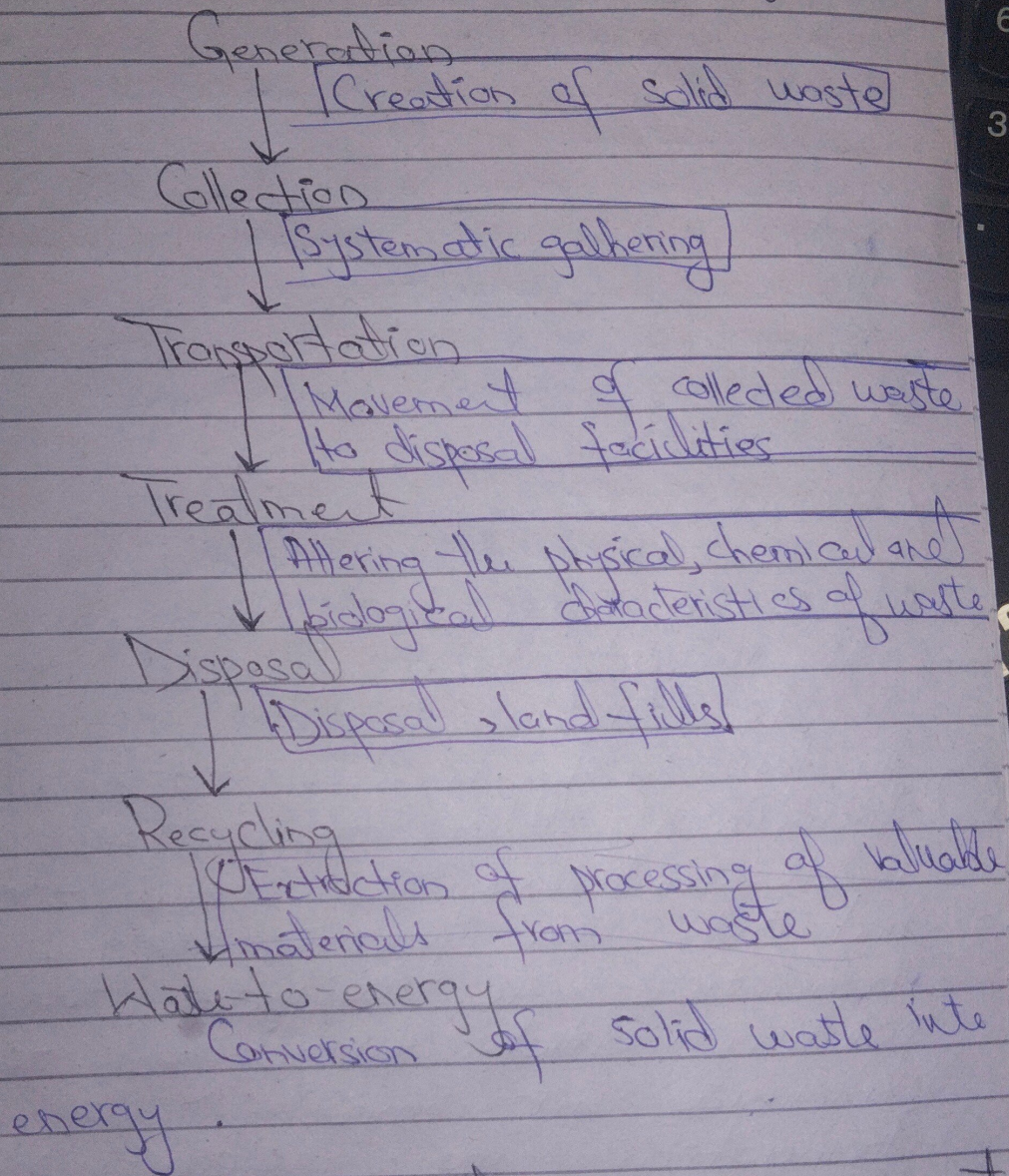
Adequate hydration is essential for overall health. Water is crucial for various bodily functions, including digestion and temperature regulation. It is recommended to drink plenty of water throughout the day.

