

DAY 15
SUBJECT – GEOGRAPHY

TOPICS:

- Indian Geography– Minerals, Climate
- Minerals – Major areas where they are found, Characteristics of the minerals, Its Uses and Environmental impact.
- Climate – Factors determining the Climate of India, Indian Monsoon, It's nature/characteristics, significance and impact, Upper Air circulation- Jet streams, Westerlies, Cyclones – tropical and temperate.

PRELIMS MCQ's:

Q.1) Which among the following includes the elements that influence the making of climates?

1. Temperature
2. Precipitation
3. Humidity
4. Air pressure
5. Winds

Choose the appropriate answer from the code given below:

- a) 1, 2 and 3 only
- b) 1, 2, 3 and 4 only
- c) 1, 2, 3 and 5 only
- d) 1, 2, 3, 4 and 5

Q.1) Solution (d)

All the five – Temperature, Precipitation, Humidity, Air pressure and Winds – are elements that influence the making of climates.

These climatic elements individually and in combination with each other vary from place to place and from season to season. These variations ultimately produce climatic variations.

Q.2) Consider the below statements with regard 'dew':

1. The ideal conditions for formation of dew are clear sky, calm air, high relative humidity, and cold and long nights.
2. For the formation of dew, it is necessary that the dew point is below the freezing point.

Which of the statements given above is/are correct?

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

Q.2) Solution (a)

Dew is the moisture that forms as a result of condensation. Condensation is the process a material undergoes as it changes from a gas to a liquid. Dew is the result of water changing from a vapor to a liquid.

Dew forms as temperatures drop and objects cool down. If the object becomes cool enough, the air around the object will also cool. Colder air is less able to hold water vapor than warm air. This forces water vapor in the air around cooling objects to condense. When condensation happens, small water droplets form—dew.

The temperature at which dew forms is called the dew point. The dew point varies widely, depending on location, weather, and time of day.

The ideal conditions for its formation are clear sky, calm air, high relative humidity, and cold and long nights. However, for the formation of dew, it is necessary that the dew point is above the freezing point (not below). Hence, statement (2) is wrong.

Q.3) Consider the below statements:

1. Barysphere is associated with lower layer of the earth's mantle (below Asthenosphere).
2. Asthenosphere is associated with the upper layer of the earth's mantle (below the lithosphere).

Which of the statements given above is/are correct?

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

Q.3) Solution (b)

Barysphere is associated with inner layer of the earth's core (below outer core). Hence, statement (1) is wrong.

Interior of the Earth

Name of the layer	Structure and composition	Physical property	Average Thickness	Density of rocks
A. Crust	Outer and thinnest layer of the earth. It is composed mainly of Silica and Aluminium (SI+AL = SIAL)	Solid	5-40 Km	Light
B. Mantle				
i. Upper	Lithosphere	Solid	2895 Km	Moderately light
ii. Lower	Asthenosphere Upper and lower mantle are composed mainly of Silica and Magnesium (SI + MA = SIMA)	Plastic-Semimolten		Moderately heavy
C. Core				
i. Outer	Composed mainly of Nickel and Ferrous (Ni + Fe = Nife)	Liquid or in Plastic State	2220 Km	Heavy
ii. Inner	Barysphere	Solid	1255 Km	Very heavy

Q.4) Which of the statements given below is/are correct in regard to Manganese?

1. It is found abundantly as a free element in nature.
2. The most important manganese ore is pyrolusite.
3. Manganese is primarily used in iron and steel industry.
4. Manganese is also used in the manufacturing of bleaching powder, insecticides, paints, and batteries.

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.4) Solution (c)

Manganese is not found as a free element in nature. It is often found in combination with iron.

It is primarily used in iron and steel industry. It is the basic raw material for manufacturing steel alloys.

6 kilograms of manganese is required for manufacturing one tonne of steel.

Manganese is also used in the manufacturing of bleaching powder, insecticides, paints, and batteries.

India processes second largest reserves in the world after Zimbabwe. India is the world's fifth largest producer of manganese ore after China, Gabon, South Africa and Australia.

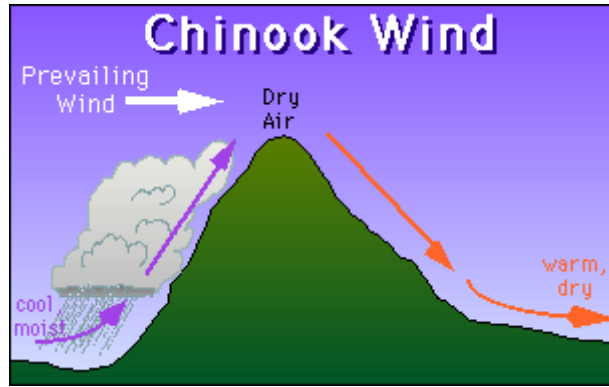
Maharashtra, Madhya Pradesh, Odisha, Andhra Pradesh and Karnataka are the major manganese producing states.

Maharashtra and Madhya Pradesh together produce more than half of India's manganese.

Q.5) Which among the statements given below is not correct about Chinook/Fohn winds?

- a) They are strong, dry and warm winds
- b) These winds are formed when ascending air becomes compressed with increased pressure
- c) These winds develops on the leeward side of the mountains
- d) The winds helps animal grazing by melting snow and fastens the ripening of grapes

Q.5) Solution (b)



Chinook/Fohn winds are strong, dry and warm winds which develops on the leeward side of the mountains. These winds are formed when descending air (not ascending) becomes compressed with increased pressure. Hence, statement (b) is wrong.

These winds are experienced in the valleys of the northern Alps, particularly in Switzerland in spring. The winds helps animal grazing by melting snow and fastens the ripening of grapes.

It is beneficial to ranchers east of the Rockies (Canada) as it keeps the grasslands clear of snow during much of the winter.

Q.6) Match List I with List II and select the correct answer using the code given below the Lists:

- | List I | List II |
|-------------------|--------------------------------------|
| A. Stratus/strato | 1. Medium level |
| B. Cumulus/cumulo | 2. High up/wispy |
| C. Cirrus/cirro | 3. heaped up/puffy, like cauliflower |
| D. Alto | 4. flat/layered and smooth |

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

Q.6) Solution (c)

Self-explanatory.

Q.7) Select the appropriate climatic zone/type having the below given characteristics:

1. Precipitation level: 35-75cm
2. Warm, dry summer and cool, wet winter
3. Shifting of wind belts

Choose the appropriate answer:

- a) Laurentian type
- b) Mediterranean climate
- c) Steppe/Temperate grasslands
- d) Coniferous forest Siberian climate

Q.7) Solution (b)

Mediterranean climate

- Entirely confined to the western portion of continental masses, between 30° and 45° north and south of the equator.
- The basic cause of this type of climate is the shifting of the wind belts.
- Mediterranean Sea has the greatest extent of this type of 'winter rain climate', and gives rise to the name Mediterranean Climate.
- The best developed form of this climatic type is found in central Chile.
- Clear skies and high temperatures; hot, dry summers and cool, wet winters.
- Mean annual precipitation ranges from 35 - 90 cm.
- Temperature of warmest month greater than or equal to 10° C.
- Temperature of coldest month is less than 18° C but greater than -3° C
- Climate is not extreme because of cooling from water bodies.

Q.8) Variations in the length of daytime and night time from season to season are due to –

- a) the earth's rotation on its axis
- b) the earth's revolution round the sun in an elliptical manner
- c) latitudinal position of the place
- d) revolution of the earth on a tilted axis

Q.8) Solution (d)

Earth's rotation on its axis → Variation in seasons

Revolution of the earth on a tilted axis → Variation in Day time and Night time

Q.9) Which among the following is not a warm wind?

- a) Foehn
- b) Loo
- c) Mistral
- d) Sirocco

Q.9) Solution (c)

Warm Winds include: Foehn or Fohn, Chinook, Zonda, Loo and Sirocco

Cold Winds include: Pampero, Bora, Mistral, Gregale and Tramontane

Q.10) Consider the following statements and choose the *incorrect* statement?

- a) Coriolis force is zero at the poles.
- b) There are no cyclones at equator because of zero Coriolis Force.
- c) Fast-moving objects such as airplanes and rockets are influenced by the Coriolis effect.
- d) Coriolis force at 5° latitude is significant enough to create a storm [cyclonic vortex].

Q.10) Solution (a)

Winds blow across the Earth from high-pressure systems to low-pressure systems. However, winds don't travel in a straight line. The actual paths of winds—and of ocean currents, which are pushed by wind—are partly a result of the Coriolis effect.

Coriolis force is an apparent force that as a result of the earth's rotation deflects moving objects (as projectiles or air currents) to the right in the northern hemisphere and to the left in the southern hemisphere.

The Coriolis force is zero at the equator (no cyclones at equator because of zero Coriolis Force) but it increases with latitude. Hence, statement (1) is incorrect.

Coriolis force at 5° latitude is significant enough to create a storm [cyclonic vortex]. About 65 per cent of cyclonic activity occurs between 10° and 20° latitude.

Q.11) Consider the following about cyclones:

1. The cyclonic wind movements are anticlockwise in the northern hemisphere and clockwise in the southern hemisphere.

2. Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas.
3. Tropical cyclones are irregular wind movements involving closed circulation of air around a low pressure center.

Which of the statements given above is/are correct?

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

Q.11) Solution (d)

Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas bringing about large scale destruction due to violent winds, very heavy rainfall (torrential rainfall) and storm surge.

They are irregular wind movements involving closed circulation of air around a low pressure center. This closed air circulation (whirling motion) is a result of rapid upward movement of hot air which is subjected to Coriolis force. The low pressure at the center is responsible for the wind speeds.

The cyclonic wind movements are anticlockwise in the northern hemisphere and clockwise in the southern hemisphere (This is due to Coriolis force).

Q.12) Consider the following statements:

1. It is governed by topography.
2. Large changes in mean temperature occur over short distances.
3. Precipitation types and intensity also vary spatially.

The above characteristics are related with which of the following climate type?

Select the correct code:

- a) Polar Climates
- b) Cold Snow Forest Climates
- c) Highland Climates
- d) Tundra Climate

Q.12) Solution (c)

Highland climates are governed by topography. In high mountains, large changes in mean temperature occur over short distances. Precipitation types and intensity also vary spatially across high lands. There is vertical zonation of layering of climatic types with elevation in the mountain environment.

Q.13) Arrange the following Iron ores based upon their quality or pure iron content:

1. Limonite
2. Siderite
3. Magnetite
4. Haematite

Choose the appropriate code:

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

Q.13) Solution (b)

Magnetite: This is the best quality of iron ore and contains 72 per cent pure iron. It possesses magnetic property and hence is called magnetite. It is found in Andhra Pradesh, Jharkhand, Goa, Karnataka etc

Haematite: It contains 60 per cent to 70 per cent pure iron and is found in Andhra Pradesh, Jharkhand, Orissa, Chhattisgarh, Goa etc

Limonite: It contains 40 per cent to 60 per cent pure iron. It is of yellow or light brown colour

Siderite: It contains many impurities and has just 40-50 per cent pure iron. However, due to presence of lime, it is self fluxing

Q.14) Consider the following:

1. Mesas and Buttas are associated with arid areas.
2. Peneplains are associated with humid conditions.
3. Dissected plateaux are associated with humid areas.

Which of the statements given above is/are correct?

- a) 1 only

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

Q.14) Solution (d)

Mesas and Buttas are associated with arid areas, whereas Dissected plateaux are associated with humid areas.

Peneplains are associated with humid conditions, whereas Pediplains are associated with arid and semi-arid conditions.

Q.15) Which of the statements given below is/are correct in regard to Aluminium?

1. Aluminium production starts with the raw material bauxite, a clay like soil type found in a belt around the equator
2. Alumina is separated from the bauxite by using a hot solution of caustic soda and lime
3. Three different raw materials are needed to make aluminium, aluminium oxide, electricity and carbon
4. Aluminium is known for its ductile nature and can be recycled over and over again with 100 percent efficiency

Select the correct code

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

Q.15) Solution (d)

All the given statements are correct and self-explanatory.

Q.16) Recently, India's satellite GSAT-18 was successfully launched. With reference to GSAT-18, consider the following statements

1. It is a communication-based satellite
2. It is India's heaviest satellite
3. It was launched by India's heavy duty launch vehicle GSLV
4. It was built by ISRO

Choose the appropriate code

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

Q.16) Solution (a)

Launched by: European launcher Ariane-5 (space vehicle)

Weighing 3,404 kg at lift-off, GSAT-18 carries 48 communication transponders to provide services in Normal C-band, Upper Extended C-band and Ku-bands of the frequency spectrum. Television, telecommunication, VSAT and digital satellite news gathering were a few of the services that GSAT 18 will support.

GSAT-10 - 3400 kg (Mass at Lift – off)

GSAT-18 - 3404 kg (Mass at Lift – off)

Source: <http://www.thehindu.com/sci-tech/science/communication-satellite-gsat18-successfully-launched/article9190037.ece>

Q.17) Consider the following statements about Polymerase chain reaction (PCR)

1. It is a technique used in molecular biology to amplify a single copy or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence
2. It is a recombinant DNA method
3. It is used for Chick Sexing

Which of the following statements is/are correct?

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

Q.17) Solution (c)

PCR is a technique used in molecular biology to amplify a single copy or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.

PCR is not generally considered to be a recombinant DNA method, as it does not involve cutting and pasting DNA, only amplification of existing sequences.

Source: <http://www.thehindu.com/news/cities/chennai/gender-identification-with-feathers-of-birds-by-madras-vet-college/article9202355.ece>

Q.18) Consider the following statements about MPLADS Scheme

1. It is a centrally-sponsored plan scheme fully funded by the government of India
2. The Ministry of Statistics and Programme Implementation has been responsible for the policy formulation, release of funds and prescribing monitoring mechanism for implementation of the Scheme
3. Funds from MPLADS Scheme can be converged with MGNREGA with the objective of creating more durable assets

Which of the following statements is/are correct?

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

Q.18) Solution (d)

The MPLADS is a Plan Scheme fully funded by Government of India. The annual MPLADS fund entitlement per MP constituency is Rs. 5 crore. 2.2 Lok Sabha Members can recommend works within their Constituencies and Elected Members of Rajya Sabha can recommend works within the State of Election except as provided in paras 2.8 and 2.9. Nominated Members of both the Rajya Sabha and Lok Sabha can recommend works anywhere in the country.

The Ministry of Statistics and Programme Implementation has been responsible for the policy formulation, release of funds and prescribing monitoring mechanism for implementation of the Scheme. A Department in each State/UT is designated as the Nodal Department with the overall responsibility of supervision, monitoring and coordination of the MPLADS implementation with the districts and other Line Departments. The Government of India informs the State Nodal Department about the MPLADS funds released

to the District Authorities. The District Authorities report the status of MPLADS implementation to the Government of India and State Nodal Department.

MPLAD Scheme can be converged in individual/stand-alone projects of other Central and State Government schemes provided such works of Central/State Governments Schemes are eligible under MPLADS. Funds from local bodies can similarly also be pooled with MPLADS works. Wherever such pooling is done, funds from other scheme sources should be used first and the MPLADS funds should be released later, so that MPLADS fund results in completion of the project.

Special provision for convergence of Members of Parliament Local Area Development (MPLADS) with MGNREGA: Funds from Member of Parliament Local Area Development Scheme (MPLADS) can be converged with MGNREGA with the objective of creating more durable assets.

Special provision for convergence of Members of Parliament Local Area Development (MPLADS) with Khelo India: National Programme for Development of Sports: Funds from Member of Parliament Local Area Development Scheme (MPLADS) can be converged with Khelo India: National Programme for Development of Sports with the objective of creating more durable assets.

The district authority is empowered to examine the eligibility of works sanction funds and select the implementing agencies, prioritize works, supervise overall execution, and monitor the scheme at the ground level. The district authorities get the works executed through the line departments, local self-governments or other government agencies. In some cases, the district authorities get the works executed through reputed non-government organizations.

Read More -

http://www.mplads.gov.in/MPLADS/UploadedFiles/MPLADSGuidelines2016English_638.pdf

Source: <http://www.thehindu.com/opinion/editorial/Of-politics-and-administration/article16070413.ece>

Q.19) Living Planet Index is released by

- a) World Wildlife Fund (WWF)
- b) United Nations Environment Programme (UNEP)
- c) Intergovernmental Panel on Climate Change (IPCC)
- d) IUCN

Q.19) Solution (a)

Living Planet Index -

http://wwf.panda.org/about_our_earth/all_publications/living_planet_index2/

Source: <http://www.thehindu.com/todays-paper/tp-international/twothirds-of-wild-animals-may-go-extinct-by-2020-warns-report/article9278553.ece>

Q.20) The folk art of Alpana is from which of the following states?

- a) Rajasthan
- b) Maharashtra
- c) West Bengal
- d) Assam

Q.20) Solution (c)

Source: <http://www.thehindu.com/news/national/other-states/reviving-a-vanishing-folk-art-form-in-bengal/article9277490.ece>

Q.21) Food Fortification is

- a) Addition of beneficial substance to food
- b) Addition of harmful substances to food
- c) Extraction of beneficial substances from food
- d) Extraction of harmful substances from food

Q.21) Solution (a)

Food fortification or enrichment is the process of adding micronutrients (essential trace elements and vitamins) to food. It may be a purely commercial choice to provide extra nutrients in a food, while other times it is a public health policy which aims to reduce the number of people with dietary deficiencies within a population.

As defined by the World Health Organization (WHO) and the Food and Agricultural Organization of the United Nations (FAO), fortification refers to "the practice of deliberately increasing the content of an essential micronutrient, ie. vitamins and minerals (including trace elements) in a food irrespective of whether the nutrients were originally in the food before processing or not, so as to improve the nutritional quality of the food supply and to provide a public health benefit with minimal risk to health," whereas enrichment is defined

as "synonymous with fortification and refers to the addition of micronutrients to a food which are lost during processing."

Source: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=151709>

Q.22) Indian Roller Bird is the state bird of which of the following states?

1. Andhra Pradesh
2. Odisha
3. Telangana
4. Karnataka

Select the correct code:

- a) 1 and 3
- b) 1, 3 and 4
- c) Only 2
- d) All of the above

Q.22) Solution (d)

The Indian Roller (*Coracias benghalensis*) is protected under Schedule IV of the Wildlife Protection Act, 1972.

This Indian Roller or Neelkanth is a state bird of various states like Karnataka, Telangana, Andhra Pradesh and Orissa. It is displayed during Dussehera festival in Telangana.

Source: <http://www.thehindu.com/todays-paper/tp-national/poachers-go-all-out-to-net-indian-roller/article7646653.ece>

