

PART I – (30 MARKS)

(Attempt *all* questions from this *Part*)

Question 1

Study the extract of the **Survey of India** Map Sheet No. **G43S7** and answer the following questions:

- (i) (a) Give the *six-figure* grid reference for spot height **.522**. [2]
(b) What is the *pattern of settlement* in the grid square **3591**?
- (ii) (a) Mention **two** *man-made features* seen in the grid square **3794**. [2]
(b) Mention **two** *means of transport* used by the people of Nani Bhatamal in the grid square **3691**.
- (iii) (a) Identify the *landform* marked by the contours in the grid square **3896**. [2]
(b) What is the *pattern of drainage* seen in the grid square **3697**?
- (iv) (a) What is the reason for the *presence of causeway* in the grid square **3695**? [2]
(b) What is the *compass direction* of Khara (**4097**) from Karja (**3994**)?
- (v) Calculate the *area in kilometre square* of the region to the **south of 94** [2]
Northings.

Comments of Examiners

- (i) (a) Some candidates wrote only the four-figure grid reference while the rest confused the 3rd number of northing with the 3rd number of easting.
(b) Most of the candidates answered it correctly. However, some candidates mentioned permanent huts and temporary huts instead of mentioning the 'pattern'. Also, some of them mentioned the '**general settlement pattern**' of the map extract instead of the given grid reference.
- (ii) (a) Most of the candidates answered this sub-part correctly. However, some candidates mentioned the 'covered tank' and 'overhead tank', but no symbol of tank was present in the said 'grid square'.

Suggestions for teachers

- Give adequate practice regarding 6 figure grid reference where easting numbers should be mentioned first followed by northing numbers.
- Familiarize students with the pattern of settlement such as Nucleated/Compact when huts are close together and Scattered/dispersed when huts are spread out in the grid square.
- Familiarize students with the conventional symbols and the index given below the map.
- Explain the difference in symbol for 'temple' and 'chatri'
- Train students to identify the conventional symbols well and also equip them to differentiate between 'modes' and 'means of transport'.

Also, some candidates mentioned 'temple' instead of 'chatri'. Many candidates lost marks by writing 'houses' instead of 'huts' as a manmade feature as 'house' was a general term and not specific to toposheet.

- (b) Many candidates failed to write this answer and interpreted it as roadways, railways and waterways or carts, car, bus and bullock carts_ instead of cart track, metalled road etc.
- (iii) (a) Most of the candidates were not able to identify relief features. Many candidates wrote 'Rocky slopes', 'trees' and 'wooded forest' as landform. A few candidates randomly mentioned any feature such as- saddle, pass etc.
- (b) Some candidates mentioned trellised or dendritic instead of radial drainage pattern which depicted lack of understanding of the concept.
- (iv) (a) Some of the candidates defined the term 'causeway' as raised metalled road instead of mentioning the cause of the presence of causeway. Also, some candidates mentioned river instead of minor stream while explaining the meaning.
- (b) This sub-part was answered correctly by most the candidates. Some candidates mentioned 'north' and 'northwest' as the answer.
- (v) Calculation of area was another domain of concern where candidates lost marks due to wrong calculation and carelessness of missing out the 'unit' while writing the answer.

Suggestions for teachers

- Emphasize that means of transport includes different types of roads/railway lines present in the given grid square and familiarize students with the same.
- Equip students to be able to identify the relief features mentioned in the scope of syllabus.
- Teach students to identify features looking at the shape and space between contours on the toposheet.
- Familiarize students with an understanding of contour lines in terms of steep slopes and gentle slopes.
- Explain different types of drainage pattern with the help of a diagram and provide enough practice of identification of drainage pattern in class.
- Advise students to read the question carefully before attempting.
- Discuss the definitions and reasons behind the presence of main conventional symbols along with their identification.
- Explain the differences between a river and a stream.
- Discuss the 8 cardinal directions well in class.
- Guide students to read 'from' and 'to' in the question carefully to find compass direction correctly.
- Provide sufficient practice of calculation of area on a regular basis.
- Emphasise on the importance of correct units for this question.

MARKING SCHEME

Question 1

| | |
|-------|--|
| (i) | (a) 375966 (b) Scattered / Dispersed |
| (ii) | (a) Permanent hut / hut / chatri / lined perennial well / well / cart track / pack track/metalled road / tehsil or taluk boundary/cultivated land/arable settlement (Any two) (b) Cart track / pack track / metalled road (Any two) |
| (iii) | (a) Hill / valley / ridge / escarpment / steep slope/conical hill/watershed or divide/ saddle (b) Radial |
| (iv) | (a) Many seasonal streams are present. (b) Northeast/NE |
| (v) | 40 km ² – 40 grid squares. Each square has an area of 1 km ² as per the scale. 40 x 1 = 40 km ² |

Question 2

On the outline map of India provided:

- | | |
|--|-----|
| (i) Mark and label the <i>river Krishna</i> . | [1] |
| (ii) Mark and label the <i>Eastern Ghats</i> . | [1] |
| (iii) Shade and label a <i>densely populated</i> area in the <i>southern part of India</i> . | [1] |
| (iv) Shade and label the <i>Konkan coastal plain</i> . | [1] |
| (v) Mark with an arrow and label the direction of western disturbance. | [1] |
| (vi) Shade and label the <i>Thar Desert</i> . | [1] |
| (vii) Shade and label the <i>Andaman Sea</i> . | [1] |
| (viii) Mark and label the city <i>Chennai</i> . | [1] |
| (ix) Mark and name the <i>highest peak of Himalayas in India</i> . | [1] |
| (x) Mark and label <i>Mumbai High</i> . | [1] |

Comments of Examiners

