

RESOURCE AND DEVELOPMENT

Prepared by Ms. Niti Arora
April 20, 2010

Resource-Everything that is

- Available,
- Technologically accessible,
- Economically feasible,
- Culturally acceptable.

Features/functions/characteristics-

- Not free gifts of nature-
- Function of human activities--
- Interdependent relation- nature- technology and institution

Different types of resources –

1. On the Basis of Origin

Biotic Resources: 1. these are obtained from biosphere and have life. 2. Examples human beings, flora and fauna, fisheries,

A biotic Resource: 1. All those things which are composed of non living things are called a biotic resources. 2. For example, rocks and metals.

2. On the Basis of Exhaustibility

Renewable Resources: 1. The resources which can be renewed 2. reproduced by physical, chemical or mechanical processes are known as renewable or replenishable resources. 3. For example, solar and wind energy, water, forests and wildlife. 4. The renewable resource may further be divided into continuous or flow

Non-Renewable Resources: 1. These occur over a very long geological time & get exhausted with their use. 2. Minerals and fossil fuels are examples of such resources.

3. These resources take millions of years in their formation. 4. Some of the resources like metals are recyclable and some like fossil fuels cannot be recycled and get exhausted with their use.

3. On the Basis of Ownership

Individual Resources: 1. These are also owned privately by individuals. 2. Many farmers own land which is allotted to them by government against the payment of revenue. In villages there are people with land ownership but there are many who are landless. 3. Urban people own plots, houses and other property. Plantation, pasture lands, ponds, water in wells etc. are some of the examples of resources ownership by individuals.

Community Owned Resources: 1. There are resources which are accessible to all the members of the community. grazing grounds, burial grounds, village ponds, public parks, picnic spots, playgrounds in urban areas accessible to all the people living there.

National Resources: 1. Technically, all the resources belong to the nation. The country has legal powers to acquire even private property for public good. 2. Urban Development Authorities get empowered by the government to acquire land. All the minerals, water resources, forests, wildlife, land within the political boundaries and oceanic area up to 12 nautical miles (19.2 km) from the coast termed as territorial water and resources therein belong to the nation.

International Resources: 1. There are international institutions which regulate some resources. 2. The oceanic resources beyond 200 km of the *Exclusive Economic Zone* belong to open ocean and no individual country can utilize these without the concurrence of international institutions.

4. On the Basis of the Status of Development

Potential Resources:1. Resources which are found in a region, but have not been utilised. 2. For example, the western parts of India particularly Rajasthan and Gujarat have enormous potential for the development of wind and solar energy, but so far these have not been developed properly.

Developed Resources:1. Resources which are surveyed and their quality and quantity have been determined for utilization. 2. The development of resources depends on technology and level of their feasibility.

Stock:1. Materials in the environment which have the potential to satisfy human needs but human beings do not have the appropriate technology to access these. 2. For example, water is a compound of two inflammable gases; hydrogen and oxygen, which can be used as a rich source of energy. But we do not have the required technical 'know-how' to use them for this purpose. Hence, it can be considered as stock.

Reserves are the subset of the stock, 1. Which can be put into use with the help of existing technical 'know-how' but their use has not been started. These can be used for meeting future requirements. 2. River water can be used for generating hydroelectric power but presently, it is being utilised only to a limited extent. Thus, the water in the dams, forests etc. are a reserve which can be used in the future.

Fill the table-
Classification on basis of -

Origin	Exhaustibility	Ownership	Status of Development

Biotic resource	Abiotic resource
1.	
2.	
3.	
National resource	International resource
1.	
2.	
3.	
4.	
Potential resource	Developed resource

1.	
2.	
3.	
4.	
Stock	Reserve
1.	
2.	
3.	
4.	

RESOURCE DEVELOPMENT

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Need to conserve/effect of over utilization-

- GREED
- ACCUMULATION IN FEW HANDS,
- Indiscriminate use -ECOLOGICAL CRISIS

HOW TO DEVELOP for

- Equitable distribution
- For sustained quality of life
- Global peace

BY RESOURCE PLANNING-

- Strategy for JUDICIOUS USE OF RESOURCES
- BALANCED RESOURCE PLANNING AT ALL LEVELS.

An equitable distribution of resources has become essential. Explain

1. For a sustained quality of life and global peace.
2. If the present trend of resource depletion by a few individuals and countries continues, the future of our planet is in danger.
3. Therefore, resource planning is essential for sustainable existence of all forms of life.

Sustainable economic development means

'development should take place without Damaging the environment and development in the present should not compromise with the Needs of the future generations.'

Earth summit held in Brazil in 1992./ Importance of the earth summit / aims of agenda 21.

Rio de Janeiro Earth Summit, 1992

1. In June 1992, more than 100 heads of states met in Rio de Janeiro in Brazil, for the first International Earth Summit.
2. The Summit was convened for addressing urgent problems of environmental protection and socio economic development at the global level.

3. The assembled leaders signed the Declaration on Global Climatic Change and Biological Diversity. The Rio Convention endorsed the global Forest Principles and adopted Agenda 21 for achieving Sustainable Development in the 21st century.

4. Agenda 21 It is the declaration signed by world leaders in 1992 at the United Nations Conference on Environment and Development (UNCED), which took place at Rio de Janeiro, Brazil.

2. It aim-(i) at achieving global sustainable development.

(ii) It is an agenda to combat environmental damage,

(iii) Poverty, disease through global co-operation on common interests, mutual needs and shared responsibilities.

(iv) One major objective of the Agenda 21 is that every local government should draw its own local Agenda 21.

RESOURCE PLANNING IN INDIA-

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Stages-

(i) Identification and inventory of resources.

- surveying,
- mapping and
- qualitative and
- quantitative
- estimation and
- measurement of the resources.

(ii) Evolving a planning structure

- appropriate technology,
- skill and
- institutional set up for implementing resource development plans.

(iii) Matching the resource development plans with overall national development plans.

The availability of resources is a necessary condition for the development of any region, but mere availability of resources in the absence of corresponding changes in technology and institutions may hinder development. Explain with reference to India.

- There are many regions in our country that are rich in resources but these are included in economically backward regions. On the contrary there are some regions which have a poor resource base but they are economically developed.
- the higher level of technological development of the colonizing countries that helped them to exploit resources of other regions and establish their supremacy over the colonies.
- Therefore, resources can contribute to development only when they are accompanied by appropriate technological development and institutional changes.
- in India, resource development in particular does not only involve the availability of resources, but also the technology, quality of human resources and the historical experiences of the people.

(i) The states of Jharkhand, Chhattisgarh and Madhya Pradesh are rich in minerals and coal deposits.

(ii) Arunachal Pradesh has abundance of water resources but lacks in infrastructural development

(iii)The state of Rajasthan is very well endowed with solar and wind energy but lacks in water resources.

(iv)The cold desert of Ladakh is relatively isolated from the rest of the country. It has very rich cultural heritage but it is deficient in water, infrastructure and some vital minerals.

- This calls for balanced resource planning at the national, state, regional and local levels.

RESOURCE PLANNING IS THEREFORE ESSENTIAL FOR

- maintaining quality of life
- sustainable benefit to the present generation and
- Also to meet the needs and aspirations of the future generation.

THEREFORE CONSERVATION IS ESSENTIAL

Conservation is defined as management of resources by humans.

Main objective-

- It aims at sustainable benefit to the present generation and also to meet the needs and aspirations of the future generation.
- Therefore it is a judicious and planned use of natural resources

Write a note/aims of Earth summit ,1992 and Agenda 21 (30-60words)

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Define resource planning. Why is it essential?

An equitable distribution of resources has become essential.(60-80words)

10. Name some resources rich but economically backward region and some resources poor but economically developed regions. Give reasons. 60-80words

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- Resource Planning- It is a technique or skill of proper utilization of resources. Resources are limited and unevenly distributed planning is important.
- Resource development- is not only exploitation but also preservation and reuse.
- Resource conservation-is management of resources by human beings. It is judicious and planned use of natural resources .It aims at sustainable benefit to the present generation and also maintain a potential to meet the needs and aspirations of the future generations.
- Characteristics of resources-Have utility, resources are limited, Resources can be transformed into more useful and valuable goods by using technology.
- Resource planning useful- reduces wastage, environment pollution free, takes care of future needs and prevents environment degradation.
- Resources necessary for human beings- Economic importance, Base for both agri and industrial development, Natural beauty and environment, Social development, Development and growth of human development.

LAND RESOURCES

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Easy to grasp

Land use	Comparison %1960-61 to 2002-03	Changes and Reason
Data available	93%	N-E – inaccessible, security, incomplete data; J&K-political ,data incomplete.
Net sown area	45.26% ---43.41%	Decreased, over use, degradation
Fallow land	3.73%----- 7.03%	Increased,
Pasture land	4.71%----3.45%	
Barren wasteland	12.01%---6.29%	Decreased,
Culturable wasteland	6.23%---4.41%	Increased
Forest land	18.11%--- 22.57%	Increased

- Arable land- Land currently ploughed and cultivated with crops. Also called cultivable land includes both cultivated and fallow land.
- Fallow land-It is a cultivable land which is being allowed to rest, uncropped or partially cropped for one or more reasons so that it can regain its fertility.
- Uncultivable land-The land cannot be used for cultivation at all.
- Net sown area- Land cultivated once in a year.

Explain land use data (only the % in 2002-03) to mention, reason for any 2.

QGive reasons for:

(a) **The pattern of net sown area varies greatly from one state to another.**

The pattern of net sown area varies from one state to another. Explain or Net sown area in Punjab is more than 80% while in Manipur it is 10%. Why.

Net sown area in Punjab is more than 80% because- plain,fertile area, climatic condition is suitable, has more dense population, more economic activities ,while in Manipur it is 10% because area is rugged,_____, inaccessible,_____ less_____.

Pattern of net sown area varies greatly from one state to another. State one reason

Punjab- plain ,fertile area, suitable climatic condition-agriculturally rich or any other reason .

(b) Forest area has not increased much-

The land under forest has increased from 18.11% to 22.57% in 2003 but is still less than the desired 33% because-

1. The land has been put for various uses – settlements, roads and railway construction, for industrial purposes.
2. People living on the border of forests and villages have not been able to maintain the ecological balance (deforestation for fuel wood etc).

Therefore there is a need to bring barren and wasteland under cultivation, need better management of forest cover and maintenance of ecological balance.

(c) The land under permanent pastures has decreased.

The land under permanent pastures has decreased from 4.71% to _____

Because-More and more land is being used for cultivation of crops due to increasing demands of increasing population.

2. This affects-tremendous pressure on livestock(cattle) population on agricultural land and leads to destruction of crops
3. Cattles are reared mainly on farm waste, few fodder crops and are therefore are not properly fed and the dairy products are not of the standard quality(poor quality).

(d) Define **culturable wasteland**. Reason for increase from 4.9% to 7. _ & in 2003

Culturable wasteland – is the cultivated land which is neglected(left uncultivated) due to various reasons such as people migrating from rural areas to urban areas ,insufficient agricultural inputs, lack of modern agricultural inputs as majority of farmers are poor.

CLASSIFICATION OF SOIL TYPES-

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SOIL TYPE	AREAS	FORMATION	FEATURE	CROPS
<p>ALLUVIAL SOIL</p> <p>alluvial soils are intensively cultivated and densely populated..</p>	entire northern plains ,eastern coastal plains regions of	<p>of various proportions of sand, silt and clay., the soils are coarse.</p> <p>on basis of their age. old alluvial (Bangar) and new alluvial (Khadar).</p>	<p>The bangar soil has higher concentration of <i>kanker</i> nodules than the Khadar.</p> <p>It has more fine particles and is more fertile than the bangar.</p> <p>are <u>very fertile</u>.</p>	<p>ideal for the growth of sugarcane, paddy, wheat and other cereal and pulse crops.</p> <p>(contain adequate proportion of potash, phosphoric acid and lime)</p>
<p>BLACK SOIL-</p>	Deccan trap (<i>Basalt</i>) region	<p>made up of extremely fine i.e. clayey material.</p> <p>They are well-known for their capacity to hold moisture. rich in soil nutrients,</p>	<p>develop deep cracks during hot weather, which helps in the proper aeration of the soil.</p>	<p>ideal for growing cotton and is also known as <i>black cotton soil</i></p>
<p>RED AND YELLOW SOIL</p>	crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan plateau.		<p>develop a reddish color due to diffusion of iron in crystalline and metamorphic rocks.</p> <p>It looks yellow when it occurs in a hydrated form</p>	
<p>LATERITE SOIL</p>	Karnataka, Kerala, Tamil Nadu	<p>develops in areas with high temperature and heavy rainfall.</p> <p>Result intense leaching due to heavy rain</p>	<p>Humus content of the soil is low because most of the microorganisms, particularly the decomposers, like bacteria, get destroyed</p>	<p>for growing tea and coffee</p> <p>Tamil Nadu, Andhra Pradesh and Kerala are more suitable for crops like cashew nut.</p>

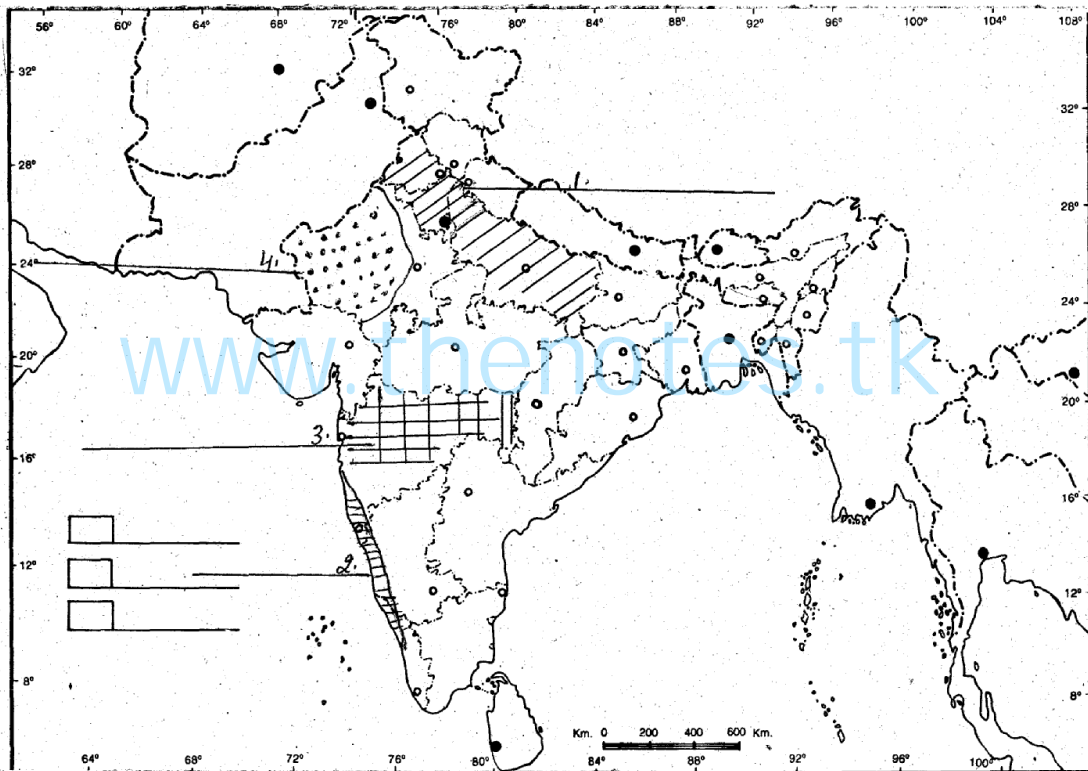
			due to high temperature	
ARID SOIL-	proper irrigation these soils become cultivable as has been in the case of western Rajasthan		sandy in texture and saline in nature Due to the dry climate, high temperature, evaporation is faster and the soil lacks humus and moisture	
Forest Soils	hilly and mountainous areas where sufficient rain forests are available		are loamy and salty in valley sides and coarse grained in the upper slopes	

Soil formation-

- Formed by physical, chemical and biological changes that take place continuously in the rocks. Soil formation begins with the breakdown of rocks into fine particles at the surface.
- The process of breakdown is weathering.
- Climate determines the rate of weathering Rate of weathering is high in regions of high temperature. Climate also decides the type of vegetation that helps in soil formation.
- Due to weathering an organic layer develops .Bacteria and other micro organisms act on the remains of plants and other organic material forming humus.Humus helps the loose soil grains to stay together and also make the soil fertile.
- Parent rock supply the bulk of the soil mass and determines the nutrient content of the soil. Texture and structure of the soil depends on the nature of parent rock.
- Local topography- Slope of the land decides accumulation of soil.
- Long period of time- Time provides maturity to the soil.

.Identify the following with help of information provided -

- 1.Suitable for cotton cultivation
- 2.Suitable for crop like cashew nuts
- 3.Soil contains Kanker layers
- 4.Develops on crystalline igneous rocks, iron content high.



LAND DEGRADATION

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CAUSES	Areas
over grazing by animals. for land degradation.	In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra
Mining-Mineral processing, grinding of limestone cement industry	Jharkhand, Chhattisgarh, Madhya Pradesh and Orissa
over irrigation	Punjab, Haryana, western Uttar Pradesh

SOIL EROSION

Removal of soil from one place to another by natural agents like wind, running water

<u>Gully erosion</u>	When the topmost layer of the soil is washed away by small channels of the river and degrades the land. It is unfit for cultivation and forms badlands	Chambal ravines degrades the chambal basin
<u>Sheet erosion</u>	the topmost layer of the soil is washed away due to heavy rainfall.	in N-E India& the Western ghats. Sheet erosion leads to soil leaching
<u>Wind erosion</u>	Wind carries the top layer of the soil deposits it in surrounding areas which destroy the cultivated area.	desert areas and the

CONSERVATION

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1. Terrace farming-
 - A series of wide steps are made along the slope following the contours. Steps can be cut out on the slopes making terraces. Terrace cultivation restricts erosion.
 - Western and central Himalayas have well developed terrace farming.
2. Contour ploughing-
 - fields are ploughed, sown along the natural contours of the hills. .
 - Ploughing along the contour lines can decelerate the flow of water down the slopes.
3. Large fields can be divided into strips. Strips of grass are left to grow between the crops.
 - This breaks up the force of the wind. This method is known as strip cropping.
4. Shelter belts are planted on the margins of the desert area to check the fury of the wind.
 - Done by planting lines of trees in rows. Rows of such trees are called shelter belts.
 - These shelter belts have contributed significantly to the stabilization of sand dunes and in stabilizing the desert in western India.
5. A forestation programmes,
 - planting of trees help to check soil erosion.
6. Strict action taken to check reckless felling of trees and overgrazing.
7. Construction of dams and gully trap inculcate water harvesting.
8. Practicing dry land farming in areas of inadequate rainfall and irrigation
9. By educating and sensitizing all land holders about various aspects of land resource and their sustainable use.

17. How can land be conserved in hilly areas? (Terrace farming, Contour ploughing and strip cropping) (60 words)

Easy to learn answers

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Technical and economic development has led to more consumption of resources.

Technical and economic development is necessary for industrial growth and advancement of the country. In today's world due to technical and economic development more consumption of resources is possible as world has shrunk and has become a global economy. Resource in one part of a world can be used in the other part of the world where resources are scarce. The same could be for a state of a country also. But with skill, knowledge and advanced technology resources are being over utilized that will lead to exhaustion /depletion of resources but we need to conserve them for future also without damaging the environment(sustainable development). (100 words)(underlined for 2 mark question)

Give 1 cause of wasteland (A land which is not suitable for economic activities and settlements). -(Relate to fig1.5 also)

Explain any 1-point of Natural cause mts, snow covered peaks, deserts swamps and marshy low lying areas due to stagnant water, or Human cause --Gully and sheet erosion due to land degradation(land that has lost its productivity over years and is not fit for proper use) deforestation and overgrazing, Degrade land due to dumping of industrial, chemical ,domestic waste.

Steps taken to reclaim wasteland Intro
line _____

1. Terrace farming along the hill slopes to control rapid runoff.
2. Cultivation of drought resistant crops in semi-arid areas to prevent wind erosion.
3. Prevent dumping of industrial and chemical waste to avoid land degradation.
4. Reclaim low lying areas and utilize for economic activities and settlements.

Regeneration of the environment leads to economic well being.

Regeneration (renewable res to exp with eg -say land res) Resources are available, use of tech, skill to satisfy needs,for eg land can be to utilized by better agricultural machines ,fertilizers(mention other inputs), helps to increase productivity, farmers earn livelihood both by agriculture and alternate -dairy products(animals are looked after better quality products, leads to more income for the farmers, improve standard of living leads to sustainable economic development.

People 's management is essential for ecological restoration (balance).

Why do we need to conserve our resources? What are the effects of over utilizing resources?

Resources are vital for human survival as well as for maintaining the quality of life.

It was believed that resources are free gifts of nature. As a result, human beings used them indiscriminately and this has led to the following major problems.

1. Depletion of resources for satisfying the greed of few individuals.

2 Accumulation of resources in few hands, which, divided the society into two -rich and poor.

3. Indiscriminate exploitation of resources has led to global ecological crises such as, global Warming, ozone layer depletion, environmental pollution and land degradation.

Therefore we need to conserve our resources by proper development, planning. (112words)

Explain the stages of resource planning in India. Why is it important?

Ans. Resource planning is a complex process which involves:

(i) Identification and inventory of resources across the regions of the country. This involves surveying, mapping and qualitative and quantitative estimation and measurement of the resources.

(ii) Evolving a planning structure endowed with appropriate technology, skill and institutional set up for implementing resource development plans.

(iii) Matching the resource development plans with overall national development plans.

Resource planning is important for maintaining quality of life /sustainable benefit to the present generation and also to meet the needs and aspirations of the future generation. (90 words)

What do you understand by conservation of resources?

A1. Conservation is defined as management of resources by humans. It aims at sustainable benefit to the present generation and also to meet the needs and aspirations of the future generation. Therefore it is a judicious and planned use of natural resources.(41words)

,Define Sustainable development

Sustainable economic development means 'development should take place without Damaging the environment and development in the present should not compromise with the Needs of the future generations.'

Write a note on Earth summit held in Brazil in 1992./ Importance of the earth summit / aims of agenda 21.

Rio de Janeiro Earth Summit, 1992

1. In June 1992, more than 100 heads of states met in Rio de Janeiro in Brazil, for the first International Earth Summit.

2. The Summit was convened for addressing urgent problems of environmental protection and socio economic development at the global level.

3. The assembled leaders signed the Declaration on Global Climatic Change and Biological Diversity. The Rio Convention endorsed the global Forest Principles and adopted Agenda 21 for achieving Sustainable Development in the 21st century.

4. Agenda 21 It is the declaration signed by world leaders in 1992 at the United Nations Conference on Environment and Development (UNCED), which took place at Rio de Janeiro, Brazil.

It aim-

(i) at achieving global sustainable development.

(ii) It is an agenda to combat environmental damage,

(iii) Curb or prevent Poverty, disease through global co-operation on common interests, mutual needs and shared responsibilities.

(iv) One major objective of the Agenda 21 is that every local government should draw its own local Agenda 21.

The availability of resources is a necessary condition for the development of any region, but mere availability of resources in the absence of corresponding changes in technology and institutions may hinder development. Explain with reference to India.

In earlier times, the higher level of technological development of the colonizing countries helped them to exploit resources

In India there are some regions which can be considered self sufficient in terms of the availability of resources and there are some regions which have acute shortage of some vital resources. For example-

(i) Jharkhand, Chhattisgarh are rich in minerals and coal deposits.

(ii) Arunachal Pradesh has abundance of water resources but lacks in infrastructural development (79 words)

(iii) The state of Rajasthan is very well endowed with solar and wind energy but lacks in water resources.

(iv) The cold desert of Ladakh has very rich cultural heritage but it is deficient in water, infrastructure and some vital minerals.

Resource development in particular does not only involve the availability of resources, but also the technology, quality of human resources and the historical experiences of the people. Therefore a balanced resource planning at the national, state, regional and local levels for a balanced development is essential. (45 words)

What is soil erosion? Explain the types of soil erosion.

A. Removal of soil from one place to another by natural agents like wind, running water. Mention the types-Gully erosion, Sheet and wind erosion.

(a) Gully erosion- When the topmost layer of the soil is washed away by small channels of the river and degrades the land. It is unfit for cultivation and forms badlands e.g.) Chambal ravines degrades the chambal basin.

(b) Sheet erosion- the topmost layer of the soil is washed away due to heavy rainfall. This is common in N-E India & the Western ghats. Sheet erosion leads to soil leaching.

(c) Wind erosion- In desert areas wind carries the top layer of the soil and deposits it in the surrounding areas which destroy the cultivated area.

How does industry cause land degradation? How can we reduce land degradation in industrial areas?

1. Mining and industrial activities deplete the land of its mineral deposits.

2. Dumping of industrial waste also degrades the land.

3. Mineral processing like grinding of limestone for cement industry generates lot of dust which pollutes the atmosphere, water and settles down on the cultivated area that destroys the crops.

Methods to reduce land degradation in industrial areas -Proper discharge and disposal of industrial effluents and waste after treatment.

Classify the resources on the basis of status of development. Explain any 2.

A. Potential Resources: 1. Resources which are found in a region, but have not been utilised. 2. For example, the western parts of India particularly Rajasthan and Gujarat have enormous potential for the development of wind and solar energy, but so far these have not been developed properly.

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Reserves are the subset of the stock which can be put into use with the help of existing technical 'know-how' but their use has not been started. These can be used for meeting future requirements.

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