

Date: \_\_\_\_\_

Day: \_\_\_\_\_

Q3 EIA may help in reducing environmental cost. How? Differentiate between EIA and SEA.

## Introduction:

Environmental Impact Assessment is a process which enables governments to assess projects which have likely impacts on environment. It is a cost-effective method to ensure environmental sustainability through prudent management and assessment at each level of the new projects.

### 1. Environmental Impact Assessment

According to Environmental Protection Agency, Environmental Impact Assessment is process to assess <sup>Proposed</sup> projects which have likely environmental impacts in the future in order to protect environment and ensure environmental sustainability.

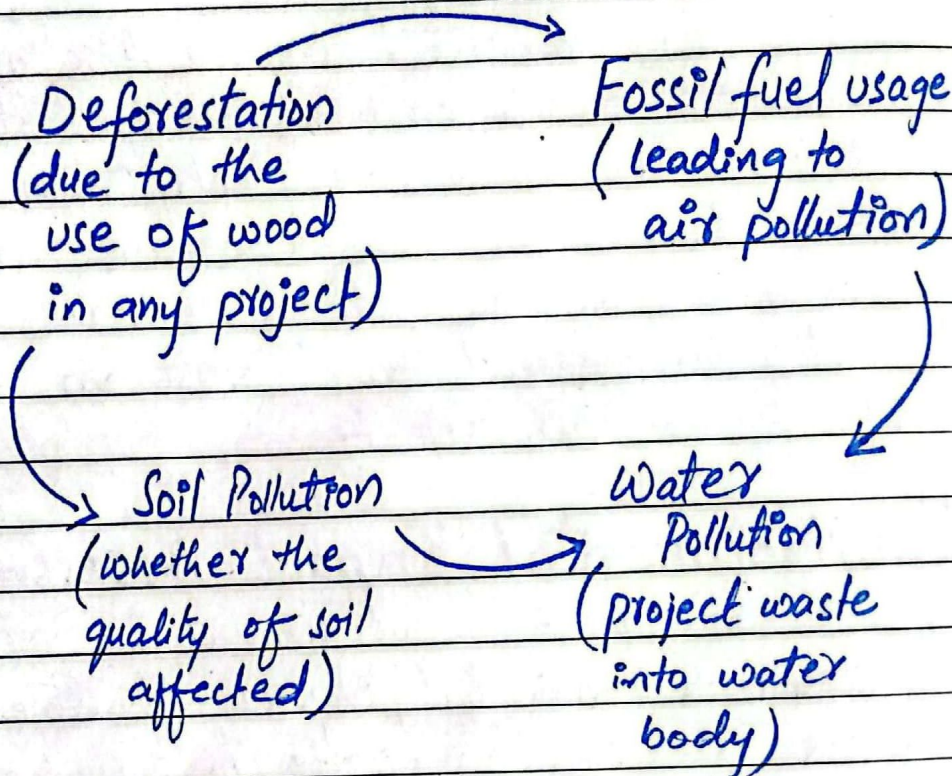
### 2. EIA ~ reduce environmental cost

When any project is proposed, it is a mandatory step to take EIA review in order to ensure safety of the environment. This is because proposed projects might have irreversible impacts on

Date: \_\_\_\_\_

Day: \_\_\_\_\_

environment and in the assessment process those impacts can be calculated before the initiation of proposed project. The likely impacts are illustrated below:



### 3. Process of EIA:-

Environmental impact Assessment has designated steps at each level of assessment which are mentioned below:

#### i. Project Proposal Plan

Any person or organization has to come up with a proposal plan for project initiation



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Date: \_\_\_\_\_

Day: \_\_\_\_\_

## i. Proposal Plan to EIA

The second step is to submit the proposal to environmental impact assessment for the approval or disapproval.

## ii. Screening:-

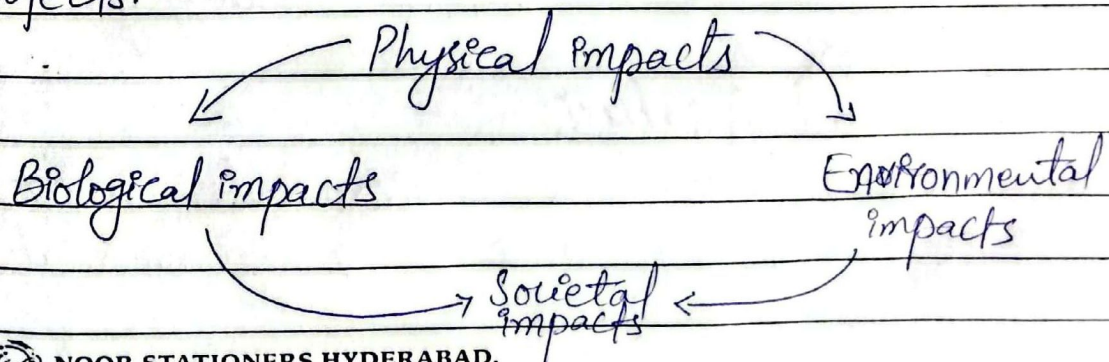
EIA starts its procedure with screening wherein whether EIA is required or not is decided. For big projects, EIA is required and for small scale projects, IEE is required.

