Resources and Development

Quick Revision

Resource

Everything available in our environment that can be used to satisfy our needs, which is technologically accessible, economically feasible and culturally acceptable can be termed as resource.

Types of Resource

Resources can be classified on the basis of origin, exhaustibility, ownership and the status of development.

- **On the basis of origin**, resources are of two types, viz., biotic resources and abiotic resources.
  - **Biotic resources** are obtained from biosphere and have life, i.e.; human beings, livestock, flora and fauna, fisheries etc.
  - **Abiotic resources** are composed of non-living things, e.g. rocks and metals.
- **On the basis of exhaustibility**, resources are renewable and non-renewable.
  - **Renewable resources** can be renewed or reproduced by applying physical, chemical or mechanical process e.g. solar energy, wind energy, forest, water, wildlife, etc.
    These resources can be further sub divided into two forms, i.e. flow or continuous resources and biological resources.
  - **Non-renewable resources** are formed through long geological time period and can not be renewed easily,
    e.g. minerals, metals and fossil fuels. These resources may further divided as recyclable and non-recyclable.
- **On the basis of ownership,** resources are individual, community owned, national and international resources.
  - **Individual resources** are owned privately by individuals, e.g. plantation, pasture land, farmland, etc.
  - **Community owned resources** are equally accessible to all the members of the community, e.g., grazing ground, burial grounds, etc.
  - **National resources** are under the control of nation, e.g. canal, roadways, railways, etc.
  - **International resource** are international institutions which regulate some resources like the oceanic resources beyond 200 nautical miles of the **Exclusive Economic Zone** belong to open ocean which cannot be used by any country without the permission of international institutions.
- **On the basis of the status of development**, resources are potential, developed, stocks and reserves.
  - **Potential resources** are those resources which are found in a region, but not yet have been utilised.
  - **Developed resources** are surveyed and their quality and quantity is determined for utilisation e.g. coal and petroleum.
  - **Stock** Material in the environment which have the potential to satisfy human need but human being do not have appropriate technology to access these are known as **stock**, e.g. hydrogen in water.

– **Reserves** are subset of stock which can used by technical know-how, but their use has not been started, e.g. river water.

Development of Resources

- Resources are vital for human survival and for maintaining quality of life. But over utilisation of resources has led to the serious global problems like global warming, ozone layer depletion, environmental pollution and land degradation.
- An equal distribution of resources therefore, is essential for a sustained quality of life and global peace. This can be achieved through sustainable development and resource planning.

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.

Rio De Janeiro Summit, 1992

- The first International Earth Summit was held in Rio De Janeiro in June 1992.
- The summit addressed the problems of environmental protection and socio-economic development.
- Leaders of more than 100 countries signed the **Declaration on Global Climate Change** and Biological Diversity. They also adopted Global Forest Principles and Agenda 21.

Agenda 21

- It is a declaration signed at the **United Nations Conference on Environment and Development** (UNCED) in 1992 at Rio De Janeiro, Brazil.
- It aims to combat environmental damage, poverty, disease through global co-operation, etc. It also aims that every local government should draw its own local Agenda-21.

Resource Planning

- Planning is the widely accepted strategy for judicious use of resources.
- Resource planning is essential for sustainable development in India because some regions are rich in one resources but are deficient in other resources.
- There are some regions which can be considered self sufficient in terms of availability of resources and there are some regions which have acute shortage of vital resources. e.g. Jharkhand and Madhya Pradesh.

Resource Planning in India

- Complex process of resource planning in India is divided into three stages, e.g. identification and inventory of resources, planning for resource development, matching the resource development plans with overall national development plans.
- India has made concerted efforts for achieving the goals of resources planning right from the First Five Year Plan launched after Independence.

Resources and Colonisation

- Rich natural resources of colonies were the main attractions for foreign invaders.
- Technological development of the colonising countries helped them to exploit resources of the colonised regions.
- India has experienced by colonisation that the availability of resources as well as the technology and quality of human resource are needed for proper development.

Conservation of Resources

- Resources are vital for any developmental activity. To overcome the problems of irrational consumption and over-utilisation of resources, resource conservation at various levels is important.
- At international level, resource conservation was advocated in 1968 at **Club of Rome** and in 1987, the **Brundtland Commission Report** extensively mentioned the necessity of resources.

