UNIQUE STUDY POINT

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Class: X	**Subject:** Social Science	**Session:** 2025-26
Chapter: 01 - Resources and Development	**Time:** 1½ Hours	**Max. Marks:** 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

Q1. Resources are classified on the basis of origin as:

(a) Renewable and non-renewable
(b) Biotic and abiotic
(c) Individual and community
(d) Potential and developed

Q2. What is the main cause of land degradation in Punjab?

(a) Deforestation
(b) Overgrazing
(c) Over irrigation
(d) Mining

Q3. In which state is the net sown area less than 10% of the total geographical area?

(a) Punjab
(b) Haryana
(c) Mizoram
(d) Uttar Pradesh

Q4. Which three rivers deposited alluvial soil in the northern plains?

(a) Ganga, Yamuna, Narmada
(b) Indus, Ganga, Brahmaputra
(c) Krishna, Godavari, Kaveri
(d) Mahanadi, Brahmaputra, Indus

Q5. Which state has abundance of water resources but lacks infrastructural development?

(a) Rajasthan

(b) Arunachal Pradesh
(c) Gujarat
(d) Haryana

Q6. Forest soils in snow-covered areas of Himalayas are:

(a) Acidic with low humus content
(b) Alkaline with high humus content
(c) Neutral with moderate humus
(d) Highly fertile with rich humus

Q7. Arid soils contain high amounts of which substance in lower horizons?

(a) Humus
(b) Kankar
(c) Iron oxide
(d) Phosphorus

Q8. Which type of soil is found in the deltas of Mahanadi, Godavari, Krishna and Kaveri?

(a) Black soil
(b) Red soil
(c) Alluvial soil
(d) Laterite soil

Q9. What percentage of India's total geographical area is covered by plateau region?

(a) 23%
(b) 27%
(c) 30%
(d) 43%

Q10. The soil that develops deep cracks during hot weather is:

(a) Alluvial soil
(b) Black soil
(c) Red soil
(d) Forest soil

SECTION B - Short Answer Questions (2 marks each)

Q11. Differentiate between biotic and abiotic resources with examples.

Q12. What are the two main components of alluvial soil? Why is Khadar more fertile than Bangar?

Q13. What is strip cropping? How does it prevent soil erosion?

Q14. Name the book published after the Brundtland Commission Report. What concept did this report introduce?

SECTION C - Short Answer Questions (3 marks each)

Q15. Explain the classification of resources on the basis of exhaustibility. Give examples of each category.

Q16. Why is black soil ideal for growing cotton? Describe any three characteristics that make it suitable for cotton cultivation.

Q17. Describe three human activities that have contributed significantly to land degradation. How do they cause

damage to land?

SECTION D - Long Answer Question (5 marks)

Q18. Compare and contrast any four types of soils found in India on the basis of their formation, color, characteristics, and crops grown. Also mention the regions where each soil type is predominantly found.

SECTION E - Case Study Based Questions (4 marks each)

Q19. Read the following case study and answer the questions that follow:

"*The use of land is determined both by physical factors such as topography, climate, soil types as well as human factors such as population density, technological capability and culture and traditions. Total geographical area of India is 3.28 million sq km. Land use data, however, is available only for 93 per cent of the total geographical area. The pattern of net sown area varies greatly from one state to another. It is over 80 per cent of the total area in Punjab and Haryana.*"

(i) Name two physical factors that determine land use. (1)
(ii) Why is land use data available only for 93% of India's geographical area? (1)
(iii) Why do Punjab and Haryana have such high net sown area? Give two reasons. (2)

Q20. Read the following case study and answer the questions that follow:

"*Mining sites are abandoned after excavation work is complete leaving deep scars and traces of over-burdening. In states like Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha, deforestation due to mining have caused severe land degradation. The mineral processing like grinding of limestone for cement industry and calcite and soapstone for ceramic industry generate huge quantity of dust in the atmosphere. It retards the process of infiltration of water into the soil after it settles down on the land.*"

(i) What is left behind after mining excavation is complete? (1)
(ii) Name two states where mining has caused severe land degradation. (1)
(iii) How does mineral processing affect soil and water infiltration? Explain. (2)

DETAILED ANSWER KEY - PAPER 03

SECTION A - Answers to MCQs

Q1. (b) Biotic and abiotic

On the basis of origin, resources are classified as biotic (derived from living organisms) and abiotic (derived from non-living things).

