

QUALITATIVE ANALYSIS

GEOGRAPHY (H.C.G.-PAPER-2)

PART I (30 Marks)

Attempt all questions from this Part

Question 1

- (a) (i) Give the **six-figure** grid reference for the temple that is located to the *south west* of Pithapura settlement. [2]
- (ii) Give the **four-figure** grid reference for a *settlement* where people of the region *meet socially* and for *trade* at least *once in a year*.
- (b) (i) What is the *pattern of drainage* seen in the grid square **2118**? [2]
- (ii) What is the *pattern of settlement* seen in the grid square **1923**?
- (c) What do each of the two numbers (281 printed in black colour and 20 printed in red colour) in the grid square **1818** indicate? [2]
- (d) (i) Name any **two man-made** features in grid square **2419**. [2]
- (ii) Name any **two natural** features in grid square **2118**.
- (e) What is the *significance* of the following? [2]
- (i) **Fire line** in grid square **2417**.
- (ii) Water body found in grid square **2221**.
- (f) Calculate the **area** of the region between **16** and **19** Eastings and **18** and **22** Northings. Give your answer in **kilometre square**. [2]
- (g) Give a reason for each of the following: [2]
- (i) The water in some of the wells in the north west quarter of the map is *not fit for drinking*.
- (ii) The region near Anadra and Gulabganj has many *causeways*.
- (h) (i) What is the *main means of irrigation* used by people living in the area shown on the map? [2]
- (ii) What is the *main occupation* of the people of the region shown on the map?
- (i) Which according to you is the *most important settlement*? [2]
- Give a reason to support your answer.
- (j) Name any two *means of transport* used by the people living in the area shown on the map extract. [2]

Comments of Examiners

- (a) (i) Many candidates did not give the **six-figure** grid reference for the temple that was located to the south-west of Pithapura settlement. Several candidates placed third and sixth digits in the six-figure grid reference incorrectly i.e. third number was placed at sixth place and sixth at the third place. For example: writing 205211 instead of 201215.
- (ii) Most of the candidates answered it correctly. Some candidates, however, interchanged eastings and northings, such as 2216 instead of 1622, which made their answer incorrect.
- (b) (i) Some candidates, instead of radial drainage pattern wrote radical /centripetal/water flowing in all directions /trellised / dendritic.
- (ii) Several candidates, instead of nucleated /compact/clustered pattern wrote nuclear/linear/houses are close, etc.
- (c) For '281', some candidates, instead of *spot height* wrote *height/approximate height/ longitude*. For '20', printed in red, a few candidates wrote *kilometre stone* instead of *distance stone/milestone*.
- (d)(i) Majority of the candidates identified the man-made features correctly. However, some candidates wrote *temple* or *tank* which was not found in this square.
- (ii) In this subpart natural features were identified correctly by majority of the candidates. However, some candidates wrote *trees/river* instead of *stream/contour line/ridge*.
- (e)(i) Most of the candidates wrote the significance of the fire line correctly. Some candidates, however, wrote its meaning instead of its significance.
- (ii) Majority of the candidates did not write the significance of water body found in 2221. Several candidates wrote the name of the reservoir such as tank/reservoir/water storage and so on.

Suggestions for teachers

- Ensure that the students understand the concept of six figure and four figure grid references thoroughly by giving them regular practice.
- Tell students that Eastings are to be written before Northing. Left side easting and lower side northing must be taken into consideration.
- Give students regular practice and make sure that they understand the writing method of eastings and northings while writing the four-figure grid reference.
- Clarify the drainage pattern to the students and give sufficient practice to identify the drainage patterns.
- Emphasise on correct spelling of all the important terms.
- Explain the settlement patterns by using diagrams and then show the students the example of various types on the toposheet.
- Be well equipped with the information on toposheet in order to guide the students properly.
- Train students about the method to read the index and explain the concept-based questions on this topic.
- Make the students aware that the answer of what the numbers in a grid indicate, is also given in the index below the map.
- Explain concepts such as, trees are natural or grown by man; a river is broader than a stream; a contour line is made on map only and so is not a feature; ridge is an elongated hill, etc.

- (f) A large number of the candidates calculated the area of the region correctly. However, some candidates did not write the unit.
- (g)(i) Majority of the candidates gave the correct reason for the water which was *not fit for drinking* in some of the wells in the north west quarter of the map. However, some candidates wrote that the water was not fit for drinking as it was dirty / polluted / contaminated /filled with sand or silt.
- (ii) Most candidates were not able to write the correct reason and wrote that people had to travel so there were causeways. Some candidates wrote the meaning of causeway. A few wrote that a causeway was a bridge.
- (h)(i) Some candidates wrote *tube well* instead of *lined perennial well*.
- (ii) Most candidates wrote the correct occupation. However, some candidates wrote *animal rearing* and *forestry*, having overlooked the word *main occupation*.
- (i) Majority of the candidates were able to write the most important settlement. Some candidates, however, wrote the type of settlement pattern. Some candidates were unable to write the reason to support their selection of the most important settlement.
- (j) Some candidates wrote the *mode of transport* instead of *means* such as, carts, car, automobile, etc. A few candidates wrote general answers such as, roadways and railways.

- Lay stress on expressing area, volume, temperature, pressure etc. with proper units.
- Advise students to show calculations of the area of a region as per the requirement of the question, as per the scale of the map and to write the answer in the unit asked for in the question.
- Guide students to make use of the terms which are printed on the map.
- Clarify to students the meaning of terms printed on the map to enable them to answer the questions asked in the examination.
- Clearly explain the difference between a 'causeway' and a 'bridge'.
- Guide students in using correct terms for the conventional symbols shown on the toposheet. Insist on terms such as *lined perennial well* rather than accepting the term *well*.
- Teach land use pattern by using colours as the main clue for identifying the same.
- Give adequate practice to students in answering questions on - important settlement, comparison of settlement, general pattern, etc.
- Explain the difference between *means* of transport and *mode* of transport giving suitable examples.
- Tell students that in questions involving interpretation of toposheet, general answers such as, roadways and railways, are not accepted.
- Train students to read the question completely, in order to understand what is to be written as the answer.