Balancing these components is key to achieving a healthy and well-rounded diet. It's essential to be mindful of portion sizes and to limit the intake of processed foods, added sugars and unhealthy fats.

(8) What is solid waste management? Discuss its different methods.

Solid waste management refers to the systematic, controlled collection, transportation, treatment and disposal of solid waste generated by human activities. Solid waste includes various types of non-liquid material, such as household garbage, industrial waste, commercial waste and construction and demolition debris. The goal of SWM is to minimize the adverse impact of waste on public health, the environment and aesthetics.

Components of solid waste management:



Methods of solid waste management:

1) Landfilling:

Landfilling involves burying waste in designated landfills, which are engineered facilities designed to minimize environmental impacts. Landfills are cost-effective and

< Suitable for a wide range of waste types. Modern landfills include liners and systems to capture and treat leachate, minimizing groundwater contamination.

Landfilling can lead to soil & water pollution if not properly managed. Methane, a potent greenhouse gas, is produced during the decomposition of organic waste in landfills.

2) Incineration:-

Incineration involves the combustion of waste materials at high temperatures. This method reduces the volume of waste and produces energy in the form of heat & electricity. Incineration reduces the volume of waste, minimizes the need for land and can generate energy. Modern incinerations are equipped with pollution control technologies to minimize air emission.

Incineration may release pollutants into the air, and the ash produced may contain hazardous substances. Public concerns about air quality and potential health impacts can be the challenges for incineration projects.

3) Recycling:

Recycling involves the collection and processing of waste materials to create new products. It aims to conserve resources, reduce energy consumption, and minimize the environmental impact of waste.

Recycling conserves natural resources, reduces the need for raw materials, and decreases energy consumption compared to manufacturing products from virgin material.

The recycling process can be energy intensive and not all materials are economically or technologically feasible to recycle. Contamination of recyclables and inadequate collections are common challenges.

4) Composting:

Composting is the biological decomposition of organic waste materials into nutrient-rich compost. This method is particularly suitable for food and yard waste. Composting reduces the amount of organic waste sent to landfills, produces a valuable soil conditioner, and mitigates greenhouse gas emissions associated with organic decomposition in landfills.

Not all types of waste are suitable for composting, and the process may require specific conditions such as aeration and moisture control.

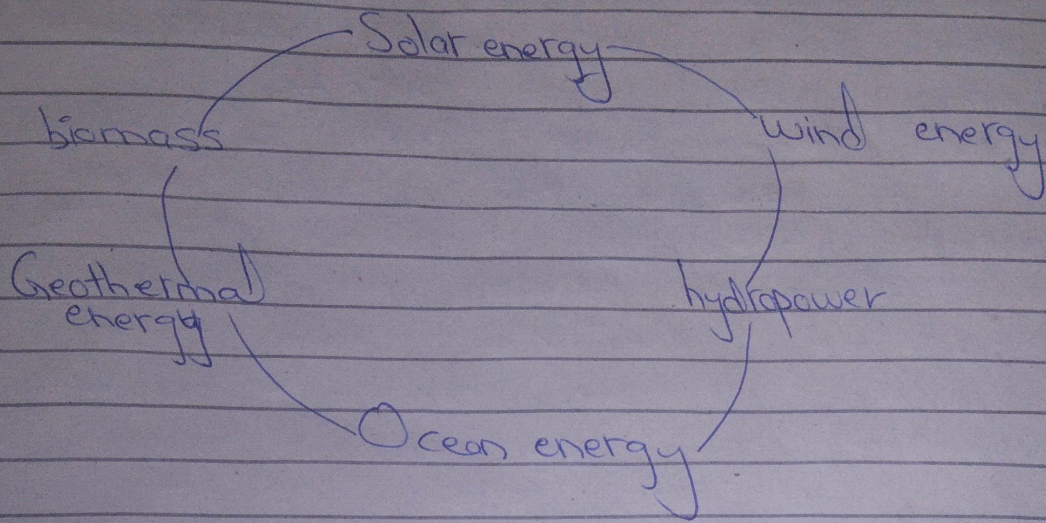
- 5) Waste-to-Energy
- 6) Source reduction and waste minimization
- 7) Biological treatment