Land Resources

- Land is a very important natural resource. It is limited, so, it needs to be used with careful planning.
- Indian's geographical area compries of variety of relief features i.e. 43 per cent plain land area for agriculture and industries, 27 per cent plateau which source of mineral, fossil fuels and forest and 30 per cent of mountains.

Land Utilisation

Land resource are used for the many purposes such as Forests, Land not available for cultivation, Other uncultivated land, Fallow lands, Net sown area.

Land Use Pattern in India

- The use of land is determined by **physical factors** like climate, soil type, topography etc as well as **human factors** like population density, technological capability and culture and traditions, etc.
- Total geographical area of India is 3.28 million sq. km. Out of this, the land under permanent pasture has decreased.
- In India, land use data is available for only 93 per cent of total area.
- Between 1960-61 and 2014-2015 major changes took place in land use pattern in India. For example,
  - Most of the other than current fallow lands are of poor quality and their cost of cultivation is very high. The pattern of net sown area varies greatly from one state to another.
  - Forest area in India is far lower than the desired 33% of geographical area.
  - Waste land includes rocky, arid and desert areas and land put to other non-agricultural uses includes settlements, roads, railways, industry, etc.

Land Degradation and Conservation Measures

- It is a common problem associated with land resources which is accelerated today because of human activities like deforestation, overgrazing and mining.
- Natural factors like water and wind cause erosion of top soil.
- Mineral processing is also responsible for land degradation.
- Measures to reduce land degradation are afforestation, controlled grazing, stabilisation of sand dunes etc.

Soil as a Resources

- Soil is a living system and supports different types of living organisms.
- It takes millions of years to form soil upto a few an in depth relief, parent rock or bed rock, climate, vegetation and other forms of life and time are important factors in the formation of soil.

Classification of Soil

There are various types of soils found in India such as Alluvial, Black, Red and Yellow, Laterite, Arid, Forest and Mountain soils.

Alluvial Soils

Alluvial soil is the most widespread soil in India, which has been deposited by three important Himalayan river systems i.e. the Indus, the Ganges and the Brahmaputra.

Black Soils

- Black soil is also known as **black cotton soil** or **regur soil**. The factors that are important for the formation of black soil are climatic condition along with parent rock material.
- It is found in the Deccan trap (Basalt) region and is made up of **lava flows**.

Red and Yellow Soils

- It is **red in colour** due to diffusion of iron particles into crystalline and **metamorphic rocks** in low rainfall areas of the Deccan plateau (Eastern and Southern parts).
- It is found in parts of Odisha, Chhattisgarh, Southern parts of Middle Ganga Plain and along the piedmont zone of the Western Ghats.

Laterite Soils

- The word laterite has been derived from the Latin word **later** which means **brick.** Laterite soil develops in tropical and sub-tropical climate with alternative wet and dry season.
- It is found mostly in Western Ghats region of Maharashtra, Odisha, some parts of West Bengal and North-East regions.

Arid Soils

- Arid Soil is found in dry areas. In some areas, common salt is obtained in this soil due to evaporation of water.
- It can be useful for cultivation only with suitable irrigation methods as in case of Western Rajasthan.

Forest Soils

- Forest soil is found in hilly and mountainous areas where sufficient rain forests are available.
- It is found in lower parts of valleys particularly on the river terraces.

Soil Erosion and Soil Conservation

Soil erosion is the removal of the soil cover and subsequent washing down of top soil.

- The process of soil formation and erosion go on simultaneously and there is a balance between the two process.
- The balance is disturbed due to natural and human causes.
- Erosion through wind, glacier and water are natural causes.
- Human has contributed more towards soil erosion due to deforestation, faulty methods of agriculture, overgrazing, construction and mining, etc.
- Contour ploughing, terrace farming, strip cropping, shelter belts can prevent soil erosion.

Objective Questions

Multiple Choice Questions

01. The resources which are obtained from biosphere and have life are called

(a) Biotic (b) Abiotic
(c) Parasitic (d) None of these

02. Which of the following is not classified on the basis of status of development?

(a) Potential resource
(b) Developed resource, Stock
(c) Reserves resource
(d) Renewable resource

03. Individual, community, national and international resources are classified on the basis of

(a) origin (b) exhaustibility
(c) ownership (d) status of development

04. The ocean resources beyond 200 nautical miles is classified under which zone?

(a) Exclusive Economic Zone
(b) Export-Processing Zone
(c) Special Economic Zone
(d) None of the above

05. The territorial waters that extend upto 12 nautical miles from base of a coastal country is recognised by ..... on Law of Sea.

