ICSE GEOGRAPHY

Solution

1. a. i. Triangulated height 307- 859843.
   ii. The spot height 196- 835916.

   b. i. The confluence of the Sipu River and Mahadeviyo Nala- 8189.
   ii. Sheet rock-8088/8188.

   c. The shortest distance between the temple in grid square 8590 and the perennial lined well at Bhakodar 8188 on the map is 8.6 cm.
   Scale- 2 cm = 1 km
   Therefore, 8.6 ÷ 2 = 4.3 km is the shortest distance on the ground.

   d. i. Black curved line in 7788- Broken grounds.
   ii. The blue line in the bed of the Sipu River-Seasonal stream with water channel.

   e. i. The general pattern of settlement is compact or nucleated.
   ii. Huts are closely located in groups.

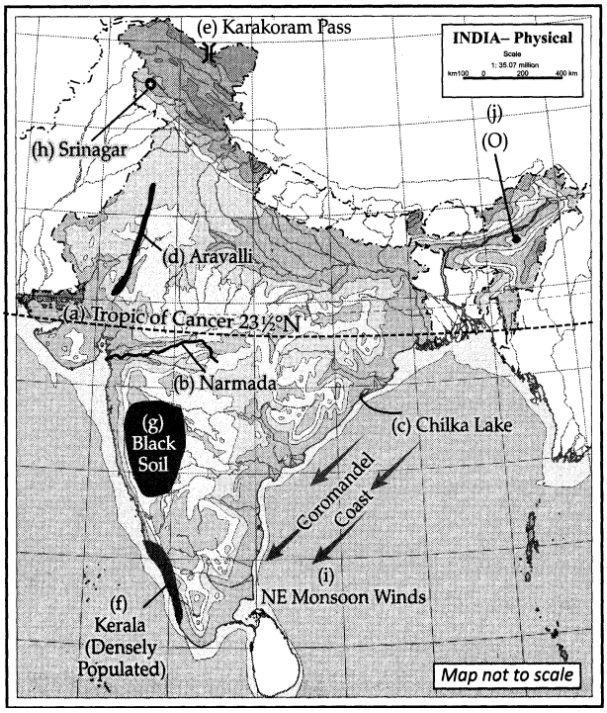
   f. The chief form of irrigation is the Lined perennial well. It is necessary because the river and the rainfall are seasonal.

   g. i. Chief mode of transport is Cart track.
   ii. A large number of red lines are crisscrossing the entire map.

   h. i. South-east.
   ii. Towards South-west.

   i. i. Radial.
   ii. 25r is the relative depth of the lined perennial well which is 25 metres.

   j. i. R.F. stands for Representative Fraction. It is the ratio between the distance on the map to the distance on the corresponding ground and is in fraction. The numerator denotes the length on the map and the denominator denotes the actual distance on the ground. E.g. 1:50,000.
   ii. RF is 1 : 50,000.

2. 

3. The first state that receives monsoon is Kerala. Kerala lies on the South-West of India from where the Arabian Sea branch of the South-West monsoon enters India.

4. i. Shillong lies on the Rain shadow area or the Leeward Side of the Khasi Hills while Cherrapunji lies on the Windward Side.
   ii. The moisture laden winds coming from the Bay of Bengal branch gets entrapped in the Garo-Khasi Hills and causes heavy rainfall.

5. i. The mountain slopes are cooler than the plains during summer due to the normal lapse rate i.e. with every 165 metres of ascent there is a fall of $1^{o}C$ of temperature.
   ii. Mumbai is warmer than Kanpur in December because Mumbai is a coastal city and has the influence of the sea which results in a moderate climate. Kanpur is located in the interior of the continent far away from the influence of the sea.
   iii. Rajasthan receives very little rainfall because Aravalli Hills lie parallel to the South-West Monsoon winds coming from the Arabian Sea branch and it is in the rain shadow region of Aravallis for the winds coming from the Bay of Bengal.

6.

Summer Monsoon	Retreating Monsoon
Wind blows from June to September.	Wind blows from October to November.
Wind travels from sea to land.	Wind travel from land to sea.
Carries moist wind.	Carries dry wind.
Higher temperature with higher humidity.	Higher temperature with lower humidity.