It is crucial for governments, industries, communities and individuals to work collaboratively to promote responsible consumption, implement efficient waste management systems and invest in innovative technologies.

Q) Discuss any three renewable energy resources under CPEC

Renewable energy resources :-

Renewable energy resources are natural sources of energy that are replenished naturally and relatively quickly, making them sustainable over the long term. Unlike non-renewable resources, such as fossil fuels, which are finite and deplete over time, renewable energy sources can be harnessed continuously without exhausting their supply.



⇒ Renewable Energy resources under CPEC

1) Hydropower:-

→ Pakistan has vast hydropower potential due to its geography, with several rivers and mountainous regions. The CPEC includes the development of hydropower projects to harness this potential.

→ The Dasu and Damer-Bhasha dams are notable projects aimed at generating hydroelectric power.

The projects contribute to reducing Pakistan's reliance on fossil fuels for electricity generation and provide a clean and sustainable energy source.

2) Solar Energy:-

Solar energy is abundant in Pakistan, making it an attractive

options for renewable energy. Under CPEC, there have been initiatives to develop solar power projects.

→ Qaid-e-Azam Solar Park is Bahawalpur is an example of a solar energy project associated with CPEC. The park aims to generate a significant amount of electricity using solar photovoltaic technology, reducing the country's dependence on non-renewable sources.

3) Wind Energy:-

Pakistan has considerable wind energy potential, particularly in coastal and hilly areas. Wind power projects have been included in the CPEC framework to harness this potential.

→ The Jhimpir Wind Corridor in Sindh is one such example. It hosts multiple wind farms, contributing to the national grid. These wind projects help diversify the energy mix and reduce greenhouse gas emissions associated with conventional power generation.

These initiatives under CPEC align with the broader goal of addressing Pakistan's energy needs while promoting sustainability and reducing environmental impacts.

Q3) Discuss the different parts of eye. How short-sightedness and far-sightedness can be corrected.

Human Eye:

The human eye is a complex organ responsible for vision, allowing us to perceive and interpret the surrounding world. It consists of several interconnected parts, each with specific functions.

Following are the different parts of human eye:

1) Cornea:

Cornea is the clear, outermost layer at the front of the eye. It plays a crucial role in focusing light onto the lens.

2) Iris:

The colored part of the eye, the iris, controls the size of the pupil. The pupil regulates the amount of light entering the eye.

3) Pupil:

The opening in the centre of iris through which light enters the eye.

4) Lens:

The lens is a transparent, flexible

Structure behind the iris. It changes shape to focus onto the retina.

5) Retina:

The retina is the innermost layer at the back of the eye. It contains photoreceptor cells that convert light into electrical signals.

6) Optic Nerve:

The optic nerve transmits visual information from the retina to the brain.

7) Vitreous Humour:

A jelly-like substance that fills the space between the lens & retina, providing support to the eye.

⇒ Farsightedness:

→ Also called hyperopia, light focuses behind the retina, making close-up objects appear blurry.

→ Corrective lenses, such as convex glasses or contact lenses are used to adjust the focus by converging light before it reaches the lens.

⇒ Nearsightedness (Myopia)

In Myopia, light focuses

in front of the retina, causing distant objects to appear blurry.
→ Concave lenses are used to diverge light before it reaches the lens, allowing it to focus properly on retina.

Other Correction methods:

- 1) Refractive surgery
- 2) Orthokeratology
- 3) Intraocular lens