(a) United Nation Convention
(b) Rio de Janeiro Earth Summit
(c) Nuclear Security Summit
(d) None of the above

06. Which of the following is essential for sustainable existence of all forms of life?

(a) Resource planning
(b) Resource management
(c) Resource extraction
(d) Resource generation

07. Area sown more than once in an agricultural year plus net sown area is known as

(a) fallow lands (b) gross cropped area
(c) cropped area (d) grazing land

08. Which state among the North-Eastern states has been fully surveyed for its land use?

(a) Arunachal Pradesh (b) Manipur
(c) Tripura (d) Assam

09. Which of the following soil is more common in piedmont plains such as Duars, Chos and Terai?

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

10. Which soil is also known as regur soil?

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

11. Black soils are generally poor in
(a) Phosphoric content
(b) Moisture
(c) Potash
(d) Calcium carbonate

12. Where are red soil mostly found?
(a) Deccan plateau, parts of Odisha
(b) Kerala and Karnataka
(c) Maharashtra and Madhya Pradesh
(d) Gujarat and Rajasthan

13. Laterite soil is mainly found in
(a) Southern states
(b) Uttar Pradesh
(c) Chhattisgarh
(d) Madhya Pradesh

14. The lower horizons of the arid soil is occupied by kankar due to increasing
(a) Calcium content
(b) Potash content
(c) Lime, potash and phosphorous content
(d) Phosphorous content

15. In the snow covered areas of Himalayas, which of the following soil experiences denudation and is acidic in nature with humus content?
(a) Laterite soil
(b) Black soil
(c) Alluvial soil
(d) Forest soil

16. ..... soils are generally sandy in texture and saline in nature.
(a) Laterite soil (b) Arid soil
(c) Red soil (d) Alluvial soil

17. The land becomes unfit for cultivation is known as ..... .
(a) Fallow land (b) Bad land
(c) Deserted land (d) Wasted land

18. The running water cuts through the clayey soils and makes deep channels as
(a) bad land (b) gullies
(c) deltas (d) None of these

19. Identify the correct reason for the formation of gullies in bad lands.
(a) Formed when running water cuts through soils making deep channels.
(b) When water flows over large areas down a slope.
(c) When moving wind blows away loose soil of flat lands.
(d) Formed when ploughing is done in a wrong way.

20. ..... is a strip cropping
(a) Planting lines of trees
(b) Planting between water beds
(c) Strip of grass are left to grow between the crops
(d) Cultivating making steps

21. Complete the following table with correct information with regard to forest soil.

Soil	Soil texture	Areas where found	Humus content
Forest Soil	Loamy and Silty	(a) ...	(b) ...

(a) Hills/mountain , low (b) Plain , low
(c) Desert, high (d) Plateau, low

22. Which type of erosion is depicted in the picture given below?

(a) Sheet erosion (b) Glacial erosion
(c) Gully erosion (d) Wind erosion

23. Which of the following pair is not correctly matched?
(a) Alluvial soil-ideal for sugarcane and paddy
(b) Black soil - cotton
(c) Laterite sol - cashewnut
(d) Red soil - Wheat and Bajra

24. Which one of the following pair is correctly matched?

(a) Biotic Resource - Rocks
(b) Abiotic Resource - Flora and Fauna
(c) Renewable Resource - Solar Energy
(d) Non-renewable Resource - Wind Energy

25. Which of the following is not correctly matched?

(a) Sheet erosion - Top soil is washed away
(b) Wind erosion - wind blows loose soil of flat
(c) Land not available for cultivation - fallow land
(d) Soil ideal for cotton - black soil

26. Match the following.

	List A		List B
A.	Laterite soil	1.	High moisture retention
B.	Black soil	2.	Intensively cultivated
C.	Alluvial soil	3.	Source of salt
D.	Arid soil	4.	Problem of leaching