Q2. (c) Over irrigation

In Punjab, over irrigation is responsible for land degradation due to water logging leading to increase in salinity and alkalinity in the soil.

Q3. (c) Mizoram

Net sown area is less than 10 per cent in Arunachal Pradesh, Mizoram, Manipur and Andaman Nicobar Islands.

Q4. (b) Indus, Ganga, Brahmaputra

The entire northern plains are made of alluvial soil deposited by three important Himalayan river systems - the Indus, the Ganga and the Brahmaputra.

Q5. (b) Arunachal Pradesh

Arunachal Pradesh has abundance of water resources but lacks in infrastructural development.

Q6. (a) Acidic with low humus content

In the snow-covered areas of Himalayas, forest soils experience denudation and are acidic with low humus content.

Q7. (b) Kankar

The lower horizons of arid soil are occupied by Kankar (calcium carbonate deposits) because of the increasing calcium content downwards.

Q8. (c) Alluvial soil

Alluvial soil is found in the eastern coastal plains particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers.

Q9. (b) 27%

About 27 per cent of the area of the country is the plateau region. It possesses rich reserves of minerals, fossil fuels and forests.

Q10. (b) Black soil

Black soils develop deep cracks during hot weather, which helps in the proper aeration of the soil.

SECTION B - Answers to Short Answer Questions

Q11. Biotic and abiotic resources

Biotic Resources: Resources obtained from the biosphere (living organisms) are called biotic resources.

Examples: Forests, wildlife, fisheries, livestock, human beings, crops, vegetation

Abiotic Resources: Resources composed of non-living things are called abiotic resources.

Examples: Rocks, metals, minerals, water, land, air, solar energy, wind energy

Q12. Components of alluvial soil and fertility comparison

Two main components of alluvial soil:

1. Various proportions of sand, silt and clay

2. Minerals and organic matter

Why Khadar is more fertile than Bangar:

• Khadar has more fine particles which have better water retention and nutrient-holding capacity

• It is renewed almost every year by floods, which bring fresh silt and nutrients

• Bangar has higher concentration of kanker nodules (calcium carbonate), making it less fertile

• Khadar is newer and has better soil structure for agriculture

Q13. Strip cropping and soil conservation

Strip Cropping: Large fields are divided into strips. Strips of grass are left to grow between the crops.

How it prevents soil erosion:

• The grass strips break up the force of the wind, acting as barriers

• They also slow down water flow across the field

• The grass roots bind soil particles together, preventing their removal

• The strips catch any soil that might be eroded from crop areas

• This method is particularly effective in areas with strong winds or on gentle slopes

Q14. Brundtland Commission Report details

Book name: The report was subsequently published in a book entitled "Our Common Future".

Concept introduced: The Brundtland Commission Report (1987) introduced the concept of 'Sustainable Development' and advocated it as a means for resource conservation. This concept defined development that meets present needs without compromising the ability of future generations to meet their own needs.

SECTION C - Answers to Short Answer Questions

Q15. Classification based on exhaustibility

On the basis of exhaustibility, resources are classified into two categories:

1. Renewable Resources:

• These resources can be renewed or reproduced by physical, chemical or mechanical processes

• They are either unlimited or can be replenished within a reasonable time span

Examples:

- Solar energy and wind energy (continuous flow resources)

- Water (renewable through water cycle)

- Forests and wildlife (biological resources that can regenerate)

2. Non-Renewable Resources:

• These resources take millions of years to form and are limited in quantity

• Once depleted, they cannot be renewed in a human timescale

• Can be further divided into recyclable (like metals) and non-recyclable (like fossil fuels)

Examples:

- Fossil fuels: coal, petroleum, natural gas (formed over millions of years)

- Minerals: iron ore, copper, gold (finite deposits)

- Nuclear minerals: uranium (limited availability)