## iv. Scoping:

Here the scope of the project is determined whether the proposed project will go to use wood, fuel or other resources which can lead to exploitation. Time of reference has already been set for standard use of these resources.

## v. Baseline Data Collection

This is an important step where data will be collected on the impacts of the proposed projects.



Date: \_\_\_\_\_

Day: \_\_\_\_\_

## vi. Analysis of Impacts Assessment and mitigation

In this step, the gathered data at baseline will be analyzed on the basis of impacts feasible and its mitigation strategies which should be ↑

## vii. Impacts Management

In this step, management and monitoring plan will be suggested for future monitoring and management plan

## viii. EIA Review:

After assessment, EIA gave its review and submitted to the higher authority which is Environmental Protection Agency at federal level.

## ix. Approval / Disapproval of the Project

Assessing the review, EPA will give its report in which it will either approve or disapprove the project explaining certain reasons

## 4. Critical Analysis

Through these steps, Environmental Impact Assessment may help in reducing environmental cost.



Date: \_\_\_\_\_

Day: \_\_\_\_\_

## 5. Difference between EIA and SEA

### Environmental Impact Assessment

### Strategic Environment Assessment

- |    |   |   |
|----|---|---|
| 1. | It is a reactive approach                                       | 1. It is a pro-active approach  |
| 2. | Its scope is narrow and limited to projects                     | 2. Its scope is wider encompassing all the possible environmental consideration   |
| 3. | It is specific to projects                                      | 3. It is broader and influence decision making level.                             |
| 4. | The end result is either approval or disapproval of the project | 4. Its result influence at decision-making and suggest measures at initial level. |

### (Illustration of Difference)



Date: \_\_\_\_\_

Day: \_\_\_\_\_

## Conclusion:

Environmental Impact Assessment is helping states to reduce environmental cost at project level with its assessment steps in detail. Along with that, monitoring and management plan ensure future environmental sustainability.



Date: \_\_\_\_\_

Day: \_\_\_\_\_

Q6 Discuss the Solid Waste Management with special emphasis on waste disposal techniques. Discuss?

### Introduction:

Solid Waste Management is a cost-effective method to sustainably manage solid waste from different sources ranging from industries to municipal waste. Solid waste has become a pressing issue at global level. However, United States and European Union has been leading in successfully manage solid waste by proposing techniques of solid waste management.

#### 1. Solid Waste ~ Definition

According to US-EPA, A solid waste is any material that has been discarded or abandoned or thrown away.

#### 2. Solid Waste Management

"Solid waste Management is collecting, treating, and disposing of solid material that is discarded because it has served its purpose or is no longer useful"

~ US-EPA Definition

Date: \_\_\_\_\_

Day: \_\_\_\_\_

### 3. Solid Waste Management Plan by European Union (EU):

Since European Union is leading in the Solid Waste Management, it has provided management plan for environmental sustainability at global level.

1. **Reduce** → Reduce the amount at manufacturing level
2. **Reuse** → Reuse the product at least 5 times
3. **Recycle** → Recycle its components like glass, paper, ashes etc.
4. **Recover** → Use the organic waste to make biofuels and recover energy
5. **Disposal** → Dispose off the solid waste through multiple waste disposal techniques.

## Waste Disposal Techniques :

### 1. Composting: A disposal Technique

It is a biological process in which the organic matter of waste is allowed to decompose



