Q.1) Consider the following statements:

1. Growth in agriculture sector in the last decade has been consistent.
2. Volume of food grain production has surpassed horticulture production recently.

Which of the above statements is/are correct?

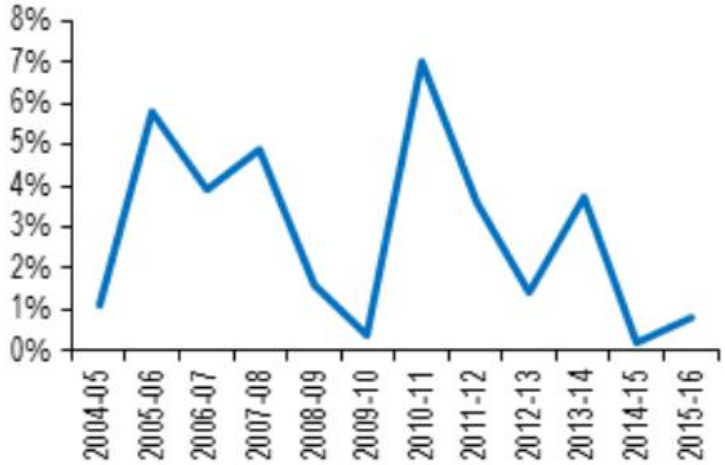
a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.1) Solution (d)

Basic Information:

- Agriculture plays a vital role in India's economy.
- **54.6%** of the total workforce is engaged in **agricultural and allied sector activites** (Census 2011) and accounts for **17.1%** of the country's Gross Value Added (GVA) for the year 2017-18 (at current prices).
- As per the Land Use Statistics 2014- 15, the total geographical area of the country is **328.7 million hectares**, of which 140.1 million hectares is the reported net sown area and 198.4 million hectares is the gross cropped area with a **cropping intensity** of **142%.**
- The net area sown works out to be 43% of the total geographical area.
- The net irrigated area is 68.4 million hectares.

Growth in Agriculture sector:



Statement Analysis:

Statement 1	Statement 2
Incorrect	**Incorrect**
Agricultural growth has been **fairly volatile** over the past decade, ranging from 5.8% in 2005-06 to 0.4% in 2009-10 and -0.2% in 2014-15.	**Horticulture** production was **310.74 million** tonne (2018-19). **Food grain** production stood at **285.17** million tonne (2018-19).

Q.2) With reference to "Dryland Agriculture", consider the following statements:

1. The cultivation of crops is done entirely under natural rainfall without irrigation.
2. Dryland areas have almost no contribution to wheat and rice production.
3. Major dry farming crops are millets.

Which of the above statements is/are correct?

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

Q.2) Solution (c)

Basic Information:

Dryland Agriculture refers to growing of crops **entirely** under rainfed conditions.

Based on the amount of rainfall received, dryland agriculture can be grouped into three categories:

1. **Dry Farming**: Cultivation of crops in areas where rainfall is less than 750 mm per annum
2. **Dryland Farming**: Cultivation of crops in areas receiving rainfall above 750 mm
3. **Rainfed Farming**: Cultivation of crops in regions receiving more than 1,150 mm.

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	**Incorrect**	**Correct**
Dryland Agriculture refers to cultivation of crops entirely under natural rainfall without irrigation.	Dryland areas also contribute significantly to wheat and rice production. **33% of wheat and 66% of rice are still rainfed.**	Major dry farming crops are millets such as jwar, bajra, ragi, oilseeds like mustard, rapeseed, and pulse crops like pigeon pea , gram and lentil.

Q.3) Consider the following statements:

1. Kerela is the largest producer of large cardamom.
2. Spices Board of India is a statutory body under Ministry of Agriculture and Farmers' Welfare.

Which of the above statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.3) Solution (d)

Basic Information:

- India produces a wide range of spices and holds a prominent position in world spice production.
- Because of the varying climates - from tropical to sub-tropical to temperate-almost all spices grow splendidly in India.
- In reality almost all the states and union territories of India grow one or the other spices.
- Under the act of Parliament, a total of **52 spices** are brought under the purview of Spices Board, however 109 spices are notified in the ISO list.

Statement Analysis:

Statement 1	Statement 2
Incorrect	**Incorrect**
Sikkim is the largest producer of large cardamom followed by West Bengal. **Kerala** is the largest producer of **small cardamom**.	Spices Board was constituted on 26th February 1987 under the **Spices Board Act 1986** with the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960). Spices Board is one of the five Commodity Boards functioning under the **Ministry of Commerce & Industry**.

Q.4) "It is a plant of tropical and subtropical climates. It can withstand a wide range of temperature varying from 16°C to 35°C. It normally requires 100 cm of rainfall but it can also be successfully grown in areas of 50cm rainfall provided the rainfall is fairly distributed. Frost is injurious to its growth. Well drained friable sandy loams are best suited for it. Soil rather than climate is the determining factor for its geographical distribution." Which one of the following is that crop?

a) Sugarcane
b) Jute
c) Tobacco
d) Cotton

Q.4) Solution (c)

Basic Information:

In India tobacco is predominantly cultivated in AP, Gujarat, Karnataka, UP and Bihar.

- Gujarat accounts for 45 per cent of the area (0.13 M ha) and 30 per cent of production (0.16 M t).
- Productivity is also highest (1700 kg ha-1) in Gujarat followed by AP.

Q.5) Arrange the following states into the *decreasing* order of graphite reserves in India:

1. Odisha
2. Jharkhand
3. Arunachal Pradesh
4. Jammu and Kashmir

Select the correct option using the codes given below:

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

Q.5) Solution (c)

Basic Information:

- Graphite occurrences are reported from various States but the deposits of economic importance are located in Chhattisgarh, Jharkhand, Odisha and Tamil Nadu.
- Graphite, also known as plumbago or blacklead or mineral carbon, is a stable form of naturally occurring carbon.
- Arunachal Pradesh accounts for 37% of the total resources which is followed by Jammu & Kashmir (32%), Odisha (9.7%), Jharkhand (9%) and Tamil Nadu (4%).

Q.6) With reference to iron ore of India, consider the following statements:

1. Majority of the haematite iron ores are concentrated in eastern parts of India.
2. Limonite is also known as black ore due to blackish colour.

3. Magnetite ores are concentrated in the southern sector.

Which of the above statements is/are NOT correct?

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

Q.6) Solution (a)

Basic Information:

Ores are the minerals from which metal is conveniently and profitably extracted. Haematite, Magnetite, Siderite, Iron pyrites are the ores of the metal Iron. Among all the ores of Ferrous (Iron) magnetite is the finest quality of iron ore.

The iron ore is found in following four types:

1. **Magnetite**: It is the most important and best kind of iron ore. It contains about 72 percent metallic iron in it. It is black in colour.
2. **Hematite**: It is also an important source. It contains about 60-70 percent metallic iron in it. It is red and brown in colour.
3. **Limonite**: It contains about 30 to 40 percent metallic iron in it. It is mostly yellow in colour. It is a low-grade iron ore.
4. **Siderite**: It has more impurities. It contains about 48 percent metallic iron content in it. It is brown in colour. It contains a mixture of iron and carbon. It is a low-grade iron ore.

Statement Analysis:

Note: incorrect statements are asked.

Statement 1	Statement 2	Statement 3
Correct	**Incorrect**	**Correct**
Most of the haematite ores are found in Dharwad and Cuddapah rock systems of the peninsular India. **Over 80%** are concentrated in **eastern parts** of India comprising	Limonites are inferior ores which are yellowish in colour. **Magnetite** is known as **black ore**	**Magnetite** ores are found in Karnataka, Kerala, Tamil Nadu, Rajasthan and Andhra Pradesh. Karnataka has the more

of important iron producing states of Odisha, Jharkhand, Chattisgarh and Andhra Pradesh.	due to blackish colour.	than 70% of the magnetite reserve.

Q.7) Consider the following descriptions of a mineral found in India:

1. It does not occur free in nature and is found in association with copper, uranium and other metals.
2. It is used as an important alloying material.
3. Polymetallic sea nodules are another source of it.
4. Odisha has the largest reserve of this mineral.

Which of the following minerals is described in the above statements?

a) Zinc
b) Nickel
c) Lead
d) Tungten

Q.7) Solution (b)

Basic Information:

- Nickel is a lustrous, silvery-white metal having a high melting point.
- It exhibits high resistance to corrosion and oxidation, excellent strength and toughness at high temperatures

Nickel Deposits in India

The total resources of nickel ore have been estimated at 189 million tonnes. The distribution of Nickel in the states in descending order is given below:

- Odisha has about 92% resources; i.e., 175 million tones.

The remaining 8% resources are distributed in:

- Jharkhand (9 million tonnes)
- Nagaland (5 million tonnes)
- Karnataka (0.23 million tonnes) has only nominal resources.

Nickel is not produced from primary sources in the country and the entire demand is met

through imports. However, it is being recovered as nickel sulphate crystals, a by-product obtained during copper production.

- Nickel occurs principally as oxides, sulphides and silicates in India.
- Important occurrence is nickeliferous limonite in the overburden of chromite in Sukinda Valley, Jeypore district, Odisha, where it occurs as oxide. A suitable process is being developed for its utilisation.
- Nickel also occurs in sulphide form along with copper mineralisation in East Singhbhum district, Jharkhand. In addition, it is found associated with uranium deposits at Jaduguda, Jharkhand
- Other reported occurrences of nickel are from Karnataka, Kerala and Rajasthan.
- Polymetallic sea nodules are another source of nickel.

Q.8) The trees of tropical rainforest have buttress roots because:

a) They help to provide aeration to soils
b) The organisms found in the buttress have a symbiotic relationship
c) The trees belong to gramineae family
d) The buttresses have to bear the mechanical load of hardwoods

Q.8) Solution (d)

Basic Information:

- Buttress roots are large, wide roots on all sides of a shallowly rooted tree.
- Typically, they are found in nutrient-poor tropical forest soils that may not be very deep.
- They prevent the tree from falling over (hence the name buttress) while also gathering more nutrients.
- When the roots spread horizontally, they are able to cover a wider area for collecting nutrients.
- They stay near the upper soil layer because all the main nutrients are found there.
- Buttress roots are essential as rainforests have a shallow layer of fertile soil, so trees only need shallow roots to reach the nutrients. However, shallow roots can't support huge rainforest trees, so they have grown buttress roots to support them.

Q.9) Arrange the following varieties of silk in India in their order of decreasing production.

1. Muga
2. Eri
3. Mulberry
4. Tasar

Select the correct option using the codes given below:

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

Q.9) Solution (a)

Basic Information:

- India is the second largest producer of silk in the world.
- Among the four varieties of silk produced in 2018-19, **Mulberry** accounts for **71.50** per cent (25,213 MT), **Tussar 8.44 per** cent (2,977 MT), **Eri 19.40 per cent** (6,839 MT) and **Muga 0.66 per** cent (232 MT) of the provisional total raw silk production of 35,261 MT.
- To benefit farmers engaged in sericulture, Central Silk Board is implementing a restructured **Central Sector Scheme 'Silk Samagra'**, which mainly focuses on improving quality and productivity of domestic silk thereby reducing the country's dependence on imported silk.

- Karnataka is the leading producer State in India.

Q.10) Consider the following statements:

1. Phreatophytes are plants that are adapted to grow in active volcanic lava region.
2. India is the second largest producer of iodised salt in the world next only to China.
3. In the areas of extensive agriculture, per worker productivity is high whereas in the areas of intensive agriculture, per hectare productivity is high.

Which of the above statements is/are correct?

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

Q.10) Solution (c)

Basic Information:

Phreatophytes:

- Desert plants, known as phreatophytes, grow long deep roots that are capable of reaching the water table, which depths depend on the geology and nearby water sources.
- Phreatophytes live in areas with standing or running water, in arid areas and along the riverbeds and areas, apparently dry, where the water table is very shallow and near the surface. These plants have very deep roots that are able to reach the water table.
- Phreatophytes are not only characteristic of arid or desert zones, but also of wetlands, floodplains, depressions that hold water and estuaries.

BASIS FOR COMPARISON	INTENSIVE FARMING	EXTENSIVE FARMING

BASIS FOR COMPARISON	INTENSIVE FARMING	EXTENSIVE FARMING
Meaning	Intensive Farming refers to an agricultural system, wherein there is high level use of labor and capital, in comparison to the land area.	Extensive Farming is a farming technique, in which large farms are being cultivated, with relatively lower inputs, i.e. capital and labor.
Population	It is practiced in densely populated region.	It is practiced in moderately populated region.
Land holding	Small and expensive	Large and inexpensive
Farmland	Near to the market	Remotely located
Per hectare output	Large	Small

Statement Analysis:

Statement 1	Statement 2	Statement 3
Incorrect	**Incorrect**	**Correct**
A phreatophyte is a deep-rooted plant that obtains a significant portion of the water that it needs from the **phreatic zone** (zone of saturation) or the capillary fringe above the phreatic zone.	India is the **third largest** producer of iodised salt in the world next to China and USA.	In the areas of extensive agriculture, per worker productivity is high whereas in the areas of intensive agriculture, per hectare productivity is high.

Q.11) Consider the following statements about zero budget natural farming:

1. It is a method of chemical-free agriculture.
2. This method results in a huge surge of agricultural yields.
3. Jeevamrutha is a concoction of neem leaves & pulp, tobacco and green chilies prepared for insect and pest management.

Which of the following statements is/are correct?

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

Q.11) Solution (b)

Basic Information:

- Zero budget natural farming is a method of chemical-free agriculture drawing from traditional Indian practices.
- It was originally promoted by agriculturist Subhash Palekar, who developed it in the mid-1990s as an alternative to the Green Revolution's methods that are driven by chemical fertilizers and pesticides and intensive irrigation.
- It is a unique model that relies on Agro-ecology.
- It aims to bring down the cost of production to nearly zero and return to a pre-green revolution style of farming.
- It claims that there is no need for expensive inputs such as fertilisers, pesticides and intensive irrigation.
- ZBNF is based on 4 pillars:
    - Jeevamrutha: It is a mixture of fresh cow dung and aged cow urine (both from India's indigenous cow breed), jaggery, pulse flour, water and soil; to be applied on farmland.
    - Bijamrita: It is a concoction of neem leaves & pulp, tobacco and green chilies prepared for insect and pest management that can be used to treat seeds.
    - Acchadana (Mulching): It protects topsoil during cultivation and does not destroy it by tilling.

  - Whapasa: It is the condition where there are both air molecules and water molecules present in the soil. Thereby helping in reduction of irrigation requirement.
- Sikkim (India's first organic state), has seen some decline in yields following conversion to organic farming.
- Many farmers have reverted to conventional farming after seeing their ZBNF returns drop after a few years.
- While ZBNF has definitely helped preserve soil fertility, its role in boosting productivity and farmers' income isn't conclusive yet.

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	**Incorrect**	**Incorrect**
This is the basis of ZNBF.	A relatively lower output has been observed.	Jeevamrutha is a mixture of fresh cow dung and aged cow urine (both from India's indigenous cow breed), jaggery, pulse flour, water and soil; to be applied on farmland.

Q.12) Consider the following statements about farming in India:

1. Dry farming: it is production of crops without irrigation in areas where annual rainfall is less than 750 mm.
2. Dryland farming: it is cultivation of crops in areas receiving rainfall above 750 mm.

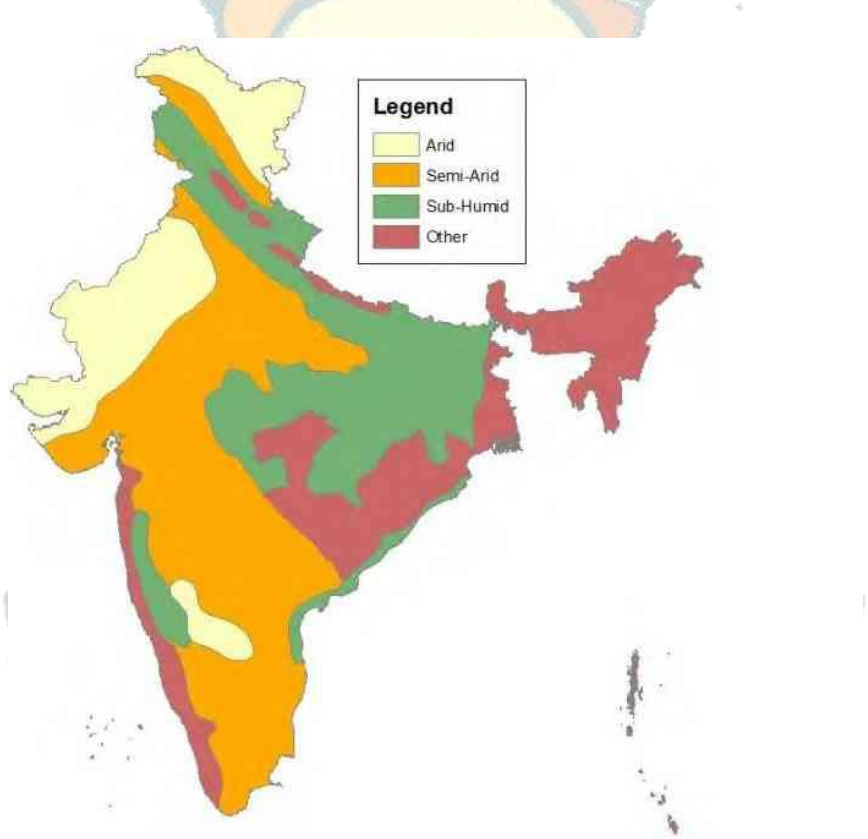
Which of the following statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2 are correct
d) Neither 1 nor 2 is correct

Q.12) Solution (c)

Basic Information:

- Depending on the amount of rainfall received, dryland agriculture has been grouped into three categories:
    - **Dry farming**: it is production of crops without irrigation in areas where annual rainfall is less than 750 mm. Crop failures are more frequent under dry farming condition owing to prolonged dry spells during crop period. The growing season is less than 200 days. It is generally practiced in arid regions of the country
    - **Dryland farming**: cultivation of crops in areas receiving rainfall above 750 mm is known as dryland farming. Dry spell during crop duration occurs, but crop failures are less frequent. Semi-arid regions are included under this category.
    - **Rainfed farming**: It is practice of crop cultivation without irrigation in areas receiving 1150 mm rainfall, mostly in sub-humid and humid areas. Here chances of crop failure and water stress are very less.



Q.13) Select the incorrect statement from the options given below:

a) Most dominant crop of India is wheat.
b) Uttar Pradesh is the largest producer of wheat in India.
c) Wheat requires long days for ripening
d) West Bengal is the largest producer of rice in India.

Q.13) Solution (a)

Basic Information:

- In India, wheat crop is grown mainly in the northern states, with Uttar Pradesh being the top-most contributor of wheat with a total production of 25.22 million tonnes, followed by Punjab (15.78 MT) and Madhya Pradesh (14.18 MT)
- Wheat crop is usually sown from months of September to December in various states of India depending upon the suitable climate, and the harvesting is done from February to May depending upon the climate as well as the time it is seeded. The temperature required for sowing ideally should be the winter temperature of 10°C-15°C and summer temperature of 21°C-26°C. The temperature at sowing needs to be low while at the harvesting time, higher temperatures are necessary for the proper ripening of Wheat.
- Rice is one of the chief grains of India. Moreover, this country has the largest area under rice cultivation, as it is one of the principal food crops. It is in fact the dominant crop of the country. India is one of the leading producers of this crop. Rice is the basic food crop and being a tropical plant, it flourishes comfortably in hot and humid climate. Rice is mainly grown in rain fed areas that receive heavy annual rainfall. That is why it is fundamentally a kharif crop in India.
- West Bengal is the largest producer of rice in India.

Q.14) Consider the following statements about drip irrigation

1. Drip irrigation is suitable for all types of crops.
2. Drip irrigation helps in increasing fertilizer use efficiency.
3. Drip irrigation is unsuitable for undulating and hilly terrains.

Which of the following statements is/are correct?

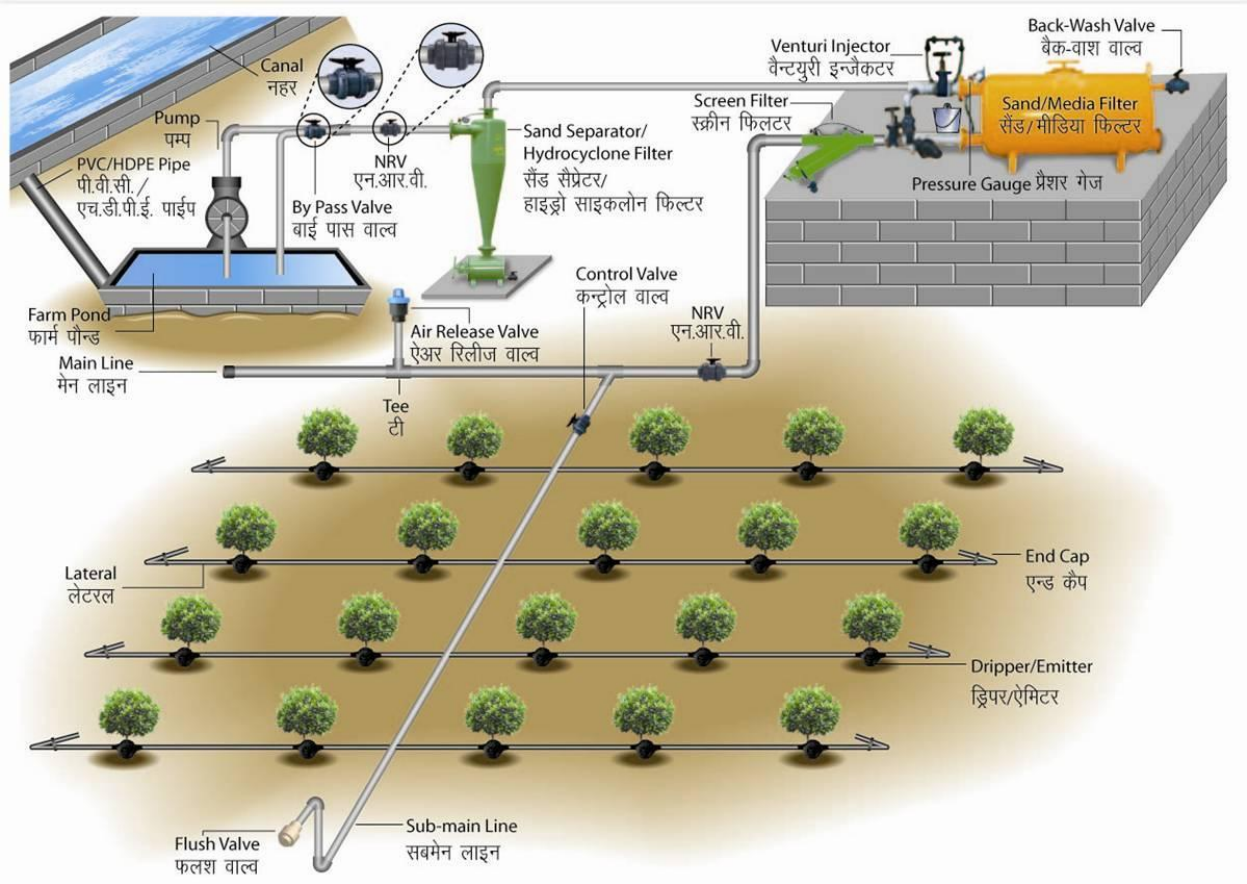
a) 1, 2 and 3
b) 2 and 3 only
c) 2 only

d) 1 and 3 only

Q.14) Solution (c)

Basic Information:

- Drip irrigation is sometimes called trickle irrigation and involves dripping water onto the soil at very low rates (2-20 litres/hour) from a system of small diameter plastic pipes fitted with outlets called emitters or drippers. Water is applied close to plants so that only part of the soil in which the roots grow is wetted, unlike surface and sprinkler irrigation, which involves wetting the whole soil profile. With drip irrigation water, applications are more frequent (usually every 1-3 days) than with other methods and this provides a very favourable high moisture level in the soil in which plants can flourish.



Layout of Drip Irrigation System (ड्रिप सिंचाई पद्धति का रेखाचित्र)

- Benefits of drip Irrigation
  - Increase in yield up to 230 %.
  - Saves water up to 70% compare to flood irrigation. More land can be irrigated with the water thus saved.
  - Crop grows consistently, healthier and matures fast.
  - Early maturity results in higher and faster returns on investment.
  - Fertilizer use efficiency increases by 30%.
  - Cost of fertilizers, inter-culturing and labour use gets reduced.
  - Fertilizer and Chemical Treatment can be given through Micro Irrigation System itself.
  - Undulating terrains, Saline, Water logged, Sandy & Hilly lands can also be brought under productive cultivation.

Drip irrigation is most suitable for row crops (vegetables, soft fruit), tree and vine crops where one or more emitters can be provided for each plant. Generally only high value crops are considered because of the high capital costs of installing a drip system.

Statement Analysis:

Statement 1	Statement 2	Statement 3
Incorrect	**Correct**	**Incorrect**
Drip irrigation is suitable for crops in which considerable amount of spacing is required. For close spaced crops like rice and wheat sprinkler irrigation will be more beneficial.	Fertilizer use efficiency increases by 30%.	Drip irrigation is very beneficial for hilly terrain as it will reduce water led surface erosion.

Q.15) Select the incorrect statement from the below given options:

a) Three crops of paddy are grown in a year are Aus, Aman and Boro.
b) Zaid crops are sown after kharif crops.
c) Jowar and bajra are important kharif crops.
d) None of the above statements is incorrect.

Q.15) Solution (b)

Basic Information:

- Kharif crops are grown with the onset of monsoon in different parts of the country and these are harvested in September-October. Important crops grown during this season **are paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean**.
- In states like Assam, West Bengal and Odisha, three crops of paddy are grown in a year. These are **Aus, Aman and Boro.**
- In between the rabi and the kharif seasons, there is a short season during the summer months known as the Zaid season. Some of the crops produced during 'zaid' are watermelon, muskmelon, cucumber, vegetables and fodder crops.

Q.16) Consider the following statements:

1. Coal reserves of North-east India are older than the reserves of peninsular India.
2. India has 3rd largest coal reserves in the world.
3. Jharkhand is the largest coal producing state in India.

Which if the following statement is/are *incorrect*?

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

Q.16) Solution (a)

Basic Information:

- In 2017, India had 315.14 billion metric tons (347.38 billion short tons) of coal. The estimated total reserve of lignite coal that year was 44.70 billion metric tons (49.27 billion short tons). Due to high demand and poor average quality, India imports coking coal to meet the requirements of its steel plants.
- Dhanbad city is the largest coal producing city.
- India has the fourth largest coal reserves in the world.

- The Coal resources of India are available in older Gondwana Formations of peninsular India and younger Tertiary formations of north-eastern region.
- Jharkhand, Odisha and Chattisgarh are the top three coal producing states in India.

Statement Analysis:

Note: Incorrect statements are asked.

Statement 1	Statement 2	Statement 3
Incorrect	**Incorrect**	**Correct**
Tertiary coal is younger than Gondwana coal.	India has 4th largest reserve of coal in the world.	Jharkhand is the top producing state in India.

Q.17) Consider the following statements about tourism sector in India:

1. Nepal is the largest source country for foreign tourists' arrivals in India.
2. Maharashtra hosts the largest number of foreign tourists in India.

Which of the following statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2 are correct.
d) Neither 1 nor 2 is correct.

Q.17) Solution (b)

Basic Information:

- Tourism in India is important for the country's economy and is growing rapidly. The World Travel and Tourism Council calculated that tourism generated ₹16.91 lakh crore or 9.2% of India's GDP in 2018 and supported 42.673 million jobs, 8.1% of its total employment. The sector is predicted to grow at an annual rate of 6.9% to ₹32.05 lakh crore by 2028 (9.9% of GDP).

- The World Tourism Organization reported that India's receipts from tourism during 2012 ranked 16th in the world and 7th among Asian and Pacific countries.
- Bangladesh, USA and UK are top three source countries for foreign tourists in India, while Tamil Nadu is for domestic tourists.
- Delhi, Mumbai, Chennai, Agra and Jaipur were the five most visited cities of India by foreign tourists during the year 2015. Worldwide, Delhi is ranked 28th by the number of foreign tourist arrivals, while Mumbai is ranked 30th.

Statement Analysis:

Statement 1	Statement 2
Incorrect	**Correct**
Bangladesh is the largest source country.	Maharashtra is the largest destination for foreign tourists in India.

Q.18) Consider the following statements about nuclear sector in India:

1. Carnotite and brannerite are uranium minerals.
2. Canada is world's largest uranium producer.
3. Thorium is more abundant in nature than uranium.
4. Narora nuclear power plant is located in Maharashtra.

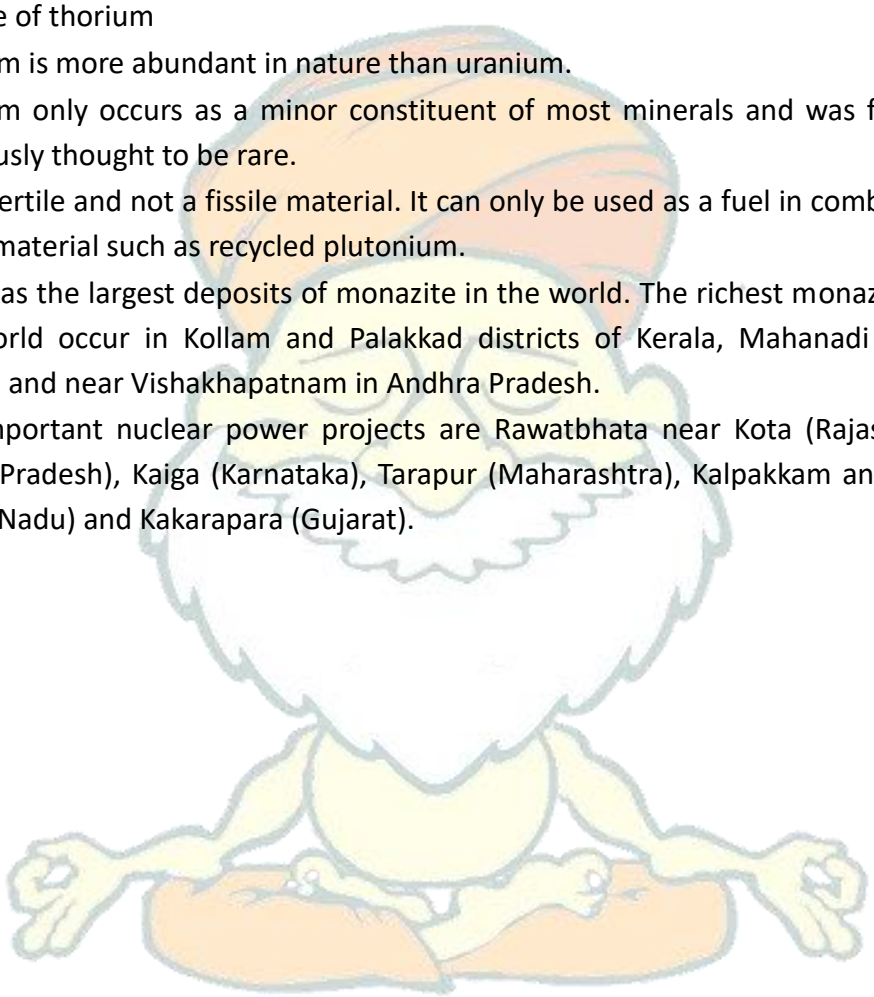
Which of the following statements is/are correct?

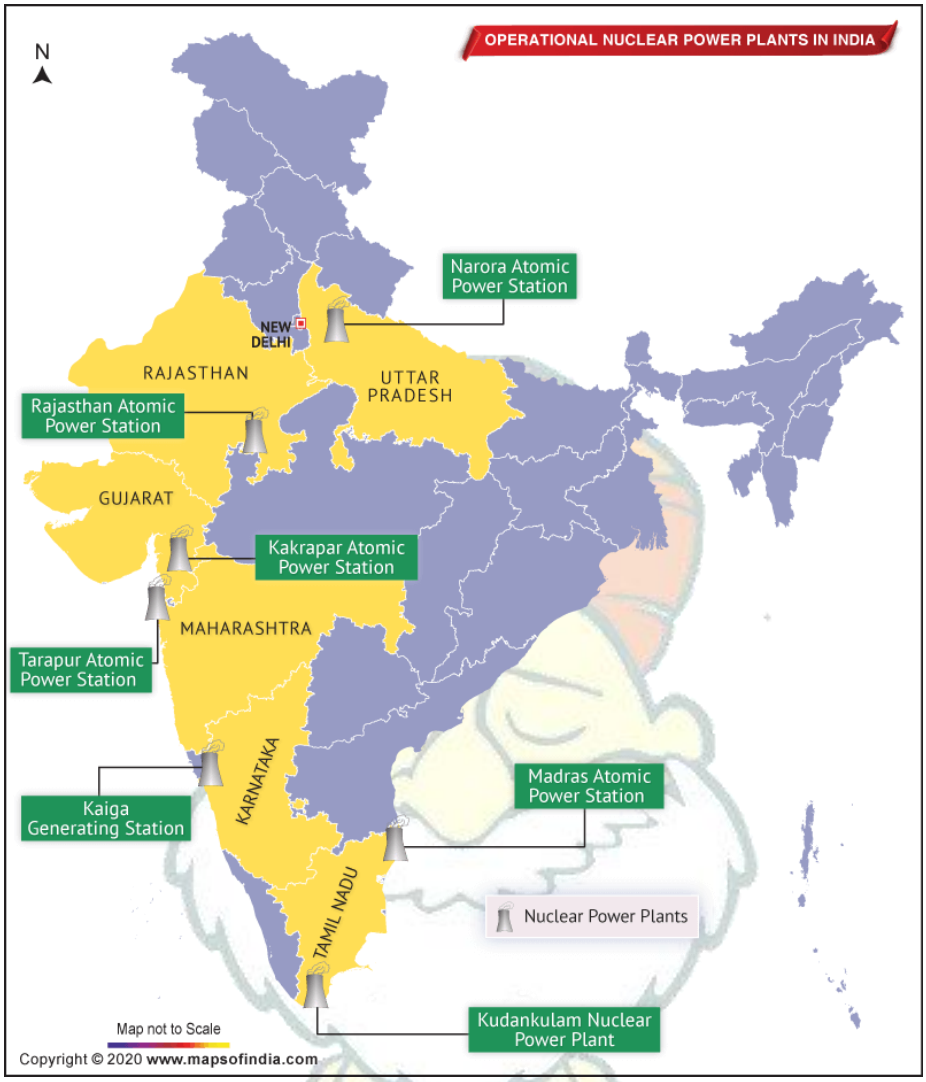
a) 1 and 2 only
b) 1, and 3 only
c) 2, 3 and 4 only
d) All of the above

Q.18) Solution (b)

Basic Information:

- Commercial deposits of uranium may include concentrations of uranium minerals such as carnotite, brannerite and uraninite.
- Canada was the world's largest uranium producer for many years, but in 2009 was overtaken by Kazakhstan.
- Australia possesses around 30% of the world's known recoverable uranium reserves. Australia has the largest reserves of uranium in the world.
- Natural thorium is usually almost pure 232Th, which is the longest-lived and most stable isotope of thorium
- Thorium is more abundant in nature than uranium.
- Thorium only occurs as a minor constituent of most minerals and was for this reason previously thought to be rare.
- It is a fertile and not a fissile material. It can only be used as a fuel in combination with a fissile material such as recycled plutonium.
- India has the largest deposits of monazite in the world. The richest monazite deposits in the world occur in Kollam and Palakkad districts of Kerala, Mahanadi river delta in Odisha and near Vishakhapatnam in Andhra Pradesh.
- The important nuclear power projects are Rawatbhata near Kota (Rajasthan), Narora (Uttar Pradesh), Kaiga (Karnataka), Tarapur (Maharashtra), Kalpakkam and Kudankulam (Tamil Nadu) and Kakarapara (Gujarat).





Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4
Correct	**Incorrect**	**Correct**	**Incorrect**
Pitchblende is also uranium mineral.	Kazakhstan is the largest producer.	It is a fact.	Narora is located in Uttar Pradesh.

Q.19) Consider the following sources of renewable energy:

1. Small hydropower
2. Bioenergy
3. Solar power
4. Wind power

Arrange the following in the decreasing order of their consumption in the world.

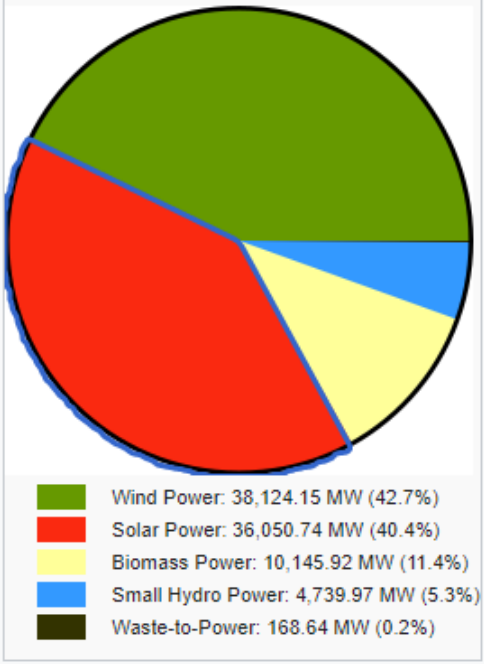
a) 1-2-3-4
b) 4-3-2-1
c) 3-4-2-1
d) 4-3-1-2

Q.19) Solution (d)

Basic Information:

- India was the first country in the world to set up a ministry of non-conventional energy resources (Ministry of New and Renewable Energy (MNRE)), in the early 1980s, and its public sector undertakings the Solar Energy Corporation of India is responsible for the development of solar energy industry in India. Hydroelectricity is administered separately by the Ministry of Power and not included in MNRE targets.
- Unlike most countries, until 2019 India did not count large hydro power towards renewable energy targets as hydropower was under the older Ministry of Power instead of Ministry of New and Renewable Energy. This system was changed in 2019 and the power from large hydropower plants is since also accounted for.

Installed grid interactive renewable power capacity in India as of 30 September 2020 (excluding large hydro)[8][9]



Year wise renewable energy generation (GWh)[20]

Source	2014-15	2015-16	2016-17	2017-18	2018-19	2019-2020
Large Hydro	129,244	121,377	122,313	126,134	135,040	155,970
Small Hydro	8,060	8,355	7,673	5,056	8,703	9,366
Solar	4,600	7,450	12,086	25,871	39,268	50,103
Wind	28,214	28,604	46,011	52,666	62,036	64,639
Bio mass	14,944	16,681	14,159	15,252	16,325	13,843
Other	414	269	213	358	425	366
Total	**191,025**	**187,158**	**204,182**	**227,973**	**261,797**	**294,288**[21]
Total utility power	1,105,446	1,168,359	1,236,392	1,302,904	1,371,517	1,385,114
% Renewable power	17.28%	16.02%	16.52%	17.50%	19.1%	21.25%

Q.20) Select the incorrect statement from the given options:

a) China has the largest network of pipeline in the world.
b) India is the largest importer of crude oil in the world.
c) Maharashtra is the largest producer of crude oil in India.
d) All the above statements are incorrect.

Q.20) Solution (d)

Basic Information:

- Pipeline transport is the long-distance transportation of a liquid or gas through a system of pipes—a pipeline—typically to a market area for consumption. The latest data from 2014 gives a total of slightly less than 3,500,000 km of pipeline in 120 countries of the world. The United States had 65%, Russia had 8%, and Canada had 3%, thus 75% of all pipeline were in these three countries.

- India is heavily dependent on crude oil and LNG imports with 82.8% import dependence for crude oil and 45.3% for natural gas/LNG.
- India is the second biggest importer of crude oil and its products after China.
- India is the third largest consumer of crude oil in the world, after the United States and China.
- Assam is the largest producer of crude oil in India.

Region	Crude oil reserves (in million metric tonnes)	Share of oil (%)	Natural gas reserves (in BCM)	Share of gas (%)
Arunachal Pradesh	1.52	0.25	0.93	0.07
Andhra Pradesh	8.15	1.35	48.31	3.75
Assam	159.96	26.48	158.57	12.29
Coal Bed Methane	0	0	106.58	8.26
Eastern Offshore[a]	40.67	6.73	507.76	39.37
Gujarat	118.61	19.63	62.28	4.83
Nagaland	2.38	0.39	0.09	0.01
Rajasthan	24.55	4.06	34.86	2.70
Tamil Nadu	9.00	1.49	31.98	2.48
Tripura	0.07	0.01	36.10	2.80
Western Offshore[b]	239.20	39.60	302.35	23.44
Total	**604.10**	**100**	**1,289.81**	**100**

Western offshore includes Bombay High offshore, Rajasthan and joint venture companies for Crude Oil, and Bombay High offshore, Rajasthan and Madhya Pradesh for Natural Gas.

Q.21) Consider the following statement about 'State Election Commissioner (SEC)':

1. SEC is appointed by Governor of state, but can only be removed by President only.
2. SEC has superintendence, direction and control over all the election happening in state.
3. Constitution has defined the condition of tenure and service of office of the SECs.

Which of the given statements is/are incorrect?

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

Q.21) Solution (c)

Explanation

About State Election Commissioner (SEC) (Article 243K)

- The superintendence, direction and control of the preparation of electoral rolls for, and the conduct of all elections to the Panchayat bodies in the State shall be vested in a SEC.
- Power of superintendence, direction and control of election to the legislative assembly to the state and General Election of country is vested in Election Commission of India. **(So, Statement 2 is incorrect)**
- SEC is to be appointed by the Governor.
- Subject to the provisions of any law made by the Legislature of a State, the conditions of services and tenure of office of the SEC shall be such as the Governor may by rule determine. **(So, statement 3 is incorrect)**
- SEC shall not be removed from his/her office except in like manner and on the like grounds as a Judge of a High Court.
- According to Article 243ZA, Elections to the Municipalities is also vested in SEC

Q.22) Consider the following statements regarding 'National Food Security Act, 2013':

1. Under it, nearly 66% of the population is covered, based on SECC, 2011.
2. Most vulnerable family, under Antyodaya Anna Yojana are provided food free of cost.
3. Central issued price, under which food is provided, will not be more than Minimum Support Price to farmer.

Which of the above given statement is/are correct?

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

Q.22) Solution (b)

Explanation:

NATIONAL FOOD SECURITY ACT (NFSA), 2013

- NFSA provides a legal right to persons belonging to "eligible households" to grains at Central Issue Price/CIP under the Targeted Public Distribution System (TPDS).
- Present CIPS: Rice at Rs 3/kg, wheat at Rs 2/kg and coarse grain at Rs 1/kg.
- **Coverage**: 75% of the rural and 50% of the urban population (overall 81.35 crore people) **based on the census 2011** and these beneficiaries were frozen in 2013. **(So, statement 1 is incorrect)**
- Eligible households:
    - Priority households: Entitled to receive 5 kg of food grains per person per month.
    - Under the Antyodaya Anna Yojana: Entitled to 35 kg/person per month **at same prices. (So, statement 2 is incorrect)**
- Food grains under NFSA were to be made available at subsidized prices of Rs.3/2/1 per kg for rice, wheat and coarse grains respectively for an initial period of three years from the date of commencement of the Act (July 13, 2013). Thereafter, **prices were to be fixed by the Central Government from time to time, but not exceeding MSP**. **(So, statement 3 is correct)**

Q.23) Consider the following statements regarding 'fuel pricing in India':

1. Price of Petrol is fluctuating in India as Prices has been determined based on Crude Oil prices.
2. The formula to determine fuel prices assumes that 80% of oil is imported to India.

Which of the above given statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.23) Solution (b)

Explanation:

How is fuel price determined in India?

- Price of petrol and diesel in India is not determined by the actual costs incurred by PSU refiners but rather by a formula trade parity price (TPP).
- It assumes that 80% of petrol and diesel is imported into India and 20% Is exported.

- **So, petrol and diesel prices in India are determined based on prices of these fuels in the international market- and not on the basis of crude oil prices.(So, Statement 1 is incorrect)**

TPP in dollars is then converted to rupees. To this, other costs and margins of the oil companies, dealer commission are added.

Then, since it has been kept out of the goods and services tax (GST) net, Centre imposes excise duty; states impose sales tax or Value Added tax (VAT).

Q.24) Consider the following statements regarding Land Ports:

1. A land port houses the customs and border protection, and other inspection agencies responsible for the enforcement of country's laws pertaining to such activities.
2. Land Port Authority of India (LPAI) is an executive body working under Ministry of Ports, Shipping and Waterways.
3. LPAI manages Integrated Check Posts.

Which of the above statement is/are correct?

a) 1 and 2only
b) 1 and 3 only
c) 2 and 3 only
d) All of the Above

Q.24) Solution (b)

Explanation

Statement 1: **Land Ports** also called border stations for import and export. A land port houses the customs and border protection, and other inspection agencies responsible for the enforcement of country's laws pertaining to such activities. The land port of entry consists of the land, the buildings, and the on-site roadways and parking lots that the port of entry occupies. (Hence, statement 1 is correct)

Statement 2: The Land Ports Authority of India or LPAI is a statutory body (created through the Land Ports Authority of India Act, 2010) working under the Ministry of Home Affairs; Government of India is responsible for creating, upgrading, and maintaining and managing border infrastructure in India. (Hence, Statement 2 is incorrect)

Statement 3 It manages several Integrated Check Posts (ICPs) all across Borders of India. (Hence, Statement 3 is correct)

S. No.	ICP Location	State	Borders with
1	Attari (Amritsar)	Punjab	Pakistan
2	Agartala	Tripura	Bangladesh
3	Petrapole	West Bengal	Bangladesh
4	Raxaul	Bihar	Nepal
5	Jogbani	Bihar	Nepal
6	Moreh	Manipur	Myanmar
7	Dawki	Meghalaya	Bangladesh

Q.25) Arctic monitoring satellite Arktika M has been launched by:

a) United States
b) China
c) India
d) Russia

Q.25) Solution (d)

Explanation:

About Arktika M

- This is Russia's first Arctic monitoring satellite to monitor the climate and environment in the Arctic region.
- The Arctic has warmed more than twice as fast as the global average over the last three decades.

- This opens up opportunities for huge oil and gas reserves that are being eyed by countries including the United States, Russia, Canada etc.

Q.26) Consider the following statements about 'Least developed country':

1. For evaluation of Sustainable Development Goals, Country can self-certify themselves as Least Developed Countries.
2. Highest number of LDCs is in African Continent.

Which of the given statement are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.26) Solution (b)

Explanation:

Least developed country (LDCs)

- LDCS are low-income countries confronting severe structural impediments to sustainable development. They are highly vulnerable to economic and environmental shocks and have low levels of human assets.
- There are total 46 LDCs out of which 33 are in Africa, 9 in Asia, 1 in Caribbean and 3 in the Pacific Ocean. (So, Statement 2 is correct)
- 3 Identification criteria for LDCs:
    1. Per capita income,
    2. A human assets index and
    3. An economic vulnerability index.
- For graduation, at least two of the three criteria at two consecutive triennial reviews are required.
- United Nation Community Development Policy (CDP), a subsidiary of the UN Economic and Social Council (ECOSOC), is mandated to review the category of Least Developed Country (LDC-First introduced in 1971 by UN) every 3 years and monitor their progress after graduation from the category.

- CDP advises the Council on issues that are relevant for the implementation of the 2030 Sustainable Development Agenda. The proposal will be sent to the ECOSOC for endorsement and final approval by the UN General Assembly. Countries don't self-certify for the evaluation under SDG goals.**(So, Statement 2 is incorrect)**

Q.27) Consider the following rivers:

1. Vaigai
2. Vellar
3. Gundar
4. Cauvery

Which of the following state come under basin of all rivers?

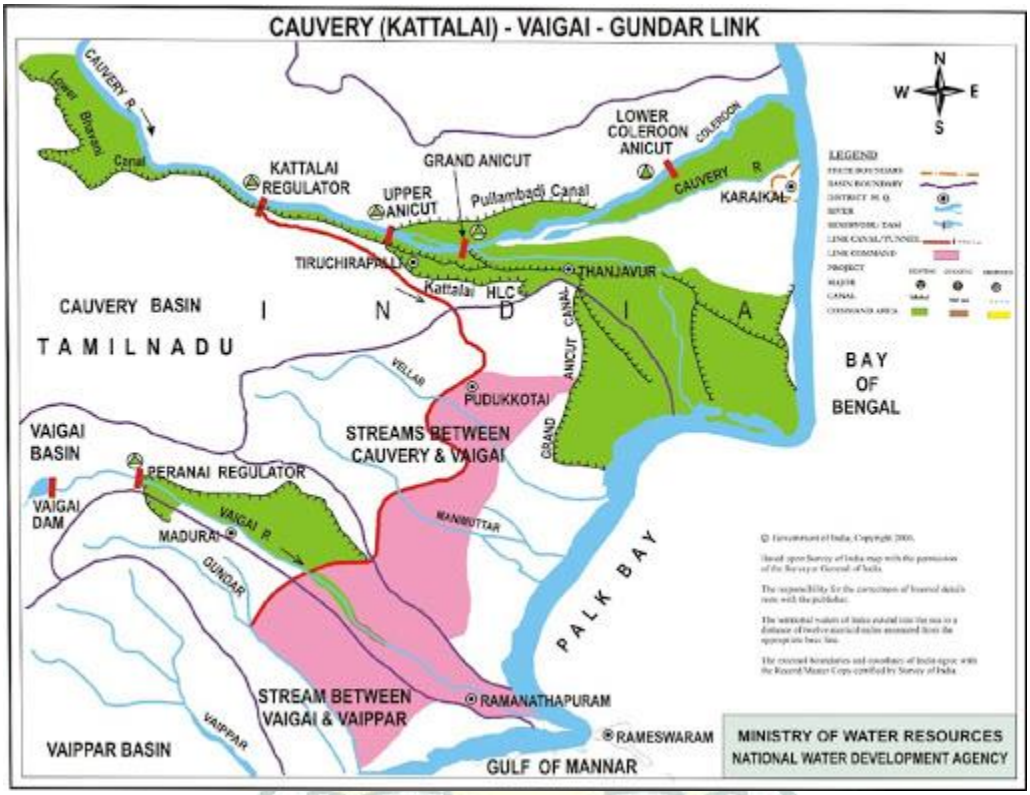
a) Karnataka
b) Andhra Pradesh
c) Kerala
d) Tamilnadu

Q.27) Solution (d)

Explanation:

Cauvery – Vaigai – Vellar – Gundar River Linking Project

- It is 262-km river-linking project which is implemented under the Centre's river-linking project to utilise surplus Kaveri water.
- Project does not involve construction of any large dam but involves only construction of a diversion structure.
- Benefits: To create employment opportunities for local population; divert 6,300 cubic feet of surplus water during floods and increase the groundwater levels.
- Tamilnadu is only state where river basin of all four given river are situated.



Q.28) Consider the following agency related to 'IN-SPACe':

1. IN SPACe is a commercial arm of ISRO which will facilitate private agency in space sector.
2. IN-SPACe is incorporated under Companies Act, 2013.

Which of the given statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.28) Solution (d)

Explanation:

Both the given statement is correct regarding NSIL, and not about IN-SPACe.

IN-SPACe

- IN-SPACe is an independent nodal agency under Department of Space (DoS).

- It allows space activities and usage of DoS owned facilities by Non-Government-Private-Entities as well as to prioritise the launch manifest.
- IN-SPACe hand-hold, promote and guide private sector through encouraging policies and a friendly regulatory environment.

NSIL

- **NSIL is the commercial arm of ISRO** with the primary responsibility of enabling Indian industries to take up high technology space related activities.
- It is also responsible for promotion and commercial exploitation of the products and services emanating from the Indian space programme.
- **NSIL is incorporated under Companies Act 2013 and it is wholly owned Government of India Company, under the administrative control of DOS.**
- NSIL work with IN-SPACe and enable industry consortia to take on some of the activities of ISRO.

Q.29) Consider the following statements about 'Himalayan Serow':

1. This Serow is found all over the Himalayas and even in Trans-Himalayas.
2. They are carnivores animal, especially dependent on dead animal's bodies.
3. Their status according to IUCN's Red list is critically endangered.

Which of the above given statement is/are *incorrect*?

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

Q.29) Solution (d)

Explanation:

About Himalayan Serow

- There are several species of serows, and all of them are found in Asia.
- Himalayan Serow is typically found **at altitudes between 2,000 metres and 4,000 metres**.

- They are known to be found in **eastern, central, and western Himalayas**, but not in the **Trans Himalayan region**. **(So, Statement 1 is incorrect)**
- Himalayan Serows are herbivores. **(So, Statement 2 is incorrect)**
- It is listed under Schedule I of the Wildlife Protection Act, 1972.
- IUCN status: Vulnerable. **(So, Statement 3 is incorrect)**

Q.30) CPI for Urban Non-Manual Employees (UNME) is released by:

a) Labour Bureau in the Ministry of Labour
b) National Sample Survey Office
c) Central Statistical Organisation
d) NITI Aayog

Q.30) Solution (c)

Explanation:

CPI for Urban Non-manual Employees, CPI (UNME)

- An urban non-manual employee is defined as one who derives 50 per cent or more of his or her income from gainful employment on non-manual work in the urban non-agricultural sector.
- The current CPI (UNME) series with base 1984-85, introduced in November 1987, derives the weighting pattern from the family living survey conducted during 1982-83 in 59 selected urban centres.
- Centres were selected keeping in view, (a) concentration of the UNME population at the centre, (b) inclusion of State capital cities, and (c) regional representation.
- The centres were allocated to different States broadly in proportion to their 1981 urban population with the limitation that not more than five centres were allotted to any State.
- For compilation of CPI (UNME), retail prices in respect of the selected items and services from selected markets in the 59 centres are collected by FOD on a monthly basis.
- **The index is being released by CSO with a time lag of about two weeks.**
- Some of the State Governments, public and private sector undertakings, foreign embassies, etc. are making use of this index for purposes of regulating Dearness Allowance.
- The index is also used for computing the advance tax liability of tax payers from capital gains by the Central Board of Direct Taxes.

Directions for the following 2 (two) questions:

Q.31) In each of the following questions there are two or three statements, which are followed by three or four conclusions. Choose the conclusions which logically follow from the given statements.

Consider the following

Statements:

i. Some dogs are cats.
ii. Some cats are rats.
iii. No rat is a cow.

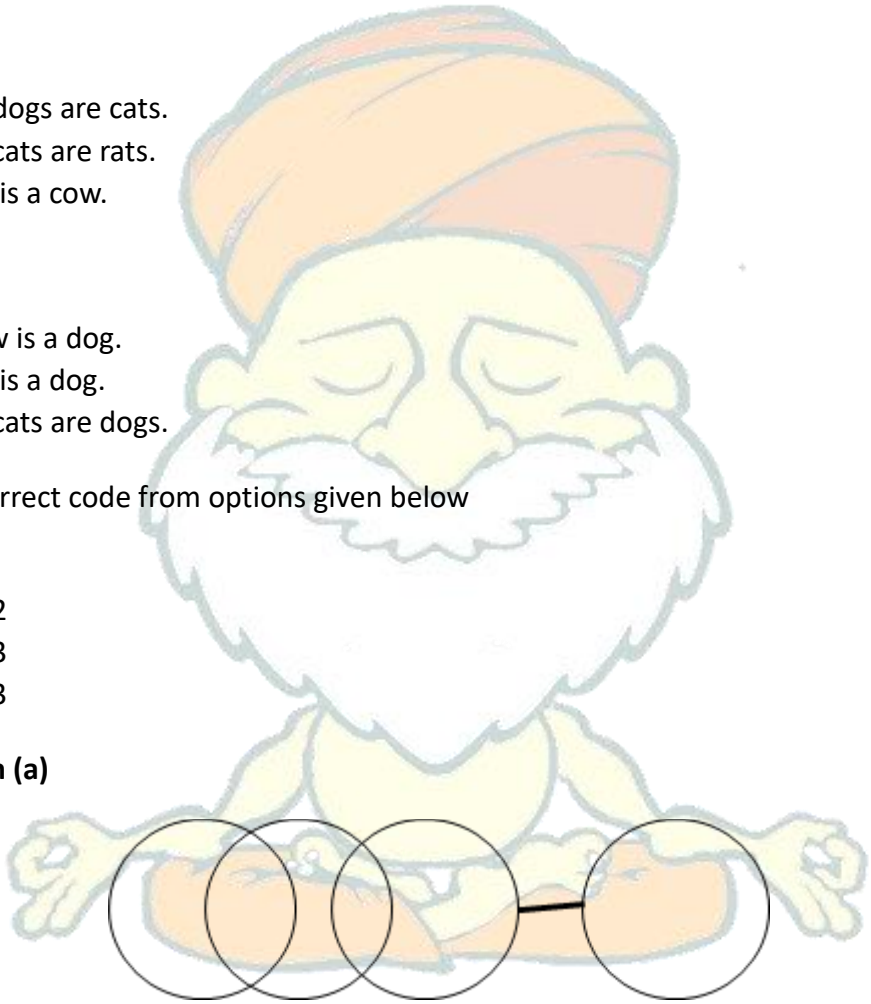
Conclusions:

1. No cow is a dog.
2. No rat is a dog.
3. Some cats are dogs.

Choose the correct code from options given below

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

Q.31) Solution (a)



Dogs Cats Rats Cows

Some cats are dogs is true. Other statements are not.

Q.32) In each of the following questions there are two or three statements, which are

followed by three or four conclusions. Choose the conclusions which logically follow from the given statements.

Consider the following

Statements:

A. All reds are blue.
B. No blue is white.
C. All pink are white.

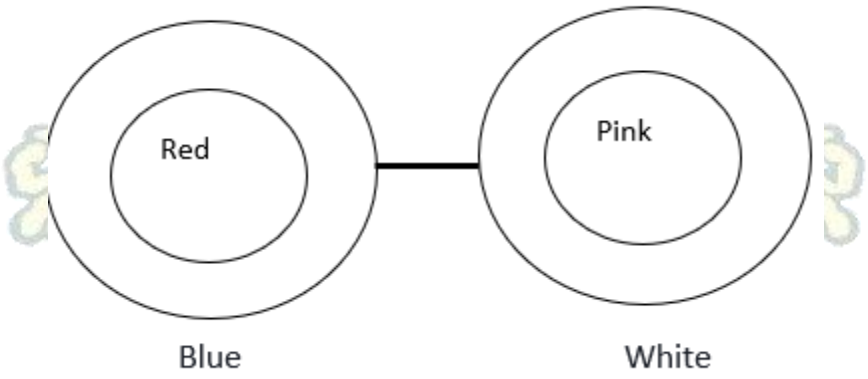
Conclusions:

1. No red is white.
2. No pink is blue.
3. No red is pink.

Choose the correct code from options given below

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

Q.32) Solution (d)

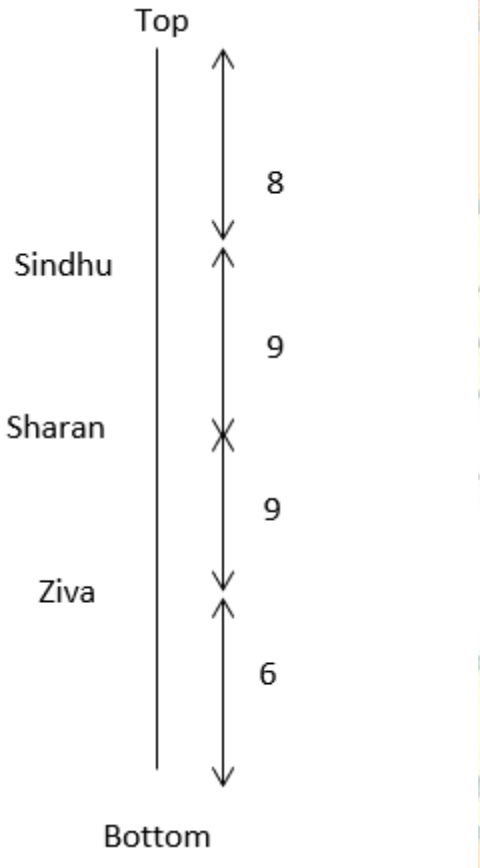


Clearly, all the conclusions follow.

Q.33) In a class of 35 students, Ziva is placed 7th from the bottom whereas Sindhu is placed 9th from the top. Sharan is placed in between the two. What is Ziva's position from Sharan?

a) 10^{th}
b) 15^{th}
c) 19^{th}
d) 21^{st}

Q.33) Solution (a)



As seen in the figure, Sharan is between Sindhu and Ziva.

It's given that Ziva is 7th from the bottom and Sindhu is 9th from the top.

Therefore, number of persons between Sindhu and Ziva = 35 - (9 + 7) = 19

Sharan's position between Sindhu and Ziva = (19+1)/2 = 10

Hence, Sharan is at the middle i.e. at 10th position from both. Ziva, therefore, is at the 10^{th}

position from Sharan

Q.34) Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer:

Which village is to the North-East of village 'A'?

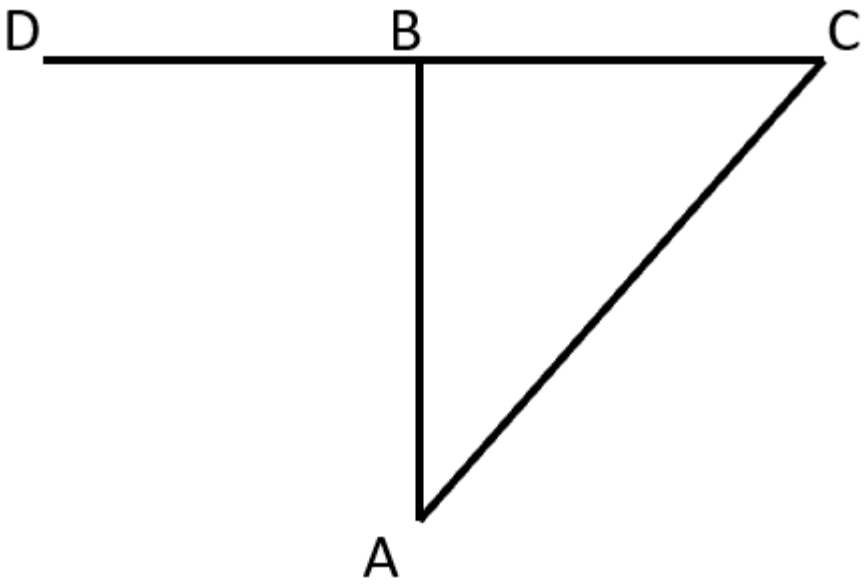
I. Village 'B' is to the North of village A, villages C and D are to the East and West of village B, respectively.
II. Village 'P' is to the South of village 'A' and village 'E' is to the East of village 'P', village 'K' is to the North of village 'P'.

Choose the correct code

a) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question
b) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question
c) The data given in statements, I and II together are not sufficient to answer the question
d) The data in both statements I and II together are necessary to answer the question

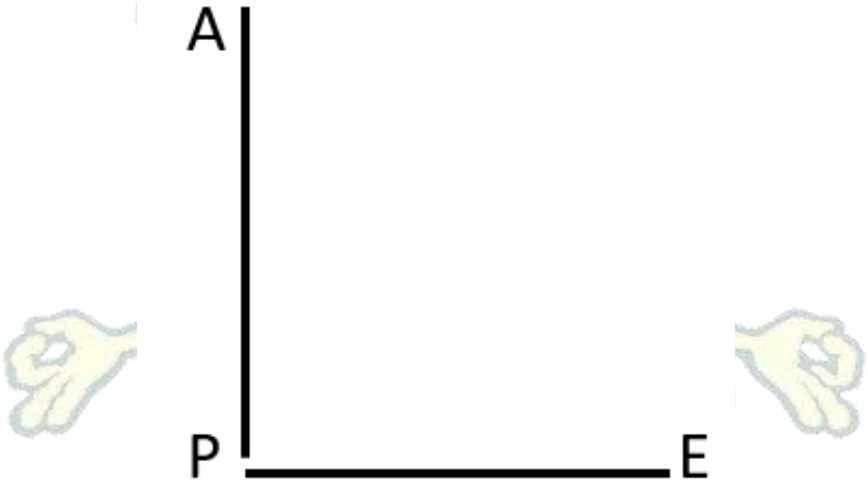
Q.34) Solution (a)

From Statement I



So, C is towards North East.

From Statement II



We can't determine K's position as he can be situated anywhere to the north of P.

Read the following passage and answer the question that follow each passage. Your answer to these question should be based on passage only.

Our voyage was very prosperous, but I shall not trouble the reader with a journal of it. The captain called in at one or two ports and sent in his long-boat for provisions and fresh water, but I never went out of the ship still we came into the Downs, which was on the 3rd day of June, 1706, about nine months after my escape. I offered to leave my goods in security for payment of my freight, but the captain protested he would not receive one farthing. We took kind leave of each other, and I made him promise that he would come to see me at my house in Red riff. I hired a house and a guide for five shillings which I borrowed from the captain.

Q.35) On the voyage, the author

a) left the ship at intervals
b) was not able to leave the ship because it did not stop
c) never left the ship at all
d) never left the ship till they came into the Downs

Q.35) Solution (d)

Author has mentioned in third line of passage 'I never went out of the ship till we came into the Downs' So, statement of option (d) is clearly written and hence the obvious choice.