MARKING SCHEME

Question 1

(a)	(i) 201215/202215 (ii) 1622 / 1520/1519/1620
(b)	(i) 2118 – Radial pattern. (ii) 1923 – Nucleated / Compact / Clustered. <i>(Any one term)</i>
(c)	281 – Spot height/altitude of 281 m above mean sea level 20 – Distance stone along the metalled road/milestone
(d)	Man-made features – Cart track / lined perennial well / permanent hut / unlined perennial well / cultivated land/ footpath <i>(Any two)</i> Natural features – Hill / seasonal stream / rocky slope / forest area/ valley/ spur <i>(Any two)</i>
(e)	(i) Fire line is made to protect the forest from spread of forest fire. (ii) It is a reservoir where river water is stored by constructing a dam / embankment. This water is used for irrigation through canal/ for providing water for nearby areas.
(f)	12 km ²
(g)	(i) The water in some of the wells is brackish/salty/saline (ii) There are many streams/ seasonal streams in the region and causeways have to be built when metalled roads are constructed to enable it to cross the stream
(h)	(i) lined perennial well/lined well (ii) Cultivation/agriculture/farming.
(i)	Anadra - it has a metalled road passing near it / Dispensary / Dak-Bungalow / Post and Telegraph office / Police Chowki.
(j)	Metalled road / Cart track / Pack track / Foot path. <i>(Any two)</i>

Question 2

On the outline map of India provided:

- (a) Shade and label the *Gangetic Plain*. [1]
- (b) Shade and label *an area of laterite soil in North India*. [1]
- (c) Mark and label the *Karakoram Mountains*. [1]
- (d) Mark and name the *Palk Strait*. [1]
- (e) Shade and label the river *Cauveri*. [1]
- (f) Mark and name *Mumbai*. [1]
- (g) Mark and name the *Nathu La Pass*. [1]
- (h) Mark and name *Digboi*. [1]
- (i) Shade and name the *Deccan Plateau*. [1]
- (j) Shade and label the river *Jhelum*. [1]

Comments of Examiners

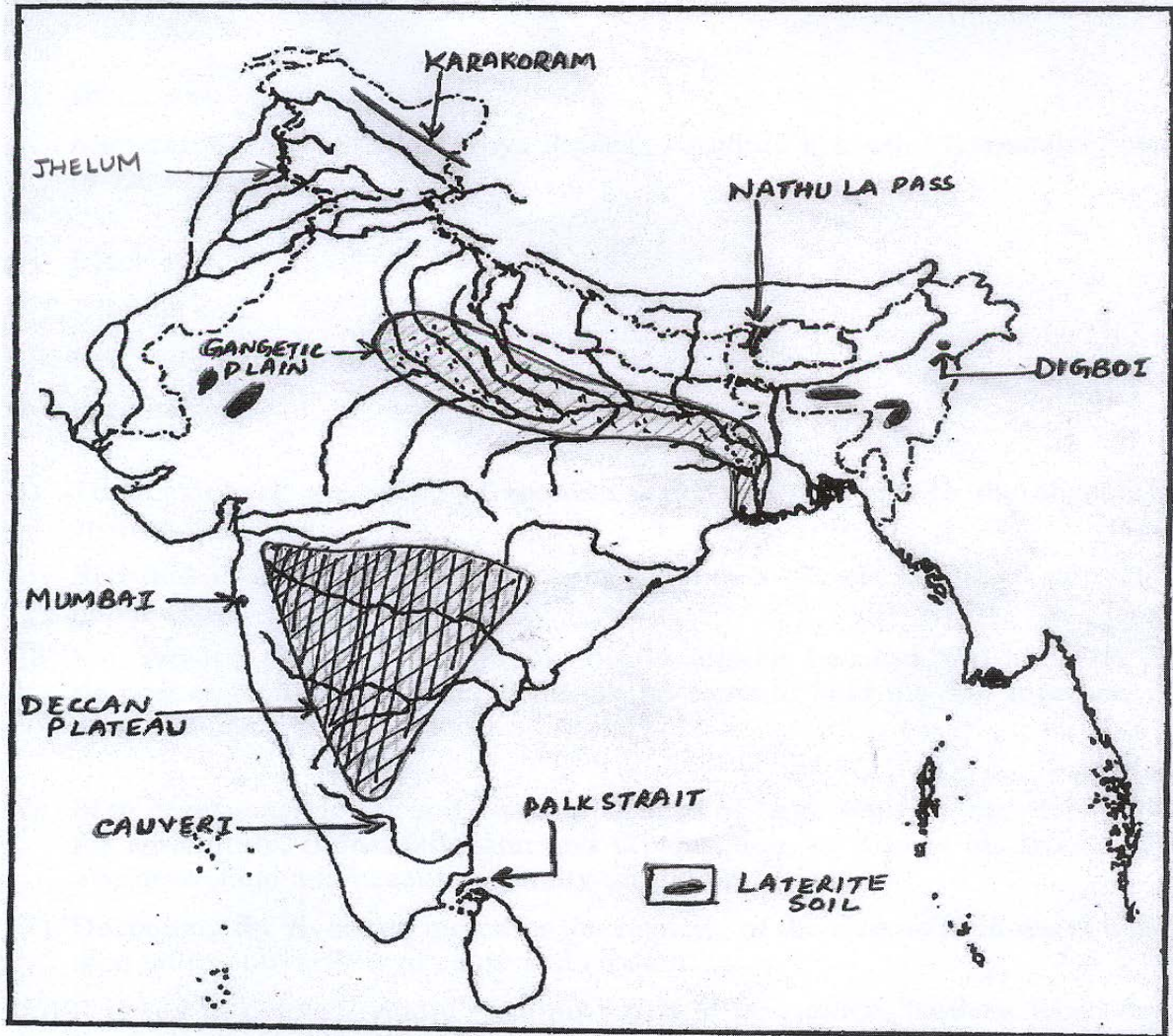
- (a) Most of the candidates did not shade the *Gangetic plain* correctly. In several answer scripts, the shading went up to Nepal and Bangladesh.
- (b) Some candidates marked the *area of laterite soil* in **North India**, anywhere in India. Shading of the area of this soil was too vast in a few answer scripts.
- (c) A few candidates marked the range without realizing that a triangle is used for a peak and not for a range.
- (d) Many candidates were unable to mark *Palk Strait* correctly. Some candidates extended it into the Gulf of Mannar. Some shaded the region between India and Sri Lanka instead of making an arrow head.
- (e) Most candidates marked the river *Cauvery* correctly.
- (f) Majority of the candidates marked *Mumbai* correctly. Some candidates, however, made a bigger dot for marking its location. Some candidates shaded it into sea.
- (g) Most candidates were unable to mark *Nathu La Pass* correctly. Several candidates marked it as horizontal lines such as '=' which was incorrect.
- (h) Most of the candidates were unable to mark *Digboi* correctly. Several candidates marked it more to the north. Many candidates marked it closer to the river.
- (i) *Deccan plateau* went much beyond its boundary in the northern side, in some answer scripts.
- (j) Some candidates got confused between the tributaries of river Indus and marked *river Jhelum* incorrectly.

Suggestions for teachers

- Teach the students to mark a strait by using a dotted line or an arrow.
- Emphasise that the port cities must be marked on the land portion and must not extend into the sea. Tell students that since indentation is already given clearly on the map, they should, avoid making a dot on that. It may be shown with the help of an arrow head.
- Guide students to mark Satpura, Nilgiri, Eastern and Western Ghats very lightly on the map and then shade the Deccan Plateau between them.
- Train students to mark Deccan as a whole or as dissected.
- Guide students to shade all rivers from their head to the mouth and tributaries to be marked from their head to the point where they join the main river.
- Tell the students to avoid over shading of the area to be marked.
- Ensure that marking in the maps of all the places mentioned in syllabus is practised by the students regularly.
- Advise students to consult an atlas, instead of going by the maps given in text books and provide the students with self-prepared maps.
- Give adequate practice to the students in map marking by conducting frequent tests in the class.

MARKING SCHEME

Question 2



PART II (50 Marks)

Attempt *any five* questions from this Part

Question 3

- (a) (i) What type of wind is ‘*Monsoon*’? What is its direction during summer? [2]
(ii) Mention **two** characteristics of the *Indian monsoon*.
- (b) With reference to the *summer season* in India, answer the following questions: [2]
(i) Mention the duration of the summer season in India.
(ii) What is the *atmospheric pressure condition* during summer season over the *central part of India*?
- (c) Give a reason for each of the following: [3]
(i) *Goa* receives heavier rainfall than *Puducherry*.
(ii) *Mawsynram* receives the highest average annual rainfall.
(iii) *Mangaluru* is cooler than *Delhi* in summer season.
- (d) Study the data of distribution of temperature and rain for station X and answer the questions that follow: [3]

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Temp. °C	10	11	23	35	39	42	40	33	30	25	13	11
Rainfall cm	2	1	0	5	15	62	71	81	59	12	10	3

- (i) Is Station X in the *coastal area* **or** in the *interior* of the country?
(ii) Calculate the *total annual rainfall* for Station X.
(iii) Name the *wind* that brings **most** of the rainfall to Station X.

Comments of Examiners

- (a) (i) Many candidates gave vague answers. Some candidates wrote the meaning of the term *monsoon* instead of the type of wind Monsoon is. As regards the direction, some candidates wrote *sea to land* instead of *south west direction*.
- (ii) Some candidates wrote factors affecting monsoon instead of characteristics of the Indian monsoon.
- (b) (i) Some candidates included the S.W. Monsoon season also in the duration and wrote *March to September* as the duration of summers.
- (ii) Several candidates wrote *high pressure* in place of *low pressure*.
- (c) (i) Many candidates were unable to write why Goa gets more rain than Puducherry. Some candidates explained either about Goa or Puducherry.
- (ii) A number of candidates were able to give the correct reason for Mawsynram receiving the heaviest rainfall. Some candidates, however, did not write the key words and key points such as, windward side/Garo-Khasi hills/clouds trapped due to position of hills, etc.
- (iii) Most candidates were able to write the correct reason for Mangaluru being cooler than Delhi in summer season. However, some candidates, instead of *coastal location* and *interior location* gave the difference in altitude as the reason. A few candidates wrote only about one city.
- (d)(i) Majority of the candidate wrote the correct location as per the given data. However, some candidates wrote *coastal* instead of *interior*.
- (ii) Most of the candidates calculated the total annual rainfall for the station X correctly. Some candidates, however, did not write the unit in their answer.
- (iii) Most candidates were able to write the correct name of the wind that brings **most** of the rainfall to Station X. However, some candidates gave the answer as, N.E. Monsoon and even western disturbance.

Suggestions for teachers

- Explain thoroughly to students about the monsoon, its mechanism, types, origin and its direction.
- Make a clear comparison between monsoon winds and the land and sea breeze.
- Discuss the concept of Ferrel's Law to make the students understand the wind direction over the Indian territory.
- Explain to the students the difference between factors affecting monsoons and characteristics of monsoons.
- Make the students understand the seasons in India and ensure that they learn their duration.
- Lay stress on reasoning-based questions in practice tests to ensure better understanding.
- Make use of maps, smart boards, and diagrams etc to ensure concept building.
- Train the students to explain about both the cities in their answers in questions where two cities are mentioned.
- Give sufficient practice to the students in answering questions based on climatic data.
- Lay stress that in questions related to calculations, it is important to write the unit.

MARKING SCHEME

Question 3

(a)	(i) It is a periodic wind. Its direction during summer is <i>southwest</i> . (ii) Erratic in nature / Unevenly distributed / mostly orographic type / occurs mainly in four months.
(b)	(i) March, April, May / March to May (ii) In central part of India there is low pressure.
(c)	(i) Goa is located on the windward side of western ghats so Arabian Sea Branch of south west monsoon bring heavier rainfall and Puducherry is located on the eastern coast and receives lighter rainfall from North East Monsoon. (ii) Mawsynram experiences Orographic rainfall as it is located on windward side of Garo hill. Bay of Bengal branch of South West Monsoon brings heavy rain to this area/funnel shape of Garo, Khasi, Jaintia hill lead to trapping of clouds leading to more rains. (iii) Mangalore has a coastal location, but Delhi lies in the interior. Due to distance from the sea, Mangalore is cooler than Delhi in summer.
(d)	(i) It is in the interior. (ii) 321 cm. (ii) South West Monsoon

Question 4

- (a) (i) Name the Indian soil which is formed due to the *weathering of basic igneous rocks*. [2]
(ii) Name *two states* of India where this type of soil is found.
- (b) Name the following: [2]
(i) An important *transported soil* of India.
(ii) Soil that is *rich in iron oxide*.
- (c) Give a geographical reason for each of the following: [3]
(i) *Terrace farming* is an ideal soil conservation method for *hilly regions*.
(ii) *Dry farming* is preferred in areas with *red soil*.
(iii) *Wind* is a common agent of soil erosion in *arid regions*.
- (d) Briefly answer the following: [3]
(i) Mention one way in which *man* is responsible for soil erosion.
(ii) How can deepening of the river bed help in preventing soil erosion?
(iii) Mention a physical characteristic of Laterite soil.

Comments of Examiners

- (a)(i) Majority of the candidates were not able to answer this question as they associated the basic igneous rock with red soil. Several candidates just read the word *weathering* and wrote all the names of in-situ soils such as red, laterite and black.
- (ii) A large number of the candidates were unable to answer this question as it was interlinked with the first part.
- (b) (i) Most of the candidates wrote the name of *an important transported soil* of India correctly.
- (ii) Majority of the candidates answered this question correctly.
- (c) (i) Some candidates, wrote a lengthy explanation but with key words were missing. Some candidates related it to wind erosion. A few candidates simply wrote the meaning of terrace farming instead of explaining its relevance for hilly areas.
- (ii) Several candidates, instead of explaining the characteristics of red soil, wrote the meaning of dry farming.
- (iii) This question was attempted correctly by majority of the candidates.
- (d) (i) This was a well attempted question.
- (ii) Some candidates could not comprehend the meaning of *deepening of the river bed* and its association with soil.
- (iii) *Physical characteristic of laterite soil* was answered correctly by most of the candidates. Some candidates wrote its chemical composition and acidic nature which was not correct.

Suggestions for teachers

- Revise the topic on rocks (acid igneous, basic igneous and metamorphic rocks) thoroughly and train them to answer such questions.
- Teach the areas where each type of soil is found by using a map so that the students are able to correlate.
- Clearly explain to the students the transported or ex-situ soils, with examples.
- Discuss the properties/characteristics of each type of soils found in India as per the scope of the syllabus.
- Explain clearly the different agents of erosion (wind and running water) and conservation methods that are used for them.
- Teach all agents of soil erosion including man along with his role in the same. Discuss methods adopted to check the impact of the same.
- Explain the advantages of desilting and how it helps in controlling floods and in turn reduce soil erosion.
- Clarify to students that physical characteristics relate to colour, texture and moisture retentivity of soil while chemical characteristics relate to the chemical composition of soil.
- Give adequate practice to students in answering reasoning questions.
- Conduct oral and written tests on application-based questions.
- Train the students to write specific and to the point answers.

MARKING SCHEME

Question 4

(a)	(i) Black soil/ Regur/Black cotton soil (ii) Maharashtra / Gujarat / Madhya Pradesh / Andhra Pradesh / Karnataka / parts of Tamil Nadu (Any two)
(b)	(i) Alluvial soil (ii) Red soil / Laterite soil (Any one)
(c)	(i) Terraces check the speed of running water and thus reduce the chance for erosion. (ii) Red soil is ideal for dry farming because it is porous and does not retain moisture. (iii) Soil erosion by wind is common in arid regions because arid areas do not support vegetation and since there are no roots to hold the soil together, the wind can carry away the loose soil easily/wind speed is high due to absence of obstruction.
(d)	(i) Man is responsible for soil erosion because of large scale deforestation done for agriculture / industrialisation / urbanisation / he allows his livestock to overgraze land / faulty farming practices/ mining/construction/ quarrying, excessive usage of chemical fertiliser, pesticide or insecticide/ shifting agriculture. (Any one) (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)

Question 5

- (a) Give **two reasons** to explain as to why we *need to conserve* our forest resource. [2]
- (b) (i) Mention *two* conditions required for the growth of *Littoral Forest*. [2]
(ii) State **one characteristic** feature of the forest found in the *Nilgiri Hills*.
- (c) (i) Give **two reasons** to explain as to why the *Tropical Evergreen Forests* are difficult to exploit for *commercial purpose*. [3]
(ii) Name any **two trees** found in Tropical Evergreen forests.
- (d) Briefly explain each of the following: [3]
(i) The trees in the Tropical Desert Forest have *stunted growth*.
(ii) There is a *gradual increase* in the forest cover in India in recent times.
(iii) The trees in *Monsoon Deciduous forests*, shed their leaves for about 6-8 weeks during March and April.

Comments of Examiners

- (a) Most of the candidates attempted this question well.
- (b) (i) Instead of writing two conditions required for the growth of littoral forest, some candidates wrote the characteristics of the forest.
- (ii) Feature of the forest found in the *Nilgiri Hills* was answered correctly by many candidates. Some candidates, however, could not identify/recall the vegetation type.
- (c) (i) Most of the candidates answered correctly.
- (ii) Some candidates, instead of writing the names of two trees found in tropical evergreen forests, wrote the names of tropical deciduous trees.
- (d)(i) Many candidates were unable to write the correct reason for trees of tropical deciduous forest having a stunted growth as they could not relate it to scarcity of water.
- (ii) Several candidates, instead of writing different methods adopted for forest conservation in India, wrote about the need to increase the forest cover.
- (iii) Some candidates wrote the characteristics of the forest belt, instead of giving reasons for trees in Monsoon Deciduous forests shedding their leaves during March and April.

Suggestions for teachers

- Before starting the topic on natural vegetation, discuss at length the importance of forest as a resource.
- Explain in a tabular form, the difference between conditions for growth of all types of natural vegetation belts found in India and their characteristics.
- Ask students to learn the names of the trees found in each vegetation belt of India.
- Reinforce the learning by frequently questioning students in different ways on the concepts taught.
- Give written assignments to the students for them to gain confidence.
- Develop the reasoning skills of the students to enable them to answer application-based questions.

MARKING SCHEME

Question 5

(a)	Forests must be conserved because they have a favourable effect on the climate or temperature and rain / help in soil conservation / flood control measure / maintains the ecological balance / habitat of wild life / provide forest products / places of tourist interest / become a source of humus/ check extension of sand dune/prevent global warming/recharge ground water. <i>(Any two)</i>
(b)	<p>(i) Temperature 26°C to 29°C / Rainfall – more than 200 cm / coastal climate/ areas of tidal influence/ salty water area.</p> <p>(ii) Vegetation consists of mixed deciduous and coniferous forests. The vegetation varies according to altitude. Consists of tropical montane forest- has deciduous, evergreen and alpine vegetation <i>(Any one point)</i></p>
(c)	<p>(i) – Thick under growth / inaccessible – Trees are not in pure stand/mixed stand. – Heavy rainfall. – Lack of transportation. – Hard wood difficult to cut. – Dark and dense/marshy area/ very tall trees/water logging. <i>(Any two points)</i></p> <p>(ii) Rosewood, Ironwood, Ebony, Cinchona, Mahogany, bamboo. <i>(Any one)</i></p>
(d)	<p>(i) This is due to non-availability of enough water for growth of trees.</p> <p>(ii) This is due to check on deforestation / banning shifting agriculture / government initiative such as agroforestry, farm forestry, social forestry, Van Mahotsav, afforestation and re-afforestation.</p> <p>(iii) Lack of sufficient moisture for leaves to withstand dry weather conditions/ to conserve moisture/ to reduce loss of water through transpiration, to have less surface area/subsoil water is not enough for trees to retain leaf cover/to survive heat and drought condition during autumn, spring and early summer.</p>

Question 6

- (a) “The modern means of irrigation are gaining popularity.” [2]
Give **two reasons** to justify this statement.
- (b) Mention **two factors** that favour the development of tube well irrigation in Punjab. [2]
- (c) Give a reason for each of the following: [3]
- (i) Most of the South Indian states are **not suitable** for development of canal irrigation.
- (ii) There is an urgent need for *water conservation* in India.

(iii) Development of irrigation is essential for the *growth of the agriculture* sector of India.

(d) Briefly explain the following terms:

[3]

(i) Inundation canal.

(ii) Rooftop rainwater harvesting.

(iii) Surface water.

Comments of Examiners

- (a) Many candidates, not being very clear on the modern means of irrigation, wrote about the traditional methods as well. Several candidates wrote about the need for irrigation instead of advantages of modern means. Some candidates wrote that modern means were becoming popular as they were cheaper.
- (b) Some candidates, instead of writing factors favouring tube-well irrigation in Punjab wrote conditions necessary for tube-well development in general.
- (c) (i) Most of the candidates wrote the correct answer. Some candidates, however, wrote the answer in relation to inland transport and some students wrote about the factors necessary for canal irrigation.
- (ii) This was a well attempted question.
- (iii) Most candidates attempted this question well.
- (d) (i) Most candidates wrote the correct answer.
- (ii) Some candidates gave general answers such as, that rain water is collected.
- (iii) Some candidates wrote that *surface water* is the water found on the surface of the earth without giving any examples.

Suggestions for teachers

- Explain to the students:
 - the difference between the traditional and modern means of irrigation along with the advantages and disadvantages of both the categories.
 - advantages of any means of irrigation with reference to the particular area/state, related to the physiological and hydrological conditions of the area.
 - the type of terrain necessary for the development of various means of irrigation.
 - the water crisis faced by India today and the reasons thereof along with the remedies for combatting the water shortage.
- Relate the chapter on irrigation with the chapter on climate and explain the need for irrigation.
- Clearly explain the two types of canals, their need along with the advantages and disadvantages of both types.
- Clarify to the students, the meaning of ground water or surface water, with examples.
- Teach the students the difference between rainwater harvesting and rooftop rainwater harvesting.

MARKING SCHEME

Question 6

(a)	<ul style="list-style-type: none"> – No loss of water due to evaporation and leakage. – Use water economically/No wastage of water/help to conserve water. – Do not cause soil erosion. – Suitable for areas of low rain, high efficiency. <i>(Any two points)</i>
(b)	<ul style="list-style-type: none"> – Ground water level is high / high water table. – Soft nature of rocks which makes digging tube wells easy / soft soil. – Availability of cheap HEP / fertile agricultural area. – Productive area to compensate cost of tube well construction <i>(Any two points)</i>
(c)	<p>(i) South Indian states have uneven terrain hence they are not suitable for constructing canals / rivers are seasonal / hard rocks make it difficult to construct canals. <i>(Any one point)</i></p> <p>(ii) – To meet the increasing demand of growing population.</p> <ul style="list-style-type: none"> – To provide water for irrigation and industrial use/ increase crop production. – To reduce the water scarcity /pollution of water/ depleting ground water/wastage of water/rain is seasonal and unreliable. <i>(Any one point)</i> <p>(iii) Rainfall in India is seasonal/uncertain/unevenly distributed/annual crops need water all through the year/to maximize the agricultural production.</p> <ul style="list-style-type: none"> – To attain self sufficiency – Certain crops need more water – For success of green revolution <i>(Any one point)</i>
(d)	<p>(i) The canals that are taken out from the rivers without any regulating system like weirs, etc at their head / the canal that are filled with water only during floods</p> <p>(ii) Rainwater can be collected over rooftop and collected water channelized through small PVC pipes into the underground pits, wells, etc.</p> <p>(iii) Water found on the surface of the earth in the form of rivers, lakes, ponds, etc. is called surface water.</p>

Question 7

- (a) Give **two advantages** of using *bio-gas* as a source of power. [2]
- (b) Name the following: [2]
- (i) **A metallic mineral** for which the *Balaghat* district of Madhya Pradesh is famous.
- (ii) The *multi-purpose project* based on the *River Sutlej*.
- (c) Give a reason for each of the following: [3]
- (i) **Odisha** has benefitted greatly from the **Hirakud project**.

- (ii) **Copper** is used to make **electric wires**.
- (iii) India's location is advantageous for the generation of **solar power**.
- (d) Briefly answer the following: [3]
- (i) Name a *mineral* used to generate *nuclear power*.
- (ii) Why is *petroleum* often referred to as "**liquid gold**"?
- (iii) State **one disadvantage** of using coal as a source of power.

Comments of Examiners

- (a) *Advantages of using biogas* as a source of power was answered correctly by most of the candidates.
- (b) (i) Some candidates wrote *iron ore* and some *magnesium* instead of *manganese*.
- (ii) Some candidates wrote only *Bhakra Dam*.
- (c) (i) Most candidates answered this subpart of the question correctly.
- (ii) This subpart of the question was attempted well by most candidates.
- (iii) Most candidates wrote the correct reason for the question; *India's location is advantageous for the generation of solar power*.
- (d) (i) Some candidates named the mineral used to generate nuclear power as coal/petroleum/natural gas which was incorrect.
- (ii) Some candidates did not understand the question and wrote about the colour of petrol as yellow, thus relating it to gold.
- (iii) Many candidates wrote the calorific value of coal instead of its disadvantage as a source of power.

Suggestions for teachers

- Discuss in detail, the advantages and disadvantages of conventional sources of power and ensure that the students learn it by conducting regular tests.
- Teach the mining areas and uses of minerals in a tabular form to make learning and revision easier for students.
- Instruct the students to write complete name of multipurpose projects.
- Explain the reason to consider petroleum as *liquid gold*.
- Conduct oral and written tests regularly to ensure that students have learnt the facts.

MARKING SCHEME

Question 7

(a)	Bio-gas is clean / non-polluting / cheap / the sludge left behind act as a rich fertilizer/ can be installed with less capital investment/cost effective/eco-friendly/easily available/ reduce dependence on fossil fuel/ renewable/ sustainable. (Any two)
(b)	(i) Manganese or Copper or Bauxite (ii) The Bhakra Nangal Dam/ Bhakra Nangal project
(c)	(i) The Hirakud project generates power / provides water for irrigation for both the <i>kharif</i> and <i>rabi</i> crops / controls floods on the River Mahanadi/ / soil conservation/ fish culture/ industrial growth/water supply/inland waterways.

	<p>(ii) Copper is a good conductor of electricity / is ductile and malleable and so is used to make electric wires. (Any one)</p> <p>(iii) India lies between 8°N and 37°N with the Tropic of Cancer running through it and so receives a lot of sunlight with 300 clear days in a year. This is advantageous for the generation of solar power. (Any one)</p>
(d)	<p>(i) Uranium / Thorium / Beryllium/Plutonium/Zirconium (Any one)</p> <p>(ii) Petroleum is a versatile mineral. It generates power / used as a fuel for vehicles and in factories / used as a raw material for products like plastics, tarpaulin, wax etc. / by-products like kerosene are very useful / Not even the smallest part of the crude oil goes waste or remains unused and is therefore called liquid gold /because of high economic value.</p> <p>(iii) It leads to pollution / it is exhaustible / it is non-renewable / heavy transport cost/ problem of disposal of residue/ health hazard.</p>

Question 8

- (a) Mention **two steps** taken by the government to boost agricultural production in India. [2]
- (b) (i) Name two *varieties of millet* grown in India. [2]
(ii) What is the soil requirement for growing millet?
- (c) Study the picture given below and answer the questions that follow: [3]



- (i) Mention the *climatic condition* that is suitable for the cultivation of this crop.
- (ii) Name the *state* that produces the *largest amount* of this crop.
- (iii) In which *cropping season* is this crop grown in India?
- (d) Give a geographical reason for each of the following: [3]
- (i) Cultivation of *wheat* is confined to the *northern part of India*.
- (ii) Practicing *mixed farming* gives *security* to farmers.
- (iii) *Ratoon* cropping is *gaining popularity* among sugarcane cultivators.

Comments of Examiners

- (a) Most candidates answered this part correctly.
- (b)(i) Most candidates were able to name two varieties of millet grown in India correctly.
- (ii) The soil requirement for growing millet was given correctly by most candidates.
- (c) (i) Most candidates mentioned the climatic condition that is suitable for the cultivation of this crop correctly. However, some candidates wrote the incorrect temperature range. Some candidates mentioned the soil also, which was not asked for.
- (ii) Most candidates wrote correct answers.
- (iii) Many candidates, instead of writing *kharif*, wrote *Summer/June to September*, etc.
- (d) (i) Some candidates related wheat cultivation being confined to North India to alluvial soil. They did not mention the correct geographical reason for cultivation of *wheat* confined to the *northern part of India*.
- (ii) Some candidates gave the meaning of *mixed farming* instead of its advantages.
- (iii) Some candidates did not mention the crop associated with Ratoon cropping.

Suggestions for teachers

- Explain the meaning of food crops, cash crops and plantation crops with examples. Also bring out the differences amongst these crops.
- Advise students to prepare a table/chart of climatic and soil requirement of each crop to make learning easier.
- Explain the distribution of the crop by using a map.
- Relate the chapter on agriculture with chapters on climate, water resources and soil, for better understanding.
- Clarify the types of cropping seasons in India and give the examples of the crops grown in each cropping season.
- Teach the highlights of different types of farming with the advantages of each.
- Guide students to mention the name of the crop for those questions in which any term related to it is asked.
- Clearly explain terms such as ratooning, ginning, retting, etc.
- Train the students to write the answers to the point, using correct terms, in order to explain a concept.

MARKING SCHEME

Question 8

(a)	<ul style="list-style-type: none"> – Promoting availability of good seeds to the farmers (high yielding variety). – Setting up of agriculture price commission to give better price for agricultural products. – Providing easy loans to the farmers. (NABARD). – Starting new irrigation projects. – Consolidation of land holding. – Subsidies on fertilizers, free electricity/ diesel to run the water pump. – Introduction of green revolution – Setting up of agricultural universities <p style="text-align: right;">(Any two)</p>
(b)	<ul style="list-style-type: none"> (i) Jowar/ Bajra/ Ragi (ii) Sandy alluvium/ black/ red <p style="text-align: right;">(Any one)</p>
(c)	<ul style="list-style-type: none"> (i) Temperature: 18 °C to 32 °C. Rainfall: 50 cm to 80 cm / 200 frost free days/ bright sunshine during harvest. (ii) Maharashtra/Gujarat (iii) Kharif
(d)	<ul style="list-style-type: none"> (i) Ideal temperature of 10 °C to 20 °C that is suitable growth of wheat is available in north India / In north India winter rain occurs which is found suitable for its growth/ 50 cm - 100 cm rain in north-west India. Wheat is a temperate crop. India is a warm country so cool climate is found in north during winter. (Any one) (ii) During drought and crop failures it provides income from livestock/ extra income. (iii) Mature faster/ saves time and money/ less labour required/cost effective. (Any one)

Question 9

- (a) Where do the following *iron and steel plants* get their supply of **iron ore** from? [2]
- (i) Bhilai Iron and Steel Plant.
 - (ii) Vishakhapatnam Steel Plant.
- (b) 'Karnataka has developed as an important state for the growth of the Silk industry.' Give **two reasons** to justify the statement. [2]
- (c) With reference to **sugar industries** answer the following questions: [3]
- (i) Why should these industries *be located close to* the sugarcane growing areas?

- (ii) Name **two** *by-products* of the sugar industry.
- (iii) Mention **one** *leading* sugar producing state *in North India* and **one** *in South India*.
- (d) Give a reason for each of the following: [3]
- (i) **Ahmedabad** is an important *cotton textile* producing centre in India.
- (ii) Cottage industries are significant for our economy
- (iii) *Petrochemical industries* are usually located close to the oil refineries.

Comments of Examiners

- (a) In subparts (i) and (ii), some candidates, instead of the mines, wrote the names of States.
- (b) Most candidates wrote correct reasons to justify the statement - '*Karnataka has developed as an important state for the growth of the Silk industry.*'
- (c) (i) This subpart of the question was well attempted by most candidates.
- (ii) *By-products of sugar industry* were written correctly by majority of the candidates.
- (iii) Some candidates wrote general names without stating whether it is in North India or in South India.
- (d) (i) Most of the candidates answered it correctly.
- (ii) Most of the candidates attempted it correctly.
- (iii) Some candidates could not relate the question to the availability of the raw material.

Suggestions for teachers

- Advise students to note whether mines/place or State has been asked, and then answer accordingly.
- Teach the factors of location of those industries that are given in scope of syllabus.
- Discuss the classification of industries in detail.
- Give adequate practice to students to answer reasoning and application-based questions.
- Instruct students to read the question carefully before answering.
- Train the students on the proper presentation of answers and advise them to follow the instructions given in the question paper.

MARKING SCHEME

Question 9

(a)	<p>(i) Iron Ore – Dalli-Rajhara Range / Singhbhum/Keonjhar/ Durg/Bastar/ Chandipur. (Any one)</p> <p>(ii) Iron Ore – Bailadila mines in Chhattisgarh/ Bastar.</p>
(b)	Climate is suitable for sericulture / large market / skilled workers/ latest technology available / favourable government policies/ non-alkaline water or soft water present/ licenced distributors present.
(c)	<p>(i) Sugarcane starts losing its sucrose after it is cut / to reduce the transportation cost/ must be crushed within 48 hours/ sugarcane is perishable.</p> <p>(ii) Molasses / bagasse / press mud. (Any two)</p> <p>(iii) North India – Uttar Pradesh / Bihar / Haryana / Punjab (Any one)</p> <p>South India – Maharashtra / Karnataka / Tamil Nadu / Andhra Pradesh / Telangana (Any one)</p>
(d)	<p>(i) Humid climate/availability of raw material/availability of skilled and unskilled labours/availability of cheap hydroelectricity/good transport network/ port nearby/ market/ capital or credit facility available/ soft water available/ government support. (Any one)</p> <p>(ii) – Provides employment</p> <ul style="list-style-type: none"> – Brings in foreign exchange – Need less built up area – Can be started with less capital investment – Uses local raw material – Keeps the traditions alive from one generation to another <p style="text-align: right;">Fulfil local need/ low cost of transport (Any one)</p> <p>(iii) Raw materials used in petrochemical industries are mainly derived from petroleum hence these industries are located close to oil refineries.</p>

Question 10

- (a) “Roadways are an important means of transport in India”. [2]
Give **two reasons** to justify the statement.
- (b) (i) Why are South Indian rivers **not ideal** for the inland water transport? [2]
(ii) Mention **one advantage** of coastal shipping.
- (c) Give a reason for each of the following: [3]
(i) Nearly seventy *percent* of Indians *do not* use air transport.
(ii) A *well-developed transport network* is important for industrial growth.

- (iii) Water transport is not as popular as land transport in India.
- (d) (i) “The railway is an important means of transport as compared to airways.” State two reasons to support the statement. [3]
- (ii) Mention *one disadvantage* of rail transport.

Comments of Examiners

- (a) Most of the candidates answered it correctly.
- (b) Sub parts(i) and (ii) of this question were attempted correctly by most candidates.
- (c) (i) Most of the candidates answered it correctly.
 (ii) Many candidates were unable to relate transport to industries and thus wrote vague answers.
 (iii) Most of the candidates answered it correctly.
- (d) Most of the candidates answered sub parts(i) and (ii) of this question correctly.

Suggestions for teachers

- Teach the importance of the means of transport.
- Explain the characteristics of rivers of North India and South India to enable the students to understand why South Indian rivers are *not ideal* for the inland water transport.
- Discuss coastal shipping in detail.
- Relate a well-developed transport network to growth of industries and the economy as a whole.
- Teach the advantages and disadvantages of all means of transport.

MARKING SCHEME

Question 10

- | | |
|-----|---|
| (a) | <ul style="list-style-type: none"> - They are cheap means of transport. - They link villages to the urban areas. - They can be constructed in the remote areas / difficult terrain / high altitudes / steep slope. - They provide door-to-door service. - They are safer means of transport for perishable items. - Flexible usage. <p style="text-align: right;"><i>(Any two points)</i></p> |
| (b) | <p>(i) South Indian rivers are seasonal in nature.
 They have rapids and water falls and cataracts.
 They will have little water in hot season.
 Undulating terrain
 Short river/swift river</p> <p style="text-align: right;"><i>(Any one point)</i></p> <p>(ii) Less maintenance cost / cheapest means of transport / ideal for export and import of</p> |

	bulky goods / causes less pollution/ fuel efficient. (Any one point)
(c)	<p>(i) Air transport is very expensive hence it is not used by many people/ carry less luggage/not comfortable for long journey/ no airport in small town.</p> <p>(ii) Transportation helps in easy movement of raw materials and finished goods/ connect backward areas/ mobility of skilled and unskilled labour/ decentralised growth.</p> <p>(iii) Water transport is limited to areas which have navigable water source. It is slow and not well connected.</p>
(d)	<p>(i)</p> <ul style="list-style-type: none"> – It carries bulky raw materials and heavy goods. – It is cheaper than airways. – Caters to more number of passengers at one time. – Can carry more amount of goods. – Comfortable for long journey <p style="text-align: right;">(Any two points)</p> <p>(ii)</p> <ul style="list-style-type: none"> – The flow of goods and passengers are hampered in India as the railways' operation is on three gauges. – Shifting from one gauge to another is time consuming and expensive. – Perishable items cannot stand the delay. – The tracks are not able to carry increased goods and accidents are becoming frequent. – Poor maintenance of tracks. – Outdated engines and compartments. – It causes pollution. – Overcrowded – Delays <p style="text-align: right;">(Any one point)</p>

