

DAY 16
SUBJECT – GEOGRAPHY

TOPICS:

- Indian Geography– Soil
- Soils in India –Alluvial, Black, Red, Laterite – Its location (availability); Characteristics; Crops grown.
- Example: Laterite soil contains iron oxide which imparts red colour to the soil. Its poor in humus and nitrogen due to heavy leaching. It's found in Western Coastal plain
- Factors which control the formation of soil
- Soil Erosion – Sheet erosion, gully erosion etc.- causes
- Impact of salinization, alkalinity , acidification of soil
- Soil Conservation methods – crop rotation, Contour farming, Terracing, cover crops, conservation tillage and planted windbreaks

PRELIMS MCQ's:

Q.1) Which of the below phenomenon help in soil formation?

1. Parent Material
2. Time
3. Climate
4. Biological activity

Select the correct code:

- a) 1, 2 and 3 only
- b) 2, 3 and 4 only
- c) 1, 3 and 4 only
- d) 1, 2, 3 and 4

Q.1) Solution (d)

Five main interacting factors affect the formation of soil:

1. parent material—minerals forming the basis of soil
2. living organisms—influencing soil formation
3. climate—affecting the rate of weathering and organic decomposition
4. topography—grade of slope affecting drainage, erosion and deposition

5. time—influencing soil properties.

Interactions between these factors produce an infinite variety of soils across the earth's surface.

Q.2) Consider the following about different stages of soil:

1. The soils of the young stage are poorly developed and do not have the characteristic horizons.
2. The soils of the mature stage have a well-developed profile of horizons which remains constant through time.

Which of the statements given above is/are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None

Q.2) Solution (d)

There are 3 relative stages of soil development, young, mature and old.

- The young stage is characterised by the dormant control of the parent material and invading organisms. The soils of the young stage evolve from recently deposited river alluvium and glacial till. They are poorly developed and do not have the characteristic horizons.
- The mature stage reflects a greater influence of climate and these soils are developed over a long period of time. It has a well-developed profile of horizons which remains constant through time.
- The old soils mostly occur in the tropical regions and are one to six million years in age.

Q.3) Which of the statements given below are correct about desert soils?

1. Desert soils are suitable for cultivation along the flood plains and on the terraces where their texture is fine.
2. They are usually poor in organic matter.
3. The phosphate and nitrate content of these soils are very poor.

Choose the appropriate answer:

- a) 1 and 2 only
- b) 1 and 3 only

- c) 2 and 3 only
- d) 1, 2 and 3 only

Q.3) Solution (a)

Chemical properties of Arid – Desert Soils:

- They are usually poor in organic matter.
- Some desert soils are alkaline with varying degree of soluble salts like calcium carbonate. Calcium content increases downwards and the subsoil has ten times more calcium.
- The phosphate content of these soils is as high as in normal alluvial soils.
- Nitrogen is originally low but some of it is available in the form of nitrates.

Phosphates and nitrates make these soil fertile wherever moisture is available. There is a possibility of reclaiming these soils if proper irrigation facilities are available.

In large areas, only the drought resistant and salt tolerant crops such as barley, cotton, millets, maize and pulses are grown.

Q.4) Consider the following statements:

1. The soils are covered with a thick brown mantle which inhibits soil growth.
2. They are coarse and alkaline, rich in soluble salts.
3. They are poor in organic matter and have a varying percentage of lime.
4. These soils are derived from the adjoining rocks and the coastal regions.

Which of the soil possess the above characteristics?

- a) Laterite soil
- b) Peaty soil
- c) Desert soil
- d) Loamy soils

Q.4) Solution (c)

Desert soils possess all the characteristics provided in the statements. Hence (c) is correct answer.

Desert soils are grey in colour in temperate region and red in hot deserts of the tropics. The soils are unleached and alkaline but very much lacking in humus because of little vegetation found.

Q.5) Which among the following are statements is/are true?

1. Pedocals are soils that are found in humid climates extending from high-latitude coniferous forests, mid latitude deciduous forest lands to low-climate tropical forests and grasslands
2. Pedalfers are soils that are found in arid, semi-arid and the sub-humid zones in the world
3. Pedocals are very rich in calcium and mineral salts

Choose the appropriate code:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 3 only
- d) 1, 2 and 3

Q.5) Solution (c)

Pedalfers are soils that are found in humid climates extending from high-latitude coniferous forests, mid latitude deciduous forest lands to low-climate tropical forests and grasslands

Pedocals are soils that are found in arid, semi-arid and the sub-humid zones in the world

Pedocals are very rich in calcium and mineral salts

Q.6) Which of the statements given below are true about Chernozems?

1. These soils are called black earths.
2. They are rich in humus, rich in calcium, unleached and have a crumbly or nut-like structure.
3. These are fertile soils requiring little fertilizing even when used year after year.

Choose the appropriate code:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 3 only
- d) 1, 2 and 3

Q.6) Solution (d)

Chernozems:

- These soils are called black earths

- They are rich in humus, rich in calcium, unleached and have a crumbly or nut-like structure
- These are fertile soils requiring little fertilizing even when used year after year.
- The Steppes of Ukraine, the central part of USA, central Africa, South America and Australia have these type of soils

Q.7) Consider the following:

1. Subsistence agriculture is one where the farming areas consume all or nearly so of the products locally grown.
2. Intensive Subsistence agriculture is dominated by wet paddy cultivation involves limited use of machinery and low labour productivity and farm yard manure used for fertility retention.
3. Mixed farming – found in highly developed parts of the world and farms are moderate in size.

Select the correct answer from the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.7) Solution (d)

All the statements are correct. Self-explanatory.

Q.8) Consider the following statements:

1. Cropping intensity refers to raising of a number of crops during one agriculture year by expanding the net area under cultivation.
2. Crop combination refers to the quantum or diversity of crops entering a region in a given period.

Which of the above statement(s) is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None

Q.8) Solution (a)

Cropping intensity refers to the raising of a number of crops from the same field during one agriculture year. This also implies higher productivity per unit of arable land during one agricultural year.

Q.9) Match List I with List II and select the correct answer using the code given below the Lists:

List I (<i>Weathering type</i>)	List II (<i>Landform/Process</i>)
A. Chemical weathering	1. Till
B. Mechanical weathering	2. Oxidation
C. Glacial deposits	3. Plant roots
D. Deposition by ground water	4. Stalactite

Code:

A-B-C-D

- a) 4-3-2-1
- b) 2-3-1-4
- c) 1-3-2-4
- d) 2-1-3-4

Q.9) Solution (b)

Self-explanatory.

Q.10) Which of the statements given below are true about Black soil?

- 1. Black Soils are highly argillaceous.
- 2. Black soil is highly retentive of moisture.
- 3. It is a soil group typical to the dry and hot regions of the Peninsula.
- 4. These soils are best suited for cotton crop, tobacco, castor, sunflower and millets.

Choose the appropriate answer:

- a) 1 and 2 only
- b) 1, 2 and 3 only
- c) 2, 3 and 4 only
- d) 1, 2, 3 and 4

Q.10) Solution (d)

Black soils:

- The parent material for most of the black soil are the volcanic rocks that were formed in the Deccan Plateau (Deccan and the Rajmahal trap).
- In Tamil Nadu, gneisses and schists form the parent material. The former are sufficiently deep while the later are generally shallow.
- These are the region of high temperature and low rainfall. It is, therefore, a soil group typical to the dry and hot regions of the Peninsula.
- A typical black soil is highly argillaceous (consisting of or containing clay)
- The black soil is highly retentive of moisture. It swells greatly on accumulating moisture. Strenuous effort is required to work on such soil in rainy season as it gets very sticky.

Q.11) Match List I with List II and select the correct answer using the code given below the Lists:

List I (Farming area)	List II (State)
A. Doab	1. Assam
B. Char	2. Karnataka
C. Maidan	3. Punjab
D. Terai	4. Uttar Pradesh

Code:

A-B-C-D

- a) 4-3-2-1
- b) 2-3-1-4
- c) 3-1-2-4
- d) 2-1-3-4

Q.11) Solution (c)

Self-explanatory.

Q.12) We know that all rocks whether igneous or sedimentary may become metamorphic or changed rocks under great heat and pressure. Consider the below lists and match List I with List II based upon the alteration they undergo:

List I List II

- | | |
|--------------|--------------|
| A. Clay | 1. Slate |
| B. Sandstone | 2. Schist |
| C. Limestone | 3. Marble |
| D. Granite | 4. Gneiss |
| E. Shale | 5. Quartzite |

Code:

A-B-C-D-E

- a) 1-5-3-4-2
- b) 1-2-5-3-4
- c) 2-1-5-3-4
- d) 2-1-5-4-3

Q.12) Solution (a)

Self-explanatory.

Q.13) Consider the following statement about soil forming processes:

1. Cheluviation is the downward movement of material, under the influence of organic complex compounds.
2. Illuviation is the accumulation of the washed down material in the lower horizons.
3. Leaching is the removal and downward movement of material from a horizon in solution.

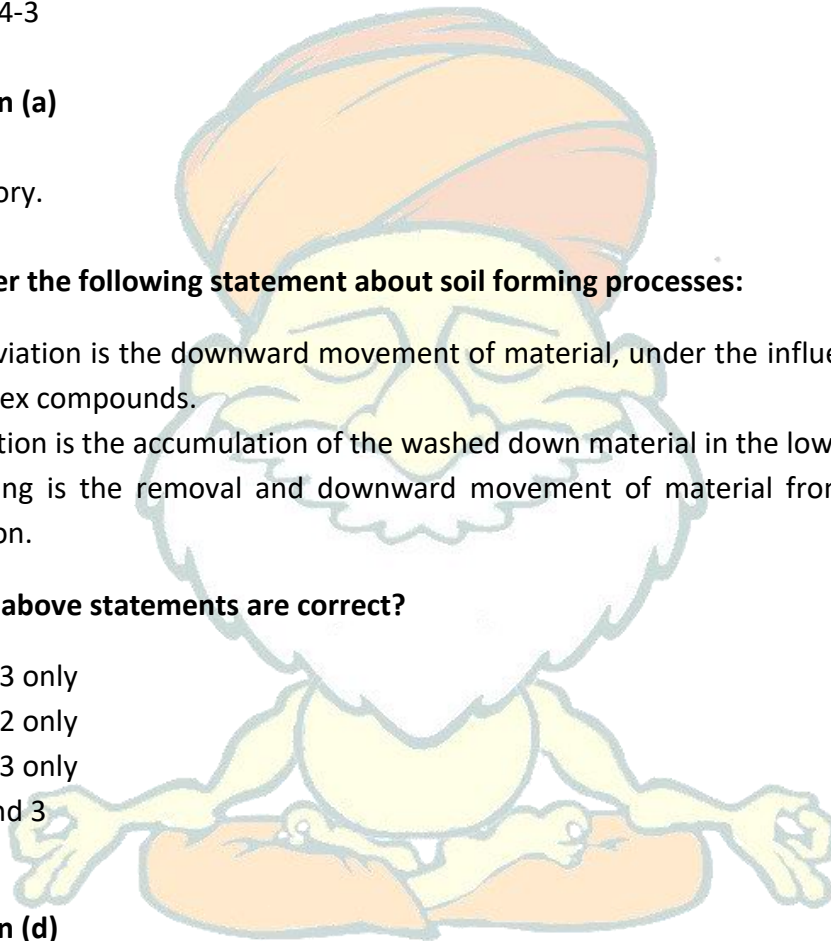
Which of the above statements are correct?

- a) 2 and 3 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

Q.13) Solution (d)

Soil formation is a result of various processes that tend to affect the soil profile (parallel layers of soil each with distinct physical characteristics). Following are the processes that result in soil formation:

1. Eluviation: It is the mechanical translocation of clay or other fine particles from upper layers to lower layers due to downward precipitation. The particles could also translocate in dissolved form.



2. Illuviation: It is the accumulation of the washed off material i.e. eluviated material in the lower layers of the soil profile. Water percolating the soil leaches out soluble salts and mineral particles, thereby adding them to the lower portions.

3. Leaching: It is the loss of water soluble material like calcium due to percolation of water down the soil profile.

4. Cheluviation: It is a combination of weathering of minerals by organic acids and translocation of organic matter through the layers of soil profile. It is similar to leaching but under the influence of organic complex compounds.

Q.14) Choose the incorrect pair from the below:

- | (Zone) | (Soil) |
|-----------------------------|--------------------------------|
| a) Boreal | :: Tundra (dark brown) soils |
| b) Subtropical and tropical | :: Laterite or red soil |
| c) Steppe | :: Light grey podzolized soils |
| d) Desert-steppe | :: Chestnut and brown soils |

Q.14) Solution (c)

Zone	Soil
Boreal	Tundra (dark brown) soils
Taiga	Light grey podzolised soils
Forest-steppe	Grey and dark grey soils
Steppe	Chernozem
Desert-steppe	Chestnut and brown soils
Aerial or desert zone	Aerial soils, yellow soils, white soils



Q.15) Consider the below statements:

1. Peaty – Marshy Soils are soils with large amount of organic matter and considerable amount of soluble salts.
2. The most humid regions have this type of soil.
3. Since they are not acidic, this type of soil is good for paddy cultivation.

Which of the statements given above are correct?

- a) 1 and 2 only
- b) 1 and 3 only
- c) 2 and 3 only
- d) 1, 2 and 3 only

Q.15) Solution (a)

Peaty – Marshy Soils are soils with large amount of organic matter and considerable amount of soluble salts. The most humid regions have this type of soil. They are black, heavy and highly acidic. Hence statement (3) is incorrect. They are deficient in potash and phosphate.

Most of the peaty soils are under water during the rainy season but as soon the rains cease, they are put under paddy cultivation.

Q.16) Consider the following statements about Hangul

1. It will be listed as 'critically endangered' under IUCN Red List
2. It is the state animal of Himachal Pradesh and Jammu & Kashmir
3. It is listed under Schedule-I of the Indian Wildlife (Protection) Act, 1972 and J&K Wildlife (Protection) Act, 1978

Select the correct statements

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.16) Solution (c)

Kashmiri Red Stag or Hangul is known for its giant antlers bearing 11 to 16 points.

Only one viable population left today in the wild is largely confined to the Greater Dachigam Landscape (1,000 sq.km.), encompassing the Dachigam National Park (NP) and adjoining protected areas.

It is one of three critically endangered species in Jammu and Kashmir. The other two are markhor, the Tibetan antelope or 'chiru'. It was designated as State Animal of Jammu & Kashmir in 1980's.

It is listed under Schedule-I of the Indian Wildlife (Protection) Act, 1972 and J&K Wildlife (Protection) Act, 1978 and has also been listed among the top 15 species of high conservation priority by the Government of India.

IUCN (International Union for Conservation of Nature) *will declare Kashmiri Red Stag or Hangul as a 'critically endangered' species.*

Earlier it was considered as a subspecies of red deer. Hence, IUCN categorized it as 'Least Concern' by clubbing with European and other 'red deer' species of the world.

It is the state animal of J&K only.

Source: <http://indiatoday.intoday.in/story/kashmir-red-stag-iucn-critically-endangered/1/787937.html>

Q.17) Consider the following statements about 'Neerdhur'

1. It is developed by National Environmental and Engineering Research Institute (Neeri)
2. It is a multi-fuel domestic cooking stove
3. It has been approved and certified by Ministry of New and Renewable Energy (MNRE)

Select the correct statements

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.17) Solution (d)

Recently National Environmental and Engineering Research Institute (Neeri) and CSIR has developed 'Neerdhur', a novel multi-fuel domestic cooking stove.

Apart from wood, other fuel like coal, cow dung and agricultural residue can also be used in it.

Saves 50% fuel and has high thermal efficiency. ☑ Wood usage is halved and helps save the pressure on environment

Neerdhur has been approved and certified by Ministry of New and Renewable Energy (MNRE) and meets the emission parameters of Bureau of Indian Standards (BIS).

Will help in improvement of women's health in rural areas.

Source: <http://timesofindia.indiatimes.com/city/nagpur/Neeris-stove-reduces-smoke-promises-better-rural-health/articleshow/54665243.cms>

Q.18) Consider the following statements about Green train corridors (GTC)

1. They are sections of the railways which will be free of human waste on the tracks

2. Okha-Kanalus stretch of Western Railway is India's first GTC

Which of the following statements is/are true?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.18) Solution (a)

The 114-km-long Manamadurai– Rameswaram stretch of Southern Railway is India's first 'Green corridor'.

The 141-km-long Okha-Kanalus route and the 34-km-long Porbandar-Wansjaliya sections in Gujarat have now become the green train corridors as part of the Swachh Bharat Mission

Source:

<http://economictimes.indiatimes.com/industry/transportation/railways/railways-add-175-km-long-track-to-green-train-corridors/articleshow/54921234.cms>

Q.19) Global Conference on Voter Education titled "Voter Education for Inclusive, Informed and Ethical Participation" is being organized by

- a) Election Commission of India and Amnesty International
- b) Election Commission of India and International Foundation for Electoral Systems
- c) Election Commission of India and United Nations Development Programme
- d) Election Commission of India and The Association of World Election Bodies

Q.19) Solution (c)

Source: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=151732>

Q.20) Consider the following statements about Biotech-KISAN

- 1. It is a Farmer centric scheme launched by the Ministry of Agriculture & Farmers Welfare
- 2. The scheme includes the Mahila Biotech- KISAN fellowships, for training and education in farm practices, for women farmers

Which of the following statements is/are correct?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.20) Solution (b)**Biotech- KISAN (Krishi Innovation Science Application Network) Empowering Small- and Women- Farmers with Science Implementation**

Biotech-KISAN is a new programme that empowers farmers, especially women farmers. Cash crops and horticulture can be a major source of income but the vagaries of climate, disease and market often prevent this. Farmers are eager to use scientific tools that can mitigate these factors. The Department of Biotechnology is partnering to stimulate these exciting directions.

The Scheme is for farmers, developed by and with farmers, it empowers women, impacts locally, connects globally, is Pan-India, has a hub-and spoke model and stimulates entrepreneurship and innovation in farmers.

Biotech-KISAN is:

- **For Farmers:** The Biotech-KISAN is a Farmer centric scheme launched by of the Department of Biotechnology, where scientists will work in sync with farmers to understand problems and find solutions.
- **By Farmers:** Developed in consultation with the farmers. Soil, Water, Seed and Market are some key points that concern small and marginal farmers. Biotech-KISAN aims to link farmers, scientists and science institutions across the country in a network that identifies and helps solve their problems in a cooperative manner.
- **Empower women.** The woman farmer is often neglected. It is important to empower the women farmer, help her meet her concerns for better seed, storage of seed and protection of the crops from disease and pest. The women farmer is also the prime caretaker of livestock and she is eager to combine traditional wisdom in handling the livestock and with current best practices, especially in the context of emerging livestock disease. The scheme includes the Mahila Biotech- KISAN fellowships, for training and education in farm practices, for women farmers. The Scheme also aims to support the women farmers/ entrepreneur in their small enterprises, making her a grass root innovator.
- **Connects Globally.** Biotech-KISAN will connect farmers to best global practices; training workshops will be held in India and other countries. Farmers and Scientists will partner across the globe.

- **Impacts Locally.** The scheme is targeted towards the least educated marginalised farmer; Scientists will spend time on farms and link communication tools to soil, water seed and market. The aim is to understand individual problems of the smallholding farmers and provide ready solutions.
- **Across India.** Biotech KISAN will connect farmers with science in the 15 agro-climatic zones of the country in a manner, which constantly links problems with available solutions.
- **Hubs and Spoke.** In each of these 15 regions, a Farmer organisation will be the hub connected to different science labs, Krishi Vigyan Kendra and State Agriculture Universities co-located in the region. The hub will reach out to the farmers in the region and connect them to scientists and institutions.
- **Farmers as Innovators.** The hub will have tinkering lab, communication cell and will run year-long training, awareness, workshops and which will act as education demonstration units to encourage grass root innovation in the young as well as women farmers.
- **Communicating Best Practises** There will be a communication set-up to make radio and TV programmes for local stations, as well as daily connectivity through social media.

Source: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=151986>

Q.21) Consider the following statements with respect to 'Snow Leopards'

1. It categorised as an endangered species in the International Union of Conservation of Nature (IUCN) Red list
2. India is a signatory to Bishkek Declaration - global agreement signed for the protection of the snow leopard

Which of the following statements is/are correct?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.21) Solution (c)

The Bishkek Declaration was an agreement signed by 12 countries that are home to this species namely Afghanistan, Bhutan, China, India, Kazakhstan, the Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan and Uzbekistan. The declaration was initiated in order to formulate a long-term Global Snow Leopard Conservation Programme by the

formation of a high-level steering committee to guide programme implementation and regularly review its progress.

One of the most elusive mountain cats, the snow leopard (*Panthera uncial*) is categorised as an endangered species in the International Union of Conservation of Nature (IUCN) Red list.

Source: <http://www.thehindu.com/news/national/other-states/Darjeeling-zoo-to-receive-snow-leopard-from-London/article14397699.ece>

Q.22) The “Sanjha Abhiyan” of the Rajasthan Government is concerned with

- a) Complete elimination of child marriages
- b) Open jails
- c) 24/7 electrified villages
- d) None of the above

Q.22) Solution (a)

In a bid to make Rajasthan child marriage-free, the state government, the United Nations Population Fund (UNFPA) and United Nations Children’s Fund (UNICEF), launched a district-level campaign in Dausa under the “Sanjha Abhiyan” banner of the Rajasthan Government.

Source: <http://indianexpress.com/article/india/india-news-india/rajasthan-government-launches-campaign-against-child-marriage-in-dausa-3103004/>