Codes

	A	B	C	D
(a)	1	1	2	3
(b)	2	1	3	4
(c)	4	1	2	3
(d)	1	4	3	2

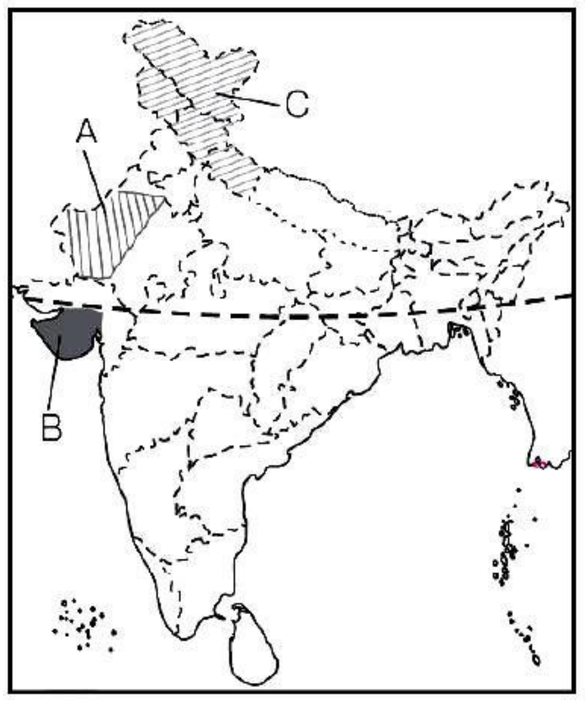
27. Match the following.

	List A		List B
A.	Humans and coal	1.	National resources
B.	Parks and burial grounds	2.	Community owned resources
C.	Coal mines and railway	3.	Continuous resources
D.	Running water and wind	4.	Biotic resources

Codes

	A	B	C	D
(a)	4	1	2	3
(b)	4	2	1	3
(c)	1	2	3	4
(d)	1	3	2	4

Directions (Q. Nos. 27-29) *Identify the type of soil which is found in shaded region marked as A, B and C respectively on the map of India.*

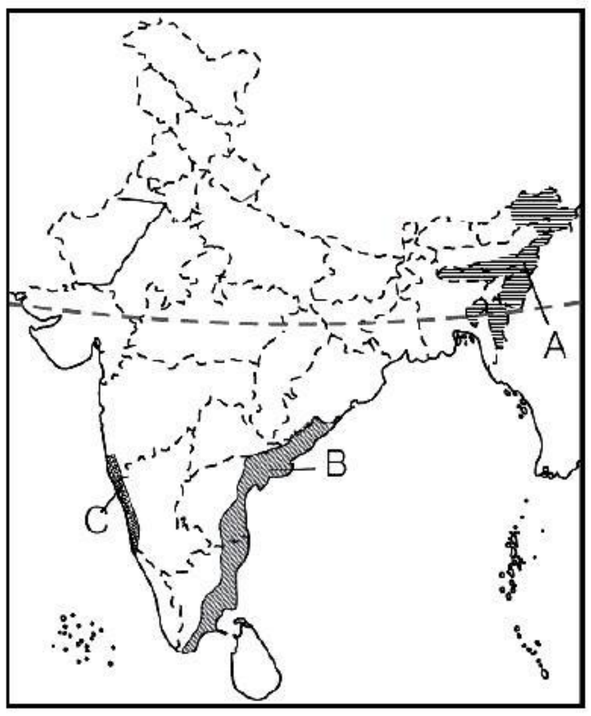


27. (a) Arid soil (b) Black soil
(c) Laterite soil (d) Sandy soil

28. (a) Alluvial soil
(b) Laterite soil
(c) Black soil
(d) Forest and mountainous soil

29. (a) Black soil
(b) Arid soil
(c) Forest and mountainous soil
(d) Red and Yellow soil

Directions (Q. Nos. 30-32) *Identify the type of soil which is found in shaded region marked as A, B and C respectively on the map of India.*



30. (a) Arid soil (b) Black soil
(c) Red and Yellow soil (d) Alluvial soil

31. (a) Black soil
(b) Forest and mountainous soil
(c) Arid soil
(d) Alluvial soil

32. (a) Lateriate soil (b) Black soil
(c) Arid soil (d) Alluvial soil

Assertion/Reasoning MCQs

Directions (Q. Nos. 33-36) *In the given question, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct code.*

Codes

(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true

33. **Assertion** (A) The denudation of the soil cover and subsequent washing down is described as soil erosion.

Reason (R) The process of soil formation and erosion go on simultaneously and generally there is a balance between two.

34. **Assertion** (A) The lower horizon of the arid soil is occupied by kankar.

Reason (R) It is because of the increasing calcium content downwards in arid soil.

35. **Assertion** (A) Wind blows loose soil off flat or sloping land known as wind erosion.

Reason (R) Soil erosion is also caused due to defective methods of farming.

36. **Assertion** (A) The laterite soil develops under tropical and sub-tropical climate with alternate wet and dry season.