7. Removal or destruction of top soil is called soil erosion.
   Any two of the following:
   Measures to prevent Soil erosion:
   i. **Afforestation and Reafforestation:** Afforestation means planting trees in an area where there was never a forest or plantation; it's a method to create a new forest and Reafforestation means planting of trees in lieu of the number of trees being cut adopting the ratio as 2 : 1. Because of this, the roots of trees and plants hold soil together, reducing speed of running water, enabling water to get absorbed in the soil. Trees also reduces the force of winds, preventing the blowing away of soil particles.
   ii. **Restricted grazing of animals:** Animals should be spread out to different pastures and fodder crops should be grown in large quantity.
   iii. **Construction of dams:** In order to check the speed of river water and control river floods, constructing dams also saves soil from erosion.
   iv. **Proper farming techniques-**
      a. **Crop rotation:** It is a system of farming in which farmers grow crops cyclically to minimise consumption of particular nutrients from the soil, thus maintaining fertility of land.
      b. **Contour ploughing:** Contours act like bunds. Ploughing along contours across the slope of the land prevents soil being washed away by rainwater or by surface run-off.
      c. **Terrace farming:** Hill slopes are cut into a number of terraces having horizontal top and steep slopes on the back and front. It is a very effective and one of the oldest methods of soil conservation.
      d. **Strip cropping:** In this system, large fields are divided in strips and grass is grown between the crops which reduces wind velocity and protects the top soil from erosion.
      e. **Shelter bells:** When trees are planted in rows to create shelters along sand dunes, these rows are called Shelter belts. They help stabilizing sand dunes and prevent the desert to extend into land available for farming. It's a way of soil conservation. (Any two)

8.

Alluvial Soil	Black Cotton soil
These soils are formed by the deposition of silts and sediments brought down by the rivers.	These soils are formed by the weathering of lava flow rocks or igneous rocks.
The soil is very fertile and rich in mineral nutrients like Potash and Lime.	The soil becomes sticky and needs to be tilled immediately after the first rain.

9. Soil Conservation is the effort made by man to prevent soil loss from erosion or reduced fertility caused by over usage.
   Re-afforestation is planting of trees in lieu of the number of trees being cut adopting the ratio 2 : 1. It helps as the roots of the trees planted again hold the soil tightly and prevents it from eroding.
10. i. Soil erosion is the displacement and removal of the upper layer of soil, a form of soil degradation.
    ii. **Two causes of soil erosion are:**
    - Deforestation has caused widespread erosion in Western Ghats, Uttar Pradesh, and Himachal Pradesh.
    - Slash and burn or shifting cultivation is practised in hill areas of North-East, Chota Nagpur, Odisha, Madhya Pradesh, and Andhra Pradesh. Vast areas have suffered an erosion of soil in hill areas of North- Easter states because of shifting cultivation.
11. i. Man is responsible for soil erosion because of large-scale deforestation done for agriculture/industrialisation/urbanisation.

ii. Deepening the river bed increases the capacity of the river to hold water which then will not overflow to cause soil erosion.
iii. It is red in colour/dry/porous/hardens when dry/coarse/does not retain moisture/soft and friable/colour varies from red to brown to yellow. (Any one)

12. i. They are dense and have a variety of trees and shrubs which make it difficult to exploit.
ii. Due to lack of proper transportation facilities.

13. i. Tropical Evergreen Forest
ii. Due to heavy rainfall of above 200 cm

14. i. The tropical monsoon forest is found in the Andaman and Nicobar Islands, the Western Ghats and the Coastline of peninsular India and also in Assam region of North-East India.
ii. The tropical monsoon forests contain several tree species of great commercial significance for example, teak, Indian rosewood, etc.

15. i. This is due to the non-availability of enough water for the growth of trees/they do not receive ample amount of rainfall for tree growth and vegetation.
ii. This is due to check on deforestation/banning shifting agriculture/government initiatives such as agro-forestry, farm forestry, social forestry, Van Mahotsav, afforestation, and re-afforestation. [Any one]
iii. This is due to the lack of sufficient moisture for leaves to withstand long dry weather conditions.

16. Characteristics of tropical dry deciduous forests are as follows:
i. These are found in areas of slightly lower rainfall between 70 to 100 cm with a more pronounced seasonality.
ii. Most of the trees shed their leaves during the long dry season.
iii. These are economically very important. Tropical dry deciduous forests and woodlands contribute to the direct provision of numerous products, including timber and non-timber forest products.

17. i. The Delta of the Ganga river - Mangrove Forests / Tidal Forests.
ii. The Windward side of the Western Ghats - Tropical Evergreen Forests.
iii. The Deccan Plateau - Tropical Deciduous Forests.

18. i. Tropical Evergreen forests.
ii. Western slopes of Western Ghats, Coast of Tamil Nadu and Odisha.

19. i. Mangrove forest/vegetation.
ii. The deltaic tracts of Ganga, Godavari, Krishna, Kaveri and Mahanadi.

20. The type of irrigation in which water is shot from high pressure sprayers onto the crops through a long hose pipe.

21. It refers to the efficient management and conservation of both the surface and groundwater resources.

22. System of catching and conserving rainwater where it falls that includes both natural and man-made surface for its eventual reuse.

23. Deccan Plateau is made up of hard impermeable rock which does not allow the rainwater to percolate underground. The Deccan Plateau is highly dissected and so has many natural hollows and depressions.

24. Water beneath the surface of Earth which saturates the pores and fractures of sand gravel and rock formation.

25. Two modern methods of irrigation are:
Drip Method: This is the best modern method of irrigation as in this method water is directly given to the crops through perforated pipes. This reduces the evaporation, and each crop can be irrigated according to its nature.
Spray Irrigation: In this method, water is utilized more efficiently. Hence, the amount of water needed to irrigate a field reduces considerably.
They are becoming popular because there is minimum loss of water and can irrigate fields throughout the year.

26. i. Sprinkler Irrigation is practiced in arid and semi-arid regions because it is water-saving as there is no loss of water through seepage or evaporation/its high water use efficiency.
ii. A tube well should be installed in a fertile and productive region because it is able to irrigate a larger agricultural land and a large amount of underground water is easily available.
iii. Canal irrigation is most suitable in the Northern Plains because the Northern plains have a good network of perennial rivers that supply water to the canals throughout the year.

27. i. It is a technique of increasing the recharge of groundwater by capturing and storing rainwater or technology used to conserve rainwater by collecting, storing, conveying, and purifying rainwater that runs off from rooftops, parks, roads, open grounds, etc. for later use.
ii. Two objectives of rainwater harvesting are as follows:
a. To make water available for future use.
b. To avoid flooding of roads.

28. i. The advantage of Tank Irrigation are:
    a. It is inexpensive as they are mostly natural depressions.
    b. It is highly beneficial in the uneven rocky plateau of Deccan because the lake bed is impermeable.
    c. It is highly significant because it stores the abundant rainwater and reduces the waste of the excessive flowing water. [Any one point]

    Tank irrigation is commonly used in South India like Andhra Pradesh, Telangana, etc.

    ii. Tube wells are deeper wells from where the water is lifted from a great depth of 20-30 m by the use of Power pumps.

    It is reliable during the dry season when the surface water dries up since the tubewell is drilled deep up to the permanent water table.

    iii. Drip irrigation supplies the water to the roots of the plants slowly through pipes, valves, tubing, etc., and thus saves water and fertilizer. This helps in the reduction of evaporation.

29. i. The picture shows to save the precious water on the Earth.
    ii. We can do various things to save water such as:
        a. Recycle and reuse water.
        b. Use rainwater harvesting system to avoid rainwater runoff.

30. Manganese is used to make Steel tough, hard and rust resistant and that's why it is an important raw material for Iron and Steel Industry.
31. Industrial use of Aluminium - raw material for Manufacture of Aircrafts/Automobile/Electronic goods/Utensils. [Any one]
32. It leads to pollution/it is exhaustible/it is Non-renewable/heavy transport cost/problem of disposal of residue/health hazard. [Anyone]
33. Four coal producing states are Jharkhand, Meghalaya, Assam and Nagaland.
34. Two states in India where Manganese is found are: Odisha, Karnataka, Madhya Pradesh, Maharashtra, Andhra Pradesh, Goa, Telangana, Jharkhand and Rajasthan. [Any two]

    One use of Manganese:

    i. It is used in manufacture of Chemical and Electrical Equipment.
    ii. It is used to manufacture Coloured Glass.
    iii. It is used in chemical industries for Manufacturing bleaching powder.
    iv. It is used in Dry cell batteries.
    v. Manganese is also used to manufacture Vital Enzymes for the Metabolism of Fats and Proteins. [Any one use]

35. i. Odisha and Karnataka.
    ii. It is used to improve the quality of many alloys e.g. iron and steel.
36. i. Haematite and Magnetite are the two types of Iron ore mined in India.
    ii. **Uses of Copper :**
        a. Copper is a good conductor of electricity, it is used for making electric wires.
        b. It is also used in automobiles and in defence industries.
37. i. Oil Refineries are located close to an oilfield or in a Coastal City because-
        i. To minimise the cost of transport as crude oil is imported from other countries.
        ii. To avoid transportation of mineral oil to the interior places of the country as it is highly inflammable.

    ii. One Oil Refinery in the Private Sector is Jamnagar Refinery in Gujarat owned by Reliance Petroleum Limited.
38. i. Cement - Limestone.
    ii. Aluminium - Bauxite.
    iii. Synthetics - Mineral oil.
39. i. The dam given in the picture is Bhakra Nangal Dam.
    ii. The main aim of this dam was to prevent floods in the Sutlej Beas river valley to provide irrigation to nearby states and to generate electricity. Tourism has become very popular due to the artificial Gobind Sagar Lake Reservoir of Bhakra Dam. Many water sports such as fishing and boating, have attracted people from all over the world.
40. It is a process of separation of Cotton fibre from the Cotton seed.
41. In Rabi season i.e. winter wheat is grown in Northern India. Its cultivation is practised best in well drained, fertile, loamy, alluvial soils of clayey type. In India, it is mainly grown in flat alluvial plains of North India.
42. The advantages of the Transplantation Method are:
    i. It enables the selection of only healthy seedlings for the plants.

ii. Less wastage of seeds.
iii. It minimizes weed pressure by resowing.
iv. It gives a higher yield. [Any three]

43. i. Rice. It enables deeper penetration of the roots in the soil and gives higher yield.
ii. a. Temperature: 18°C - 32°C
b. Rainfall: 150 cm - 300 cm
c. Soil: Deep fertile clayey or loamy soils

44. Cottage Industries are significant for our economy because
i. Provide employment
ii. Brings in foreign exchange
iii. Need less built-up area
iv. Can be started with less Capital Investment
v. Uses local raw material
vi. Keeps the traditions alive from one generation to another
vii. Fulfil local need
viii. low cost of transport (Any one)

45. i. The Maritime Climate of Maharashtra which is free from loo and frost.
ii. The availability of black soil which is well drained and more fertile than Alluvial soil.
iii. Excellent transport facilities in Maharashtra has given it an advantageous position in relation to export markets.
iv. The Sugar Factories are located close to the sugarcane farms which prevent the loss of sucrose content due to minimum transportation time.
v. The Farmers have new machinery and crushing devices which ensures high yield. [Any two points]

46. i. Sugarcane must be crushed within 24 hours of harvesting because sugarcane is a perishable commodity it should be processed into sugar quickly after it is harvested. After harvesting the sucrose content in the cane begins to decrease when left out in the heat.
ii. Four sugar milling centres in the Northern plains are Saharanpur, Meerut, Muzaffarnagar, and Baghpat.

47. Yamuna Expressway connects Agra and Noida.

48. The water bodies like rivers, canals, lakes, backwaters and creeks which are deep enough to provide the safe navigation of boats and ships are included in inland waterways. Inland Waterways Authority of India (IWAI) is the statutory authority which was constituted on 27th October, 1986.

49. i. The railway is an important means of transport as compared to airways because:
a. It carries bulky raw materials and heavy goods. Railway transport is economical, quicker, and best suited for carrying heavy and bulky goods over long distances.
b. Can carry more amount of goods. The carrying capacity of the railways is extremely large. Moreover, its capacity is elastic which can easily be increased by adding more wagons.
ii. The disadvantage of Rail transport is:
a. Delays: The disadvantage of railway transport is its inflexibility. Its routes and timings cannot be adjusted to individual requirements.

50. i. This means of transport is most popular in the Northern plains.
ii. The first commercial train journey was started in 1853 from Mumbai to Thane.

51. Asthma and Bronchitis.

52. Hazardous waste is waste material, often in chemical form that comes from agriculture, radioactive sources and industries. This can pose a long-term risk to health and environment.

53. i. Agriculture waste and industrial waste are two sources of waste.
ii. Biodegradable wastes are the object which decomposes through the action of bacteria, fungi and other living organisms.

54. Waste accumulation affects the environment in many ways:
i. Causes land pollution.
ii. Affects terrestrial and aquatic life adversely.
iii. Leads to health hazards like cholera, dysentery, typhoid, etc., due to the growth of bacteria in the water.
iv. landscape degeneration, and chokes the drainage system.
v. soil contamination.

vi. air pollution.

vii. water and soil pollution.

55. Landfill is a way of disposing of waste materials in a pit that is dug in the ground without creating hazards to public health or safety. The waste is packed and dumped at the site and is covered with soil daily to prevent insects or rodents from entering into the landfill. Landfills are located, designed, operated, and monitored to ensure compliance with federal regulations. They are also designed to protect the environment from contaminants, which may be present in the waste stream.

56. i. The given logo is of three R's i.e. Reduce, Reuse and Recycle.

ii. The methods of waste recycling are as follows:

Paper Recycling: In the process of paper recycling, the waste paper which are produced from households, offices, schools, etc are used to make new fresh paper. Pieces of wood from the furniture industry, used and discarded cloth are also recycled.

Plastic Recycling: It is the process of recovering scrap or waste plastics from the cities and reprocessing the material into useful products, sometimes completely different in form, from their original product, e.g. soft drink bottles casted into plastic chairs and tables.

57. i. Recycling of paper.

ii. Two advantages of paper recycling are as follows:

a. The waste paper which are produced from housholds, offices and schools are reused to make fresh paper.

b. It creates jobs where people are employed to collect, sort and work in paper recycling process.

58. Identify and name the following:

(i) 1. North-East Monsoon winds

(ii) 1. Manganese
2. Copper
3. Bauxite

(iii) 1. Bhakra Nangal Dam
2. Bhakra Nangal project

(iv) 1. Jharia

(v) 1. Aero Engines

(vi) 1. Haldia

59. Give suitable reason for the following statements:

(i) Jaipur is situated in the interior part of the country, far away from the influence of the sea while Mumbai is a coastal city and is influenced by sea. Thus, Jaipur has a higher annual range of temperature than Mumbai.

(ii) Western coastal plains receive more rainfall because the Western Ghats check the south-west moisture laden winds to cause heavy relief rainfall. These plains are on the Windward side of the Western Ghats.

(iii) Mangaluru has a Coastal location, but Delhi lies in the Interior. Due to distance from the sea, Mangalore is cooler than Delhi in summer.

(iv) The growth of population has resulted in water scarcity.

(v) Being in Deccan region Karnataka has natural depressions and hard sub surface rocks which make Tank Irrigation important.

(vi) Due to high content of salt present in the water, water supply from the Seas and the Oceans is Unfit for Drinking Purpose.

(vii) The Hirakud project generates power/provides water for irrigation for both the kharif and Rabi crops/controls floods on the River Mahanadi/soil conservation/fish culture/industrial growth/water supply/inland waterways. [Any one]

(viii) India lies between 8^{o}N and 37^{o}N with the Tropic of Cancer running through it and so receives a lot of sunlight with around 300 clear days in a year. This is advantageous for the generation of Solar Power.

(ix) Copper is a good conductor of electricity/is ductile and malleable and so is used to make electric wires. [Any one]

(x) As the Mills are closer to the fields, hence there is less loss of sucrose content/ use of better quality cane/larger Farms, hence Mechanized Farming is possible/co-operative farming is practiced, ensuring a better yield with better seeds, increased use of better fertilizers, better irrigation method and better crop protection measures/Frost free growing season/tapering shape of peninsular- Sea breeze/Longer crushing season/regur soil responsible for better yield. [Any one point]

(xi) Petrochemicals are used to create most of the everyday items we use, from vehicles to a variety of electronics. Petroleum is also the Raw material for many chemical products, including Pharmaceuticals, Solvents, Fertilizers, Pesticides, Synthetic fragrances, and Plastics.

(xii) The Northern Rivers are more suitable for navigation than the Deccan Rivers because:

- The Northern Rivers are perennial in nature whereas the Deccan Rivers are seasonal in nature.
- The middle and lower courses of Northern rivers are navigable for long distances as they flow over gentle sloping lands. Most of the Deccan rivers are swift flowing due to uneven land and are navigable only at lower course. [Any one point]