

R Concept(or)3R Concept

Definition : The principle of reducing waste, reusing and recycling resources and products is often called 3Rs.

Principle

3 R is the order of priority of actions to be taken to reduce the amount of waste generated and to improve overall waste management processes and programs.

1. Reduce

Reduce means choosing to use things with care to reduce the amount of waste generated.

If the usage of raw materials are reduced, the generation of waste also gets reduced.

2. Reuse

Re using involves the repeated use of items (or) parts of items which still have usable aspects.

- (a) There fill able containers, which are discarded after use, can be reused.
- (b) Rubberrings can be made from the discarded cycle tubes, which reduces the waste generation during manufacturing of rubber bands.

3. Recycle

Recycling means the use of waste itself as the resources. It involves reprocessing of the discarded materials into new useful products.

Examples

- (i) Old aluminium cans and glass bottles are melted and recast into new can sand bottles.
- (ii) Preparation of cellulose insulation from paper.
- (iii) Preparation of fuel pellets from kitchen waste.
- (iv) Preparation of automobiles and construction materials from steel cans. The above process saves money, energy, raw materials, and reduces pollution.



3R Concept

Importance of 3 Rs

- (i) The most effective way to reduce the garbage is reducing the amount of solid waste produced.
- (ii) By reducing waste at the source, the resources like water and energy can be saved.
- (iii) Like reducing, reusing avoids creating waste rather than trying to recycle it once it's already there.
- (iv) Operating a well-run recycling program costs less than waste collection and land filling.
- (v) Recycling helps families save money because they pay for less disposal costs.
- (vi) Recycling produces less air and water pollution than manufacturing with new materials.
- (vii) By recycling less material are sent to landfills, which will keep them for future.
- (viii) Proper disposal and recycling will prevent water and soil contamination.

Circular economy

Definition

Circular economy is a new production and consumption model that ensures sustainable growth over time. It reduces the consumption of raw materials and recover wastes by recycling (or) giving it a second life as a new product.

Aim(or) Purpose

Aim of the circular economy is to make the most of the material resources available to us by applying three basic principles reduce, reuse and recycle.

In this way the lifecycle of products is extended, waste is used and a



more efficient and sustainable production model is established over time.

Benefits of circular economy

- (i) It protects environment.
- (ii) Circular economy benefits the local economy.
- (iii) It drives employment growth.
- (iv) It promotes resource independence.

Necessary steps(7Rs) to achieve a circular economy

1. Re design

Redesigning process consumes few raw materials, extends their life cycle and generates less waste.

2. Reduce

If we reduce consumption, waste generation and use of raw materials, impact on the environment gets reduced.

3. Reuse

Reusing the products extends their lifecycle.

4. Repair

Repairing avoids the use of new raw materials, saves energy and does not generate environmental waste.

5. Renovate

Update old objects, so that they can be reused.

6. Recycle

Waste product can be used as raw material to manufacture new products.

7. Recover

The products that are going to be discarded, can be used for new uses.

Example for circular economy

- (i) Manufacturers design products to be reusable.

Electrical devices are designed in such a way that they are easier to repair.

Products and raw materials are also reused as much as possible.