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7.2.1 Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual.

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BEST PRACTICE 1

SOLAR ENERGY

OBJECTIVE:

Solar energy is environmentally friendly, pollution free and a clean source of electricity. It has no negative impact on the environment. Solar power plant requires clear water to operate and produces no greenhouse gases. Consequently, it is both environment friendly and safe.

Following are some objectives of solar energy:

1. **Decreases usage of non-renewable energy:** Solar energy is sustainable, inexhaustible, non-polluting and reliable source of energy and hence decreases the utilization of non-renewable energy resources.
2. **Deals with the problem of global warming:** Solar energy diminishes our need for fossil fuels. Also, solar energy has lower emission than other sources of electricity such as coal and hence reduces global warming significantly.
3. **Economical:** Solar panels reduce our dependence on the main energy grid which reduces electricity bills. Moreover, it has low operational costs and hence saving money and protecting against rising utility costs.

THE CONTEXT:

Along with adopting a successful teaching-learning process, the college is also concerned with long-term sustainability. The college provides clean and green energy through the installation of a solar energy system on the roof, which has satisfied the college's electrical requirement to great extent. This energy is used as a power backup supply during electricity department outages, resulting in savings of roughly 20% from the day of installation. Solar Energy Power Plants and the use of solar energy also help to reduce carbon emissions.

THE PRACTICE:

Ramjas College is adamantly committed towards creating an eco-friendly and sustainable campus. A 312.84 KWP solar PV project was installed on the college rooftop and has been operational since 6th December 2019. The college has installed solar lamps instead of electric lamps at many places which benefits students and staff in the college premises.

EVIDENCE OF SUCCESS:

- **Reduction in electricity bill:** The college generated 337608 units in the last financial year and generated Rs 10,49,960/- approximately.

- **Reduced carbon footprint:** The college has put in efforts to reduce carbon footprints inside the campus and discourages the use of plastic.
- **Increased awareness among staff and students:** We have also been able to create awareness amongst staff and students of our college regarding the need for sustainable development and environmental challenges that earth is facing currently.

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED:

Dust, high temperatures and the dearth of water are contributing to a significant increase in the cost of operating solar power plants.

- **Skill Labor:** A labor force with the necessary skills is required for maintenance and cleaning. As a consequence of all of this, operational costs will increase.
- **Weather dependent:** There is a possibility that the sky will be overcast or wet during the day, with very little or no sun radiation. As a result, the reliability of solar energy panels as a solution has been reduced.
- **Sunny areas required:** The generation of solar energy is limited to those locations that are exposed to a significant amount of daylight.
- **High upfront cost:** In order to produce power, solar panels need to be paired with inverters and storage batteries. While the installation of solar panels can be done for a very low cost, the installation of other pieces of equipment is typically more expensive.
- **High surface area required:** It takes a considerable amount of land area to establish a solar power plant that makes use of solar panels, and that land area cannot be used for anything else for the duration of the time that it is occupied by the solar power plant.

BEST PRACTICE 2

WASTE MANAGEMENT

OBJECTIVE:

To cut down on the number of natural resources that are used up, reuse the materials that are harvested from the natural world as much as is feasible, and generate as little trash as is humanly possible. The application of the waste management hierarchy, which ensures that the financial and environmental benefits of each waste alternative are maximized, is something that needs to be done. Feedback loops, a focus on processes, embodiment of adaptability, and waste diversion from disposal should all be included in an effective and sustainable waste management system.

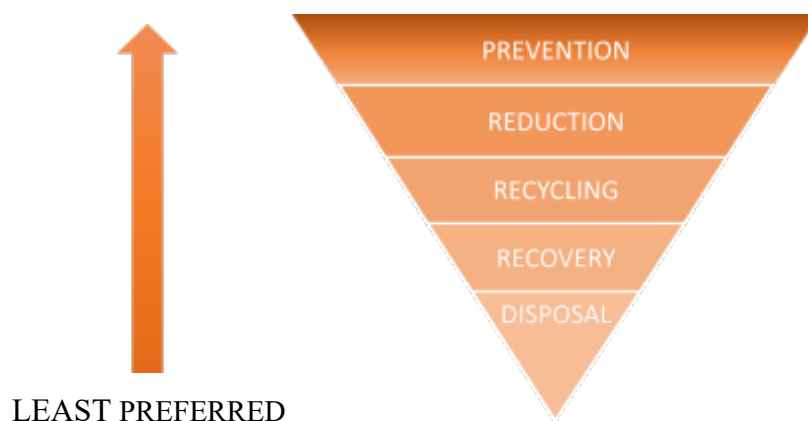
THE CONTEXT:

The proper disposal of trash is a regional concern that has international repercussions. The term "waste management" refers to the process of collecting, transporting, processing or disposing of various waste items as well as managing and monitoring such processes. It is essential to adhere to sustainable practices in this aspect so that each and every bit of waste can be managed in an effective manner rather than simply being dumped in landfills all at once. It is becoming increasingly important to have an efficient solid waste management system in place as the amount of waste that is produced increases. Paper, plastics, glass, metals, foods, and other types of debris are among the things that fall into the category of garbage that is produced as a

byproduct of the various activities that are carried out on a routine basis in the college. Systems for the management of waste are developed with the goals of preserving the environment and making the conditions around us better. It is our duty to ensure that sustainability is maintained, not only for the sake of our natural environment but also for the sake of future generations.

THE PRACTICE:

College has robust waste management systems. The waste management hierarchy below is the process we ideally follow:



Solid Waste Management

Separation of Biodegradable and Non-Biodegradable waste separately:

- We divide waste products and garbage into different categories according to whether or not they may be reduced, reused, or recycled.
- There is a provision of BLUE-GREEN covered-pushed dustbins provided at each floor.
- Compost Pits are utilized by the college in order to combat the issue of solid waste. These pits consist of a hole that has been dug, which is then stuffed with organic waste and topped with grass clippings or leaves.

Liquid Waste Management

Laboratory wastewater treatment plant

- To treat waste water coming out from the laboratories of the Department of Chemistry.
- The laboratories waste water which mainly consists of acidic impurities, gets collected in the first part of the tank first.
- The tank consists of three parts, water gets collected in the first part, where sedimentation takes place, then the water passes in the second tank, which has calcium carbonate pebbles, so that neutralization takes place, after which water passes through third part of the tank, where it gets stored and occasionally the pH of the water is checked by the laboratory staff.
- Once it is close to neutral, it is discharged into the main sewer tank line of the college.

Water Recycling

- An initiative has been taken to increase the water level by replenishing the existing borewell by means of rain water harvesting
- The rainwater from rooftops of chemistry buildings and lawns is diverted into a common line, which is discharged into the main water harvesting tank, which is divided into two parts.
- In the first part, sedimentation takes place, and the water passes to the second part, where further decantation takes place and then it is discharged into the borewell, which is 40-50 feet deep. This helps in replenishing sub-soil water.

Waste Reuse System

Iron reuse

- **Saves Energy:** When compared to the harvesting of new materials, the production of a new product from scrap metal requires significantly less energy.
- **Conserves Natural Resources:** Reuse helps to conserve the natural resources that are becoming increasingly scarce. Reuse allows for the utilisation of previously mined metals, which eliminates the need to conduct extensive drilling and the subsequent collection of new base metals. Reuse even helps to cut down on the amount of water that would otherwise be used in the production of the materials from scratch.
- **Slow Landfill Growth:** By reusing materials that are already in existence, we can keep them out of landfills. This is significant because the majority of these metal objects require a considerable amount of time to biodegrade.

Bricks Reuse

- When waste is processed at landfills, greenhouse gases are released into the atmosphere. Bricks can be reused and recycled, which cuts down on the amount of waste that ends up in landfills. This, in turn, lowers the amount of greenhouse gas emissions, which is an important step in the fight against the factors that contribute to climate change.
- Saving energy that would have been used to process landfills is one of the benefits of recycling bricks.
- When there is no new brick production, there is a reduction in the amount of water used.
- In Perth, waste from demolition makes up fifty percent of the waste that is thrown away in landfills. Bricks can be reused into usable material, which reduces the amount of waste produced.

EVIDENCE OF SUCCESS:

At each level and source, the waste is separated into its respective piles. The administrative supervisor of each department is responsible for ensuring that waste is collected at the predetermined intervals from each floor of the building. The waste from the floor bins is collected in movable containers or dustbins that have been provided for each block, and then it is taken to the dumping yard. Bricks and repurposed iron have been used in the construction of the college's staircases, railings, and gates, among other things.

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED:

- Segregating waste and the lack of awareness over segregation.
- In this growing digital age, the complexity of various modern products means recycling is far more complex than it used to be. Cars, for example, with the newest technologies and digital components, end of life recycling can take much longer than it previously did.
- The success of such practices requires attitude and willingness on the part of the facilitator without which it is difficult to motivate students, which is the target audience of the college.
- Degree of motivation required in the minds of the students can result in the success of such practices.

With the right practices and an eye toward conservation, waste management can work for all of us.