Reason (R) This soil is the result of intense leaching due to heavy rain.

Cased Based MCQs

01. Read the source and answer the following questions.

Everything available in our environment which can be used to satisfy our needs provided, it is technologically accessible, economically feasible and culturally acceptable can be termed as 'Resource'.

The process of transformation of things available in our environment involves an interactive relationship between nature, technology and institutions. Human beings interact with nature through technology and create institutions to accelerate their economic development.

Do you think that resources are free gifts of nature as it assumed by many? They are not. Resources are a function of human activities. Human being themselves are essential components of resources. They transform material available in our environment into resources and use them.

(i) Which among the following can be counted as a resource?

(a) Livestock
(b) Wind mill
(c) Railway lines
(d) All of the above

(ii) When nature gets transformed in different ways, then which of the following takes place?

(a) Economic development
(b) Resource planning
(c) Both (a) and (b)
(d) None of the above

(iii) Human beings interact with nature through which of the following?

(a) Institutions (b) Technology
(c) Resources (d) None of these

(iv) Match the following.

	List I		List II
A.	On the basis of origin	1.	Individual, community, national and international
B.	On the basis of exhaustibility	2.	Biotic and abiotic
C.	On the basis of ownership	3.	Potential, developed stock and reserves
D.	On the basis of status of development	4.	Renewable and non-renewable

Codes

	A	B	C	D		A	B	C	D
(a)	3	2	1	4	(b)	2	4	1	3
(c)	1	2	3	4	(d)	4	3	2	1

02. Read the source and answer the following questions.

Individual Resources These are also owned privately by individuals. 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. Urban people own plots, houses and other property Plantation, Pasture lands, ponds, water in wells etc. are some of the examples of resource ownership by individuals.

Community Owned Resources There are resources which are accessible to all the members of the community. Village commons (grazing grounds, burial grounds, village ponds, etc.) public parks, picnic spots, playgrounds in urban areas are de facto accessible to all the people living there.

(i) Which of the following is true about Individual resources?

(a) It can be shared by others
(b) It can't be shared by others
(c) It can be operated by community
(d) It can operated by head of the village

(ii) Which of the following is not the example individual resources

(a) Ponds (b) House
(c) Pasture lands (d) Public parks

(iii) A landless former possesses which type of resource?

(a) Abiotic resource
(b) Non renewable resource
(c) Community owned resource
(d) Individual resource

(iv) Some places in urban areas like parks, cremation grounds etc. can be classified into which resource?

(a) Potential resource
(b) Community owned resource
(c) National resource
(d) Individual resource

03. Read the source and answer the following questions.

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.

India has made concerted efforts for achieving the goals of resource planning right from the First Five Year Plan launched after Independence. 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. 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.

(i) Why resource planning is necessary?
(a) For equal distribution of resource
(b) For conservation of resource for future generation
(c) To avoid further destruction of the Environment
(d) All of the above

(ii) Inspite of having lot of natural resources, Indias development shows ..... .
(a) advanced technology
(b) good availability of resources
(c) lack of resource planning
(d) All of the above

(iii) Why many regions of India are rich in resources but economically backward?
(a) Unequal distribution of resource
(b) Lack of resource planning
(c) Poor quality of resource
(d) Because of large population

(iv) Why certain regions despite having poor amount of sources are well developed?
(a) Region have better resource planning
(b) Unequal distribution of resources
(c) Region have less density of population
(d) good quality of resources

04. Read the source and answer the following questions.

We live on land, we perform our economic activities on land and we use it in different ways. Thus, land is a natural resource of utmost importance. It supports natural vegetation, wildlife, human life, economic activities and transport and communication systems. However, land is an asset of a finite magnitude, therefore, it is important to use the available land for various purposes with careful planning. India has land under a variety of relief features, namely; mountains, plateaus, plains and islands. About 43 per cent of the land area is plain, which provides facilities for agriculture and industry. Mountains account for 30 per cent of the total surface area of the country and ensure perennial flow of some rivers, provide facilities for tourism and ecological aspects. About 27 per cent of the area of the country is the plateau region. It possesses rich reserves of minerals, fossil fuels and forests.

(i) Land supports natural vegetation, wildlife and human population so land is ..... resource.
(a) Optimum (b) Potential
(c) Natural (d) Man made

(ii) Careful planning of land resource is needed as ..... .
(a) as India has a variety of resources
(b) land is finite
(c) land is of utmost importance
(d) All of the above

(iii) Which of the following will not be a proper utilisation of land resource?
(a) Developing tourist places in mountains
(b) Constructing canals near perennial rivers
(c) Planting trees near mines
(d) Setting up industries on fertile land

(iv) The plateau region of India can be developed as .....
(a) Industries (b) Extraction of minerals
(c) Tourist zones (d) All of these

05. Read the source and answer the following questions.

Alluvial soil is the most widely spread and important soil. In fact, the entire Northern plains are made of alluvial soil. These have been

deposited by three important Himalayan river systems-the Indus, the Ganga and the Brahmaputra. These soils also extend Rajasthan and Gujarat through a narrow corridor. Alluvial soil is also found in the Eastern coastal plains particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers.

The alluvial soil consists of various proportions of sand, silt and clay. As we move inlands towards the river valleys, soil particles appear some what bigger in size. In the upper reaches of the river valley i.e. near the place of the break of slope, the soils are coarse. Such soils are more common in piedmont plains such as Duars, Chos and Terai. Apart from the size of their grains or components, soils are also described on the basis of their age. According to their age alluvial soils can be classified as old alluvial (Bangar) and new alluvial (Khadar). The Bangar soil has higher concentration of kanker nodules than the Khadar soil. It has more fine particles and is more fertile than the Bangar.

(i) Which of the following is not correct statement about Alluvial Soil?
(a) It is most abundant type of soil in India
(b) Alluvial soil is generally fertile
(c) Lack nitrogen and tend to be phosphoric
(d) It is generally high percentage of clay and retain moisture for long time

(ii) Which of the following soil has the largest area covered in India?
(a) Alluvial soil (b) Black soil
(c) Laterite soil (d) Forest soil

(iii) Alluvial soil is also known as
(a) Regur soil
(b) Khadar soil
(c) Bangar soi
(d) Both (b) and (c)

(iv) The Khadar soils are found in
(a) in flood plains
(b) in the foot hills
(c) over plateau
(d) side area of the valley

ANSWERS

Multiple Choice Questions

1. (a)	2. (d)	3. (c)	4. (a)	5. (a)	6. (a)	7. (b)	8. (d)	9. (c)	10. (a)
11. (a)	12. (a)	13. (a)	14. (a)	15. (d)	16. (b)	17. (b)	18. (b)	19. (d)	20. (c)
21. (a)	22. (c)	23. (d)	24. (c)	25. (c)	26. (c)	27. (a)	28. (c)	29. (c)	30. (c)
31. (d)	32. (a)	33. (b)	34. (a)	35. (b)	36. (a)				

Assertion/Reasoning MCQs

33. (b)	34. (a)	35. (b)	36. (a)

Case Based MCQs

Passage 1

(i) (d) (ii) (a) (iii) (b) (iv) (b)

Passage 2

(i) (b) (ii) (d) (iii) (d) (iv) (b)

Passage 3

(i) (d) (ii) (c) (iii) (b) (iv) (a)

Passage 4

(i) (b) (ii) (b) (iii) (d) (iv) (d)

Passage 5

(i) (d) (ii) (a) (iii) (d) (iv) (a)

EXPLANATIONS

21. Mountain soil is found in the hills and forest areas. It has low humus content as the top soil mostly washes away with running water or wind.

33. The assertion is about soil erosion. The top soil is washed away subsequently which is known as soil erosion. But the reason states that the process of soil formation and erosion goes on simultaneously. This is true but it is not the correct reason for assertion therefore otpion (b) is the answer.

34. The assertion is that the lower horizon of the soil cover is occupied by Kankar. Due to dry climate and high temperature, arid soil lacks moisture and humus. The calcium content penetrates downwards and accumulates in the lower horizon of the soil. There it forms Kankars. The reason given is true and correct for assertion, hence option (a) is the answer.

35. The assertion is that wind erosion takes place when wind blows over flat land surface or hill slopes. The reason given in the questions is about one of the causes of soil erosion which is defective methods of farming. The reason do not describes assertion but it is correct in itself so option (b) is the answer.

36. The assertion is that laterite soil is formed in tropical and sub-tropical climatic region which has wet and dry seasons. Due to high rainfall and hot climatic conditions, there is intense leaching i.e. loss of water soluble nutrients from the soil due to excess rainfall. This gives rise to laterite soil that is not very rich in nutrients. The reason given in the question is true and the correct reason for assertion. Therefore, the answer is (a).