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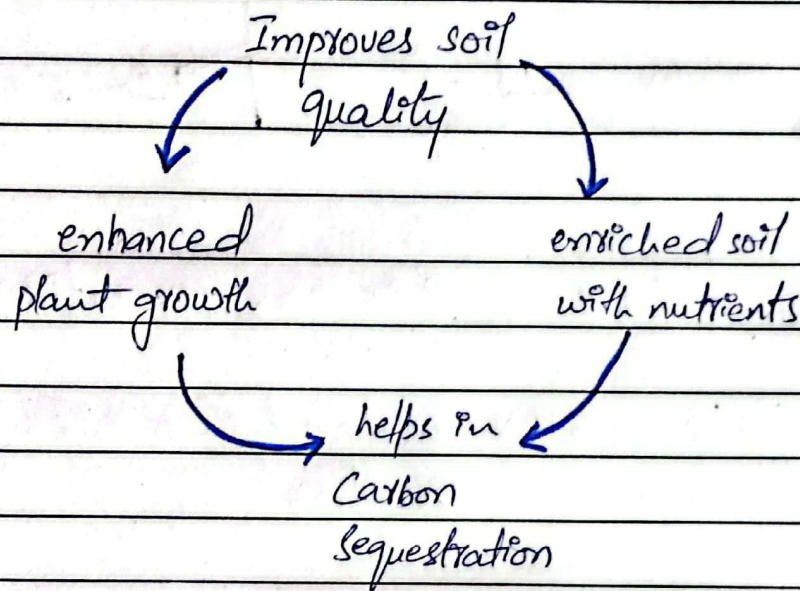


Date: \_\_\_\_\_

Day: \_\_\_\_\_

under carefully controlled conditions. In this disposal technique, microbes metabolize the organic waste material and reduce its volume as much as 50%.

## Sustainable Environmental Benefits



## Incineration: Disposal Technique

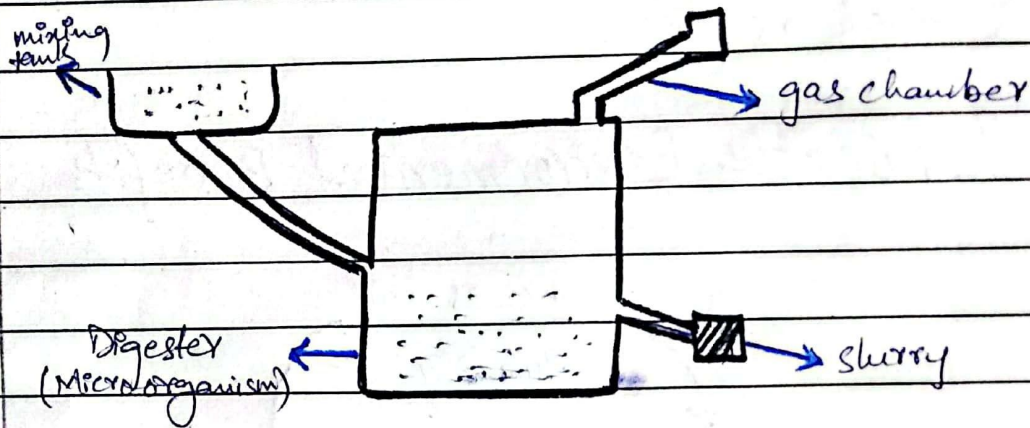
It is the treatment of waste or waste disposal by the means of burning where the garbage turns into incombustible matter like gases and ashes

**For instance:** Ashes has been use to make bricks instead of mud is another sustainable benefit emanating from disposal technique.

Date: \_\_\_\_\_

Day: \_\_\_\_\_

### 3. Bio-gas : A sustainable disposal technique



#### Procedure of Bio-gas formation

1. Organic matter dumped into mixing tank to make it a solution
2. In Digester, microorganism are present to decompose the organic matter.
3. During the decomposition, Methane ( $CH_4$ ) is produced which will be collected in the gas chamber
4. The remaining slurry can be used for composting.

Date: \_\_\_\_\_

Day: \_\_\_\_\_

## Sustainable Use:

This methane ( $CH_4$ ) can be use in households or for fuels in transportation.

## Conclusion:

Solid waste Management is, indeed, a cost-effective method to utilize the waste at the end for sustainable usage for ensuring protection of the environment.

Date: \_\_\_\_\_

Day: \_\_\_\_\_

28

Short notes:

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## Eutrophication:

It is the process of the production of algal bloom and phytoplankton on the surface of water body due to high concentration of nitrogen and phosphorus from the industrial and sewage effluent. It is the type of water pollution.

### Process of Eutrophication (Illustration)

Industrial or  
Sewage effluent  
containing nitrogen  
and phosphorus



Enter into the  
water body



Due to rich  
nutrients, Cyanobacteria  
algal blooms and phytoplankton  
grow in the water body



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Destroying the aquatic  
life in water body  
due to suffocation



This further exacerbate  
anoxic environment



Algal bloom block the  
sunlight enter into the  
water body resultantly  
anoxic environment lead to  
dead phytoplankton

Date: \_\_\_\_\_

Day: \_\_\_\_\_

## 2. National Conservation Strategy

NCS approved in Pakistan on March 1, 1992 providing a broad framework for addressing environmental concerns in the country. It involved more than 3,000 people through workshops and direct/indirect consultation.

### Objectives of NCS:

