ICSE Class 10 Geography Specimen Paper 2

Written by the Future Topper subject team on the CISCE examination pattern. Not an official CISCE paper.
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Maximum Marks: 80 | Time Allowed: Two hours | Reading Time: 15 minutes

Part I is compulsory. Attempt any five questions from Part II.

General Instructions

Write your answers on the separate answer paper provided. The first 15 minutes are for reading the paper, and you may not write during that time. Marks for each question, or part of a question, are shown in brackets. Part I carries 30 marks and all of it must be attempted. In Part II you must attempt any five questions, each of which carries 10 marks. Question 1 must be answered from the Future Topper Topographical Sheet Extract FT-2 printed on page 2 of this paper; the extract is an original map drawn for practice and is not a Survey of India sheet, but it uses the conventional signs of an Indian topographical sheet at the scale of 1:50,000, so that two centimetres on the map stand for one kilometre on the ground and every grid square measures one square kilometre. Question 2 must be answered on a standard school outline map of India, which you should mark neatly in pencil and fasten to your answer booklet. All distances on the extract are to be measured with a ruler and a length of thread, and all directions are to be given from the north line of the grid.

PART I (30 Marks)

Attempt all questions from this Part.

Question 1 [10]

Study the extract of Future Topper Topographical Sheet FT-2, printed on page 2, and answer the following questions.

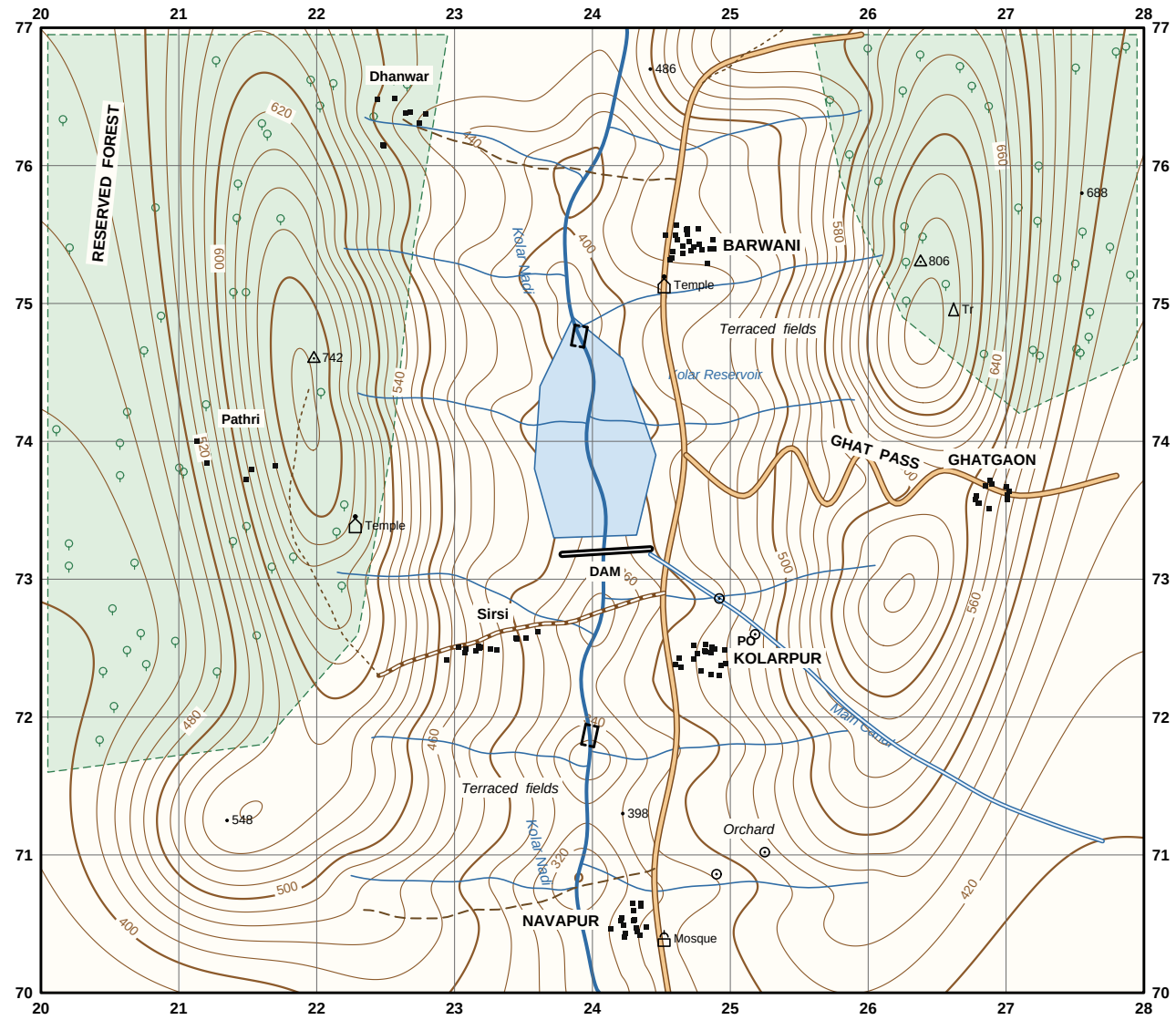
(i) (a) Give the six-figure grid reference of the dam built across the Kolar Nadi. (b) Name the drainage pattern formed by the Kolar Nadi and its tributaries in grid square 2374. **[2]**

(ii) (a) What is the contour interval of this extract? (b) Give the height of the highest triangulated point shown on the eastern ridge, and its six-figure grid reference. **[2]**

(iii) (a) Measure the straight-line distance, in kilometres, between Barwani (247754) and Kolarpur (248724). (b) In which compass direction does Ghatgaon lie from Barwani? **[2]**

(iv) (a) The metalled road east of Kolarpur is drawn with a series of sharp bends between eastings 25 and 26. Give one reason for this. (b) Name the feature in the eastern ridge that this road uses to cross from one side to the other. **[2]**

(v) (a) Give two pieces of evidence from the extract which show that the people of this region practise settled farming. (b) State one way in which the dam has helped the farmers of Kolarpur. **[2]**



CONVENTIONAL SIGNS USED ON THIS EXTRACT

200 Contour with value, interval 20 m	Cart track	Well
Index contour (every 100 m)	Footpath	Tr Tower
366 Triangulated height	Railway line	Reserved forest
• 214 Spot height	RS Railway station	Fire line
Stream with sandy bed	Causeway	Broken ground
Tributary stream	Bridge	Sand in a river bed
Tank with embankment	Village site, each square a hut	Open scrub; land use named in words
Metalled road	Temple	Grid line, 1 km square
Unmetalled road	Mosque	

FUTURE TOPPER TOPOGRAPHICAL SHEET EXTRACT FT-2 | Scale 1:50,000 | Contour interval 20 metres | Each grid square is one kilometre square (2 cm on the map). Eastings are printed along the top and bottom of the extract and northings along the sides. This is an original map drawn by Future Topper for practice. It is not a Survey of India map sheet and it does not show any real place.

Question 2 [10]

On a standard school outline map of India, mark and label the following. Use arrows where the map is crowded, and write the name of every feature you mark.

(i) Shade and label the Chota Nagpur plateau. [1]

(ii) Mark and name the river Godavari. [1]

(iii) Shade and label an area of black soil in the Deccan. [1]

(iv) Mark with a single arrow the direction of the north-east monsoon over the Bay of Bengal. [1]

(v) Mark and name the Nathu La pass. [1]

(vi) Shade and label the state that leads India in the production of sugarcane. [1]

(vii) Mark and name the Standard Meridian of India. [1]

(viii) Mark with a dot and name the port of Paradip. [1]

(ix) Shade and label an area which receives less than 50 centimetres of rainfall in the north-west. [1]

(x) Mark and name the coalfield of Jharia. [1]

Question 3 [10]

Choose the correct answer. Write only the number of the part and the letter of your answer.

(i) The northern plain of India is largely made up of
(a) lava (b) alluvium (c) sandstone (d) granite [1]

(ii) A planter wants a soil that is acidic, well drained and deep for a tea garden. He should look for
(a) black soil (b) alluvial soil of the delta (c) laterite and hill soil (d) desert soil [1]

(iii) Which of the following pairs is correctly matched?
(a) Hirakud — Mahanadi (b) Bhakra Nangal — Krishna (c) Tungabhadra — Narmada (d) Damodar Valley — Kaveri [1]

(iv) Assertion (A): Tube wells are widely used in the Punjab.
Reason (R): The Punjab has a deep layer of soft alluvium and a high water table.
(a) Both A and R are true, and R is the correct explanation of A (b) Both A and R are true, but R is not the correct explanation of A (c) A is true but R is false (d) A is false but R is true [1]

(v) The forest in which trees shed their leaves for six to eight weeks in the dry season is the
(a) tropical evergreen forest (b) tidal forest (c) alpine forest (d) monsoon deciduous forest [1]

(vi) Bauxite is the ore from which we obtain
(a) copper (b) aluminium (c) manganese (d) mica [1]

(vii) A crop needs a temperature of 25°C to 35°C, 50 to 100 cm of rain, bright sunshine while ripening, and black soil. The crop is
(a) tea (b) rice (c) cotton (d) jute [1]

(viii) The industry which needs bauxite and a very large supply of cheap electricity is the
(a) cement industry (b) paper industry (c) cotton textile industry (d) aluminium industry [1]

(ix) Which of these is a disadvantage of inland waterways in India?
(a) They are costly to build (b) They pollute the air heavily (c) Many rivers are seasonal and silted (d) They cannot carry heavy goods [1]

(x) The three Rs of waste management are
(a) remove, refill, restore (b) reduce, reuse, recycle (c) reject, repair, return (d) rebuild, refuse, replace [1]

PART II (50 Marks)

Attempt any five questions from this Part.

Question 4 [10]

Climate of India.

(i) Name the two branches into which the south-west monsoon divides, and name one state watered chiefly by each. [2]

(ii) Give one reason for each of the following: (a) The Western Ghats receive heavier rain on their western slopes than on their eastern slopes. (b) Thiruvananthapuram is warmer in December than Lucknow. [2]

(iii) Study the climate data of Station Y given below and answer the questions that follow.
Temperature (°C): January 14.4, April 30.0, June 33.5, July 31.0, December 17.2.
Rainfall (cm): January 2.5, April 1.0, June 7.4, July 19.8, August 17.6, December 0.9. Total annual rainfall 64.0 cm.
(a) Calculate the annual range of temperature of Station Y. (b) Name the month with the highest rainfall. (c) Is Station Y an inland station or a coastal station? Give one reason for your answer. [3]

(iv) Explain briefly: (a) what is meant by a western disturbance; (b) why the Mawsynram area gets exceptionally heavy rain; (c) why October and November are months of high humidity and discomfort in northern India. [3]

Question 5 [10]

Soils of India.

(i) State two differences between in-situ soil and transported soil, naming one example of each. [2]

(ii) What is meant by sheet erosion, and state one condition under which it takes place? [2]

(iii) Explain, with reasons, why black soil needs careful handling in the rainy season, and state two steps a farmer can take to work it properly. [3]

(iv) Give a reason for each of the following: (a) Alluvial soil is the most widespread soil in India. (b) Laterite soil is used in making bricks. (c) Desert soil is poor in humus. [3]

Question 6 [10]

Natural vegetation of India.

(i) Name the type of forest found at a height of 1500 to 3000 metres in the Himalaya, and name one tree found in it. [2]

(ii) State two commercial uses of the tropical monsoon forest. [2]

(iii) Explain the term deforestation, and state two effects it has on the land and on the climate of a region. [3]

(iv) Give a reason for each of the following: (a) Mangrove forests are found in deltas. (b) Conifers have cone-shaped crowns and needle-like leaves. (c) The forest cover of India is below the target laid down in the National Forest Policy. [3]

Question 7 [10]

Water resources and irrigation.

(i) State two advantages of a multipurpose river valley project. [2]

(ii) Name the method of irrigation shown by each of the following, and name one region where it is used: (a) water drawn from a deep boring by an electric pump; (b) water stored in a natural hollow and led to the fields through channels. [2]

(iii) Explain why the water table is falling in many parts of north-western India, and state two measures that can be taken to raise it. [3]

(iv) Give a reason for each of the following: (a) Inundation canals are of little use in the dry season. (b) Tank irrigation is common in the Deccan. (c) Water from a canal is cheaper for a farmer than water from a tube well. [3]

Question 8 [10]

Minerals and energy resources.

(i) Name two states which produce bauxite, and state one use of aluminium. [2]

(ii) Distinguish between a conventional and a non-conventional source of energy, naming one example of each. [2]

(iii) Explain how hydel power is generated, and state two conditions necessary for setting up a hydel power station. [3]

(iv) Give a reason for each of the following: (a) Mica is used in the electrical industry. (b) Wind energy is being developed on the coast of Tamil Nadu. (c) Biogas is suited to a village that keeps cattle. [3]

Question 9 [10]

Agriculture in India.

(i) State two geographical conditions required for the growing of rice. [2]

(ii) Name the leading state in the production of tea, and state one reason why the crop does well there. [2]

(iii) Explain the difference between subsistence farming and commercial farming, and state one problem faced by the Indian farmer who practises subsistence farming. [3]

(iv) Give a reason for each of the following: (a) Pulses are grown in rotation with cereals. (b) Cotton picking is still done by hand in India. (c) Tea bushes are pruned regularly. [3]

Question 10 [10]

Industries in India.

(i) State two reasons why the jute industry is concentrated in the Hooghly basin. [2]

(ii) Distinguish between an agro-based and a mineral-based industry, naming one example of each. [2]

(iii) Explain why the iron and steel industry of India is concentrated in the north-eastern part of the Peninsular plateau, giving three reasons. [3]

(iv) Give a reason for each of the following: (a) The cotton textile industry is spread all over India. (b) Paper mills are set up near forests or near sugar mills. (c) Small-scale industries are important for employment in India. [3]

Question 11 [10]

Transport and communication.

(i) State two advantages of road transport over rail transport. [2]

(ii) Name any two major ports on the western coast of India and name one item exported from each. [2]

(iii) Explain why the development of transport is important for the growth of industry, giving three points. [3]

(iv) Give a reason for each of the following: (a) The Konkan Railway was difficult and costly to build. (b) The north-eastern states have few railway lines. (c) Containers have made sea trade quicker and cheaper. [3]

Question 12 [10]

Waste generation and management.

(i) Define the term biodegradable waste and give two examples of it. [2]

(ii) State two reasons why the quantity of waste produced in Indian cities has grown so fast in recent years. [2]

(iii) Explain the meaning of composting and describe briefly how it is carried out in a pit. [3]

(iv) A factory discharges untreated effluent into a nearby river. (a) State two effects this will have on the river and on the people who use it. (b) Suggest one step the factory should be made to take. [3]

ANSWER KEY AND MARKING SCHEME

Marks shown in italics are the step marks an examiner would award. In Question 1 a measured distance within two tenths of a kilometre of the value given should be accepted in full. In Question 2 credit the mark if the feature is placed correctly and named, even where the shading is untidy. Elsewhere accept any correct point of equal value, and credit a candidate who gives the substance of the answer in different words.

Question 1 [10]

(i) (a) 241732. The dam is the heavy black line drawn across the Kolar Nadi, with the reservoir held back behind it to the north. (b) **Trellis drainage.** The tributaries run down the slopes of the two ridges and join the main river almost at right angles, and the main river itself runs along the valley between the ridges.

Grid reference, all six figures correct 1. Trellis 1.

(ii) (a) **20 metres.** (b) The highest triangulated point on the eastern ridge is **806 metres**, at 264753.

Contour interval 1. Height with its grid reference 1.

(iii) (a) About **3 kilometres** (2.8 to 3.2 km). On the map the two settlements are about 6 cm apart, and 2 cm stands for 1 km. (b) Ghatgaon lies to the **south-east** of Barwani.

Distance within 0.2 km 1. Direction 1.

(iv) (a) The ground here rises steeply, as the closely spaced contours show. A road cannot climb a steep slope directly, so it is taken up in a series of hairpin bends, which lengthens the road but eases the gradient for vehicles. (b) It crosses the ridge through the **pass**, marked on the extract as Ghat Pass, which is the lowest point, or saddle, in the ridge.

Steep slope and easier gradient 1. Pass or saddle named 1.

(v) (a) Any two of: the terraced fields marked on the hill slopes; the orchard south-east of Kolarpur; the wells; the canal taken out from the reservoir; the permanent compact villages joined by metalled and unmetalled roads. (b) The dam stores the water of the Kolar Nadi in the reservoir, and the main canal taken from it carries water to the fields near Kolarpur, so the farmers can irrigate in the dry season and need not depend on the rain alone. (Flood control and a supply of drinking water may also be credited.)

Any two pieces of evidence, 1/2 each 1. Irrigation from the reservoir through the canal 1.

Question 2 [10]

One mark for each feature correctly marked and named.

(i) The Chota Nagpur plateau shaded in Jharkhand and the neighbouring parts of Odisha and Chhattisgarh.

Correct area 1.

(ii) The Godavari drawn from the Western Ghats near Nashik, flowing south-east across the Deccan to its delta on the Bay of Bengal, and named.

River correctly drawn and named 1.

(iii) Black soil shaded over the lava plateau of Maharashtra, western Madhya Pradesh or northern Karnataka.

Correct area 1.

(iv) An arrow drawn over the Bay of Bengal pointing from the north-east towards the Tamil Nadu coast.

Arrow in the correct direction 1.

(v) Nathu La marked in the eastern Himalaya, on the border of Sikkim with Tibet.

Correct position 1.

(vi) Uttar Pradesh shaded and named.

Uttar Pradesh 1.

(vii) The Standard Meridian drawn as a line of longitude at 82 degrees 30 minutes east, running through Mirzapur, and named.

Line correctly placed and named 1.

(viii) Paradip marked with a dot on the coast of Odisha and named.

Correct position 1.

(ix) An area of less than 50 cm of rain shaded in western Rajasthan or in Kachchh.

Correct area 1.

(x) Jharia marked in Jharkhand, in the Damodar valley, and named.

Correct position 1.

Question 3 [10]

(i) (b) alluvium, brought down and laid by the Indus, the Ganga and the Brahmaputra and their tributaries.

Correct option 1.

(ii) (c) laterite and hill soil.

Correct option 1.

(iii) (a) Hirakud — Mahanadi.

Correct option 1.

(iv) (a) Both A and R are true, and R is the correct explanation of A.

Correct option 1.

(v) (d) monsoon deciduous forest.

Correct option 1.

(vi) (b) aluminium.

Correct option 1.

(vii) (c) cotton.

Correct option 1.

(viii) (d) aluminium industry.

Correct option 1.

(ix) (c) Many rivers are seasonal and silted.

Correct option 1.

(x) (b) reduce, reuse, recycle.

Correct option 1.

Question 4 [10]

(i) The **Arabian Sea branch**, which waters Kerala, Karnataka, Goa, Maharashtra and Gujarat, and the **Bay of Bengal branch**, which waters West Bengal, Assam, Bihar and the rest of the Ganga plain.

Both branches named 1. One state for each 1.

(ii) (a) The western slopes face the Arabian Sea branch of the monsoon and force it to rise, so it cools and sheds heavy relief rain; the eastern slopes lie in the rain shadow, where the descending air is warmed and holds its moisture. (b) Thiruvananthapuram lies close to the equator, so the sun is nearly overhead through the year, and it is on the coast, where the sea keeps the winter mild; Lucknow lies far north and inland and is reached by cold northerly winds in winter.

Windward and rain shadow 1. Latitude with maritime influence 1.

(iii) (a) Annual range of temperature = 33.5 − 14.4 = **19.1°C**. (b) **July**, with 19.8 cm. (c) Station Y is an **inland** station. Its annual range of nearly 20 degrees is far too great for a coastal station, where the sea would hold the range down to about 7 or 8 degrees; the low total rainfall of 64 cm, concentrated in July and August, also points inland.

Range worked out correctly 1. July 1. Inland, with the large range as the reason 1.

(iv) (a) A western disturbance is a low pressure system, or cyclonic depression, that forms over the Mediterranean Sea and travels eastwards across Iran and Pakistan into north-western India in winter, bringing light rain and sometimes snow in the hills. (b) Mawsynram lies at the head of a funnel-shaped valley in the Khasi hills; the moist Bay of Bengal winds are drawn into the funnel, forced to rise sharply and shed their moisture, giving over 1000 cm of rain in a year. (c) The monsoon has retreated but the land is still hot and the soil is soaked with the rain of the previous months, so a great deal of water evaporates into the still air, and the hot damp weather is called October heat or the Kartik heat.

Mediterranean depression described 1. Funnel-shaped valley 1. Heat with high humidity after the rains 1.

Question 5 [10]

(i) In-situ, or sedentary, soil is formed where it lies, by the weathering of the rock beneath it, so it resembles the parent rock; black soil and red soil are examples. Transported soil is carried from elsewhere by rivers, wind or ice and laid down in a new place, so it may be quite unlike the rock beneath it; alluvial soil and loess are

examples.

Difference in the way each is formed 1. One example of each 1.

(ii) Sheet erosion is the removal of a thin and fairly even layer of topsoil over a wide area by a sheet of running water. It takes place where the land is gently sloping and bare of vegetation, and where heavy rain falls on soil that has no cover of plants or crop residue to hold it.

Thin layer removed over a wide area 1. One condition 1.

(iii) Black soil is made of very fine clay. When it is wet it becomes sticky and almost impossible to plough, and the water cannot sink through it quickly, so the fields become waterlogged; when it dries it shrinks and cracks deeply. The farmer should therefore plough it immediately after the first shower, while it is still soft but not waterlogged, and should provide drainage channels in the field so that standing water is carried away. Deep ploughing in the dry season to break the clods, and the use of the cracks to let air into the soil, may also be credited.

Reason why wet black soil is difficult to work 1. Two steps, 1 mark each 2.

(iv) (a) It covers the whole of the great Northern Plain and the deltas and coastal plains of the Peninsula, which together make up about two fifths of the area of the country. (b) Laterite is soft when it is dug and hardens on exposure to air, so it can be cut into blocks and used at once for building. (c) The desert has very little vegetation, so little plant matter falls on the soil, and the high temperature burns up what little there is.

Extent of the plains and deltas 1. Hardens on exposure 1. Lack of vegetation 1.

Question 6 [10]

(i) The **temperate or coniferous forest**. Trees found in it are the pine, the deodar, the chir, the spruce, the silver fir and the cedar. (Between 1500 and 2400 metres wet temperate forests of oak, chestnut and ash are also found and should be accepted.)

Forest named 1. Tree named 1.

(ii) Any two of: teak, sal and sandalwood give hard and durable timber for furniture, railway sleepers, boats and building; the bark of some trees is used for tanning leather; lac, resin, gum, honey and medicinal herbs are collected; bamboo and softwoods supply paper and plywood mills; sandalwood yields oil.

Two commercial uses, 1 mark each.

(iii) Deforestation is the clearing or cutting of forest on a large scale, so that the land is left without its tree cover. Its effects on the land: the roots no longer bind the soil, so rain washes it away, gullies form, rivers silt up and floods become worse, and the land may in time turn into waste. Its effects on the climate: there is less transpiration, so the air becomes drier and rainfall may fall off; less carbon dioxide is taken up, so the air grows warmer; and the local range of temperature increases.

Deforestation defined 1. One effect on the land 1. One effect on the climate 1.

(iv) (a) The delta is flooded by salt water at high tide and the mud is soft and waterlogged; the mangrove can live in salt water and sends up breathing roots and stilt roots that hold it in the soft mud. (b) The cone shape lets the snow slide off instead of breaking the branches, and the needle-like leaves have a small surface and a waxy coat, which checks the loss of water when the ground is frozen. (c) Any sound reason: the pressure of a growing population on land for farming and housing; felling for timber, fuel and industry; shifting cultivation; grazing; mining and the building of dams and roads.

Tolerance of salt water and soft mud 1. Shedding of snow or checking of water loss 1. One sound reason 1.

Question 7 [10]

(i) Any two of: it stores water for irrigation through the year; it generates hydel power; it controls floods downstream; it supplies drinking water to towns and water to industry; it makes navigation and inland fishing possible; it helps afforestation and recreation.

Two advantages, 1 mark each.

(ii) (a) **Tube well irrigation**, used widely in the Punjab, Haryana and western Uttar Pradesh. (b) **Tank irrigation**, used in Tamil Nadu, Andhra Pradesh, Telangana and Karnataka.

Tube well with a region 1. Tank with a region 1.

(iii) The water table is falling because far more water is drawn out by tube wells than the rain can put back. The Green Revolution brought in crops such as rice and sugarcane which need a great deal of water, electricity for

pumping is cheap or free, and the ground is built over and paved, so rain runs off instead of sinking in. Measures: make rain water harvesting compulsory and build recharge pits and check dams; change to less thirsty crops and to drip and sprinkler irrigation; line the canals to stop seepage losses and regulate the sinking of new tube wells.

Withdrawal greater than recharge, with one cause 1. Two measures, 1 mark each 2.

(iv) (a) An inundation canal is taken straight out of a river without any dam or barrage, so it carries water only when the river is in flood; in the dry season the river level falls below the mouth of the canal and no water enters it. (b) The Deccan is made of hard rock which does not let water sink in, and its uneven surface gives many natural hollows in which rain water collects, so tanks can be made cheaply. (c) The canal is built and maintained by the government and the water flows by gravity, so the farmer pays only a small water rate, while a tube well has to be bored and fitted at his own cost and needs electricity or diesel to run.

No dam, so water only in flood 1. Hard rock with natural hollows 1. Cost of boring and running compared 1.

Question 8 [10]

(i) Odisha, Jharkhand, Gujarat, Chhattisgarh or Maharashtra. Aluminium is light, strong and does not rust, so it is used in aircraft and railway coaches, in electrical cables, and in household utensils and packaging foil.

Two states 1. One use 1.

(ii) A conventional source has been used for a long time, is found in a limited quantity and will one day be used up, and most such sources pollute: coal, petroleum, natural gas, firewood. A non-conventional source has come into use more recently, is renewed continually and is clean: solar, wind, tidal, geothermal and biogas energy.

Difference stated 1. One example of each 1.

(iii) River water is held back by a dam so that it collects in a reservoir at a height. The water is led down through pipes, and the force of the falling water turns the blades of a turbine, which drives a generator and produces electricity. Conditions: a perennial supply of water and a natural fall or a site where a high dam can be built; a narrow, firm-sided valley with a hard rock floor to hold the dam; a market for the power within reach.

Falling water turning a turbine and generator 1. Two conditions, 1 mark each 2.

(iv) (a) Mica splits into very thin sheets, does not conduct electricity, resists heat and does not burn, so it is used as an insulator in electrical goods. (b) The coast of Tamil Nadu has strong and steady winds for most of the year, especially through the Palghat Gap, and open land on which wind farms can be set up. (c) The cattle supply dung every day, which is the raw material of biogas, and the plant gives the village clean gas for cooking and lighting as well as a good manure as its residue.

Insulating property 1. Strong steady winds 1. Dung as raw material with its two uses 1.

Question 9 [10]

(i) Any two of: a high temperature of 24 to 30 degrees Celsius through the growing season; heavy rainfall of over 100 cm, or assured irrigation where the rain is less; level land that can be flooded and bunded; a clayey or alluvial soil that holds water; plenty of cheap labour.

Two conditions, 1 mark each.

(ii) **Assam.** Any one of: heavy and well distributed rainfall of 150 to 250 cm; a warm, humid climate without frost; the gentle slopes of the Brahmaputra valley and the hills, which drain away the water, since tea cannot stand stagnant water at its roots; deep, acidic, well drained soil rich in humus; a large supply of cheap labour.

Assam 1. One reason 1.

(iii) In subsistence farming the farmer grows chiefly to feed his own family, the holding is small, traditional tools and farmyard manure are used and the yield is low, with little left to sell. In commercial farming the crop is grown for sale in the market, holdings are large, machinery, high yielding seed and fertiliser are used, and the yield per hectare is high. Problem: any one of small and fragmented holdings; dependence on an uncertain monsoon; lack of capital and indebtedness; poor storage and marketing.

Subsistence farming described 1. Commercial farming described 1. One problem 1.

(iv) (a) Pulses are leguminous and fix nitrogen from the air in nodules on their roots, so they restore to the soil the nitrogen that a cereal crop takes out. (b) The bolls of a single plant do not all ripen together, and picking by hand allows only the ripe bolls to be taken and keeps the lint clean and free of leaf; labour is also cheap and

plentiful. (c) Pruning keeps the bush low and spreading, so that the leaves can be plucked easily, and it makes the bush put out fresh, tender shoots, which give the best tea.

Nitrogen fixation 1. Uneven ripening or clean picking 1. Easy plucking with fresh shoots 1.

Question 10 [10]

(i) Any two of: the raw jute of the Ganga and Brahmaputra delta is grown close by; the Hooghly supplies fresh water for retting and processing and a waterway for carrying the jute; cheap labour from Bihar, Odisha and Uttar Pradesh; coal from the Damodar valley for power; the port of Kolkata for export; banking and insurance facilities in Kolkata.

Two sound reasons, 1 mark each.

(ii) An agro-based industry uses a product of farming or of animals as its raw material, as the cotton textile, sugar, vegetable oil or jute industry does. A mineral-based industry uses a mineral as its raw material, as the iron and steel, aluminium, cement or petrochemical industry does.

Difference stated 1. One example of each 1.

(iii) Any three of: the great iron ore fields of Odisha, Jharkhand and Chhattisgarh lie here; the coking coal of the Damodar valley is close at hand; limestone, dolomite and manganese, which the industry needs as flux and alloy, are found in the same belt; power is available from the Damodar Valley Corporation; the ports of Kolkata, Haldia, Paradip and Visakhapatnam serve the region; labour is cheap and plentiful and the railway network is dense.

Three reasons, 1 mark each.

(iv) (a) Its raw material, cotton, can be carried cheaply, and there is a market for cloth everywhere, so mills have grown up in almost every state and not only near the cotton fields. (b) Bamboo, softwood and grasses from the forest, or bagasse left after the cane has been crushed, are the raw materials of paper, and they are bulky and lose weight in manufacture, so it pays to set the mill beside the supply. (c) They need little capital and simple machinery but a great deal of labour, so they give work to a large number of people, especially in the villages and small towns, and check the drift to the cities.

Cheap transport with a wide market 1. Bulky raw material that loses weight 1. Labour intensive and spread over the country 1.

Question 11 [10]

(i) Any two of: a road gives door to door service, so goods need not be handled again at a station; it costs far less to build and to repair; it can be taken into hilly, forested and remote areas where a railway could not go; it suits small loads and short distances and is more flexible in its timing; perishable goods can be delivered quickly.

Two advantages, 1 mark each.

(ii) Any two of: Mumbai, Jawaharlal Nehru (Nhava Sheva), Kandla (Deendayal), Mormugao, New Mangalore, Kochi. Exports: Mormugao, iron ore; Kandla, salt, cotton and chemicals; Kochi, spices, coir and marine products; Mumbai and Nhava Sheva, general and containerised cargo, cotton textiles and machinery.

Two ports named 1. One export for each 1.

(iii) Any three of: transport brings the bulky raw material from the mine, the forest or the farm to the factory, and brings in the coal or oil for power; it carries the finished goods to markets all over the country and to the ports for export; it carries the workers to and from the factory; a cheap and quick service lowers the cost of the article and so widens its market; new routes open up backward regions and draw industry to them.

Three points, 1 mark each.

(iv) (a) It runs along the narrow coastal plain between the Western Ghats and the sea, across many swift west-flowing rivers and through steep spurs, so hundreds of bridges and a large number of tunnels had to be built in soft and unstable ground. (b) The region is hilly and heavily forested, the rivers are many and shift their courses, rainfall is very heavy and landslides are common, and the population is small and scattered, so a railway is costly to build and would carry little traffic. (c) Goods are packed once in a sealed steel box which can be lifted straight from a lorry to a ship, so loading and unloading are quick, less labour is needed, and there is far less damage and pilferage.

Rivers and difficult relief 1. Terrain with sparse traffic 1. Quick handling with less damage 1.

Question 12 [10]

(i) Biodegradable waste is waste that can be broken down into simple, harmless substances by the action of bacteria, fungi and other living organisms within a short time. Examples: vegetable and fruit peel, leftover food, garden leaves, paper, cotton cloth, cattle dung.

Definition 1. Two examples 1.

(ii) Any two of: the population of the cities has grown fast, both by natural increase and by migration; rising incomes have brought a throw-away habit, with more packaging, plastic and bottled goods; goods such as mobile telephones and computers are replaced quickly, adding electronic waste; more building and demolition adds rubble; more industry adds to the load.

Two reasons, 1 mark each.

(iii) Composting is the rotting of biodegradable waste by bacteria and fungi in the presence of air, so that it is turned into a dark, crumbly manure called compost. A pit about a metre deep is dug in a shady place and the waste is put into it in layers, each layer being covered with a little soil or cattle dung and sprinkled with water. The pit is kept moist but not soaked and the material is turned over from time to time to let in air. In about two to three months the waste has turned into compost, which is taken out and spread on the fields or the garden.

Composting defined 1. Pit filled in layers and kept moist 1. Turning and the time taken 1.

(iv) (a) Any two of: the effluent poisons the water, so fish and other water life die; the water becomes unfit for drinking, bathing and irrigation, and the people who use it fall ill with skin and stomach disease; the chemicals seep into the ground water of the wells along the bank; crops watered from the river are harmed and the harmful matter may pass into the food chain. (b) The factory should be required to set up an effluent treatment plant and to treat the waste water to the prescribed standard before it is discharged, reusing as much of it as possible within the factory.

Two effects, 1 mark each 2. Treatment plant before discharge 1.