Question 11

- (a) What impact does the waste accumulation have on the following? [2]
- (i) Quality of air around us.
- (ii) Quality of water around us.
- (b) Mention **two ways** in which the decomposition of waste in open areas can affect human health. [2]
- (c) (i) What can an individual do to *reduce* waste at home? [3]
- (ii) Why must *segregation* of waste be done before disposal?
- (iii) How has *composting* proven to be a great help in managing waste?

- (d) Give a reason for each of the following: [3]
- (i) Trees must be planted in the industrial areas.
 - (ii) Chemical fertilizers must be replaced by organic manure.
 - (iii) Plastic and polythene products must be banned.

Comments of Examiners

- (a) Most of the candidates answered the impact of waste accumulation on the quality of air and water around us correctly.
- (b) Two ways in which decomposition of waste in open areas can affect human health were written correctly by most candidates. However, some candidates wrote general points.
- (c) (i) Most of the candidates were able to answer this part correctly.
(ii) Some candidates wrote the *meaning* of segregation instead of writing the *reason* for segregation of waste to be done before disposal.
(iii) Most candidates answered correctly.
- (d) (i) Most candidates were able to give a reason for why trees must be planted in the industrial areas.
(ii) Most candidates attempted this subpart of the well.
(iii) This part was answered correctly by most of the candidates. However, some candidates wrote vague answers such as - it is bad for environment and humans.

Suggestions for teachers

- Train students to read questions carefully before attempting them.
- Explain clearly to the students:
 - The impact of waste accumulation on the quality of air/water.
 - Effect of decomposition of waste in open areas on human health.
 - Different methods of waste disposal and their advantages with examples.
- Discuss in detail the disadvantages of using synthetic products relating it to present environmental issues faced by our country.
- Regularly revise the topics with students.
- Train students to write the answers to the point and instruct them to use correct terms in order to explain a concept.
- Give adequate practice to the students to answer reasoning and application-based questions.

MARKING SCHEME

Question 11

(a)	<p>(i) Waste accumulation results in air pollution which may cause acid rain and several air-borne diseases/ bad odour/release harmful greenhouse gases/ chemicals near the underground water by leakage.</p> <p>(ii) Water pollution affects human health and also animal life on land it also affects aquatic animals adversely/ eutrophication/biomagnification.</p>
(b)	<p>It may lead to foul smell and several diseases such as malaria, cholera etc., may be caused due to flies and other insects that carry the disease causing bacteria which grow in the decomposing waste / it produces harmful gases which pollute the air around us / rainwater may carry the pathogens from the waste to our water bodies and so pollute the water which affects human health/ biomagnification.</p> <p style="text-align: right;"><i>(Two points)</i></p>
(c)	<p>(i) Individual may use carry bags / adopt reusable containers and utensils / use rechargeable batteries / use computer storage system rather than paper / recycle used paper. compost solid kitchen waste/ reduce usage/reuse by following 3R.</p> <p style="text-align: right;"><i>(One point)</i></p> <p>(ii) It will help in safe disposal and will cause lesser pollution.</p> <p>(iii) It not only reduces waste accumulation but also increases plant growth.</p>
(d)	<p>(i) Trees give out oxygen and take in carbon dioxide and carbon monoxide emitted by industries/trees control noise pollution/air pollution/ maintain temperature.</p> <p>(ii) The chemicals in chemical fertilizers combine with plant nutrients and the plants are consumed by animals and humans which is harmful (benefits of organic manure or harmful effects of chemical fertilisers may be written)</p> <p>(iii) Plastic and polythene products must be banned because they are non-biodegradable and take hundreds of years to decompose. If these plastics are ingested by animals like cattle or marine life like whales, it can lead to their death. They cause clogging of drains/ pollute soil/ obstruct the seepage of water.</p>

GENERAL COMMENTS

Topics found difficult / confusing by candidates

- Toposheet: six figure reference, reason for presence of causeway, main means of irrigation and transport and significance of water body found in 2221.
- Map pointing: area of laterite soil in north, Gangetic plain and Digboi.
- Identifying the type of wind, calculation of total annual rainfall and reasoning related to factors affecting climate of India.
- Identifying vegetation belt in Nilgiri Hills, reasons for deepening of river bed helping in preventing soil erosion, benefits of modern means of irrigation, how transport helps in industrial growth, usefulness of segregation of waste before disposal.
- Manmade and natural features.
- Identifying most important settlement.
- Physical characteristic of laterite soil.
- Soil formed by weathering of basic lava rocks.
- Conditions for littoral forests.
- Mixed farming.
- Cropping seasons.
- Mining areas of minerals.
- Climatic requirement of crops.
- Cottage industry and cotton textile industry.
- Location of petro-chemical industries.

Suggestions for candidates

- Study the chapters thoroughly. Avoid selective studies.
- Prepare tables/charts/notes etc. to revise before examination.
- Study the subject for acquiring knowledge and understanding of the subject and not for marks alone.
- Understand the concepts instead of merely cramming the concepts.
- Practise topographic sheet and map-based questions regularly.
- Concentrate on acquiring accuracy in map pointing by practicing it regularly.
- Master the technique to take note of key words.
- Learn to answer critical and analytical questions.
- Read books, newspapers and periodicals regularly.
- Solve past years' question papers.
- Read the instructions given on the question paper attentively.
- Use the 15 minutes reading time judiciously to make a proper choice of questions by reading the requirements of the question carefully.
- Choose the questions in which you are sure of answering all the parts.
- Do not answer extra questions unnecessarily. Concentrate on the questions you need to attempt.
- Read through the paper on completion to avoid mistakes.