Q16. Black soil and cotton cultivation

Black soil is ideal for growing cotton due to the following characteristics:

1. Moisture retention capacity:

• Black soils are well-known for their capacity to hold moisture

• Cotton requires moisture throughout its growing season, and black soil provides this consistently

• The soil can retain water even during dry spells, supporting cotton growth

2. Rich nutrient content:

• Black soil is rich in calcium carbonate, magnesium, potash and lime

• These nutrients are essential for healthy cotton plant growth

• The high nutrient content ensures strong fiber development in cotton

3. Self-ploughing nature:

• Black soils develop deep cracks during hot weather

• These cracks help in proper aeration of the soil, allowing roots to breathe

• The cracking also helps in mixing nutrients and creates a self-tilling effect

• When rains come, the soil swells and closes the cracks, holding moisture

Additional advantage: Black soil's sticky nature when wet allows it to be easily tilled during the pre-monsoon period or immediately after first shower, which is perfect for cotton sowing timing.

Q17. Human activities causing land degradation

Three significant human activities that contribute to land degradation:

1. Deforestation:

• Trees are cut down for timber, agriculture, or development projects

• Removes protective vegetation cover that holds soil in place

• Tree roots no longer bind soil particles, making land susceptible to erosion

• Particularly severe in mining areas of Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha

• Loss of trees also affects water cycle and soil moisture retention

2. Overgrazing:

• Excessive cattle grazing removes all vegetation from an area

• Leaves soil exposed to wind and water erosion

• Compacts the soil through constant trampling, reducing its ability to absorb water

• One of the main reasons for land degradation in Gujarat, Rajasthan, Madhya Pradesh and Maharashtra

• Prevents natural vegetation regeneration

3. Mining and Quarrying:

• Mining activities remove topsoil and vegetation completely

• Leave deep scars and traces of over-burdening on land

• Sites are often abandoned after excavation, leaving degraded land

• Mineral processing generates huge quantity of dust that settles on surrounding land

• This dust retards the infiltration of water into soil

• Industrial effluents and wastes pollute both land and water

SECTION D - Answer to Long Answer Question

Q18. Comparison of four soil types

1. ALLUVIAL SOIL

Formation: Deposited by three important Himalayan river systems - Indus, Ganga and Brahmaputra. Formed by the accumulation of silt brought by rivers.

Color: Light to dark brown or grey depending on age and composition

Characteristics:

• Consists of various proportions of sand, silt and clay

• Divided into old alluvial (Bangar) and new alluvial (Khadar)

• Contains adequate proportion of potash, phosphoric acid and lime

• Highly fertile and suitable for intensive cultivation

Crops: Sugarcane, paddy, wheat, and other cereal and pulse crops

Regions: Entire northern plains, narrow corridor through Rajasthan and Gujarat, deltas of eastern coast (Mahanadi, Godavari, Krishna, Kaveri)

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2. BLACK SOIL (REGUR SOIL)

Formation: Formed from the weathering of Deccan trap (basalt) rock. Climatic conditions along with parent rock material are important factors.

Color: Black due to presence of titaniferous magnetite, iron and aluminum compounds

Characteristics:

• Made up of extremely fine clayey material

• Excellent capacity to hold moisture

• Rich in calcium carbonate, magnesium, potash and lime

• Poor in phosphoric contents

• Develops deep cracks during hot weather (helps in aeration)

• Sticky when wet, difficult to work unless tilled at right time

Crops: Cotton (hence called black cotton soil), also suitable for jowar, wheat, linseed, gram, citrus fruits

Regions: Plateaus of Maharashtra, Saurashtra, Malwa, Madhya Pradesh, Chhattisgarh, extends along Godavari and Krishna valleys

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3. RED AND YELLOW SOIL

Formation: Develops on crystalline igneous rocks in areas of low rainfall through weathering process

Color: Reddish due to diffusion of iron in crystalline and metamorphic rocks; looks yellow when in hydrated form

Characteristics:

• Fine-grained soils are normally fertile

• Coarse-grained soils in dry upland areas are poor in fertility

• Varies in texture from sandy to clayey

• Generally deficient in nitrogen, phosphorus and humus

• Rich in iron and potassium content

Crops: Fine-grained variety suitable for rice, ragi, sugarcane; coarse variety less productive

Regions: Eastern and southern parts of Deccan plateau, parts of Odisha, Chhattisgarh, southern parts of middle Ganga plain, piedmont zone of Western Ghats

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4. LATERITE SOIL

Formation: Develops under tropical and subtropical climate with alternate wet and dry season. Result of intense leaching due to heavy rain. Name derived from Latin word 'later' meaning brick.

Color: Reddish to brown

Characteristics:

• Mostly deep to very deep soils

• Acidic in nature (pH less than 6.0)

• Generally deficient in plant nutrients

• Humus rich where forests exist; humus poor under sparse vegetation

• Prone to erosion due to their position on landscape

• Forms hard crust when exposed to air

Crops: After soil conservation - tea, coffee, cashew nut, rubber. Suitable for plantation crops.

Regions: Southern states, Western Ghats region of Maharashtra, Odisha, some parts of West Bengal, North-eastern regions, hilly areas of Karnataka, Kerala, Tamil Nadu

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COMPARATIVE SUMMARY:

• **Most fertile:** Alluvial soil (highest agricultural productivity)

• **Best moisture retention:** Black soil (ideal for water-intensive crops)

• **Most weathered:** Laterite soil (intense leaching)

• **Most widespread:** Alluvial soil (entire northern plains)

• **Needs most conservation:** Laterite and red soils (prone to erosion)

SECTION E - Answers to Case Study Based Questions

Q19. Case Study on Land Use Pattern

(i) Two physical factors determining land use: (1 mark)

Two physical factors that determine land use are:

• Topography (relief features)

• Climate (rainfall and temperature)

(Other acceptable answers: soil types)

(ii) Why data available for only 93%: (1 mark)

Land use data is available only for 93 per cent of the total geographical area because:

• The land use reporting for most of the north-east states except Assam has not been done fully

• Some areas of Jammu and Kashmir occupied by Pakistan and China have also not been surveyed

(iii) Why Punjab and Haryana have high net sown area: (2 marks)

Punjab and Haryana have over 80% net sown area due to:

Reason 1 - Favorable topography: These states consist mainly of flat fertile plains formed by alluvial deposits. The level terrain is ideal for agriculture and mechanization. There are minimal hilly or forested areas that would be unsuitable for cultivation.

Reason 2 - Well-developed irrigation: Extensive canal network and groundwater irrigation facilities enable year-round cultivation. The Green Revolution also led to development of better agricultural infrastructure and practices in these states.

Reason 3 - Soil fertility: Presence of highly fertile alluvial soil (both Khadar and Bangar) makes the land highly productive for agriculture.

(Any two well-explained reasons are acceptable for 2 marks)

Q20. Case Study on Mining and Land Degradation

(i) What is left after mining: (1 mark)

After excavation work is complete, mining sites leave behind:

• Deep scars on the land

• Traces of over-burdening (waste rock and soil removed during mining)

• Abandoned degraded land

(ii) Two states with mining-related degradation: (1 mark)

Two states where mining has caused severe land degradation are:

• Jharkhand

• Chhattisgarh

(Other acceptable answers: Madhya Pradesh, Odisha)

(iii) How mineral processing affects soil and water infiltration: (2 marks)

Mineral processing affects soil and water infiltration in the following ways:

Dust generation: Mineral processing activities like grinding of limestone for cement industry and calcite and

soapstone for ceramic industry generate huge quantities of dust in the atmosphere.

Dust settlement effect: This dust settles down on the surrounding land, forming a layer on the soil surface. This layer acts as a barrier or crust on the soil.

Infiltration retardation: The dust layer retards (slows down or prevents) the process of infiltration of water into the soil. Water cannot easily penetrate through this dust-covered surface into the deeper soil layers.

Consequences: This reduced infiltration leads to:

- Increased surface runoff and soil erosion
- Reduced groundwater recharge
- Decreased soil moisture for plant growth
- Further land degradation in the area surrounding mining and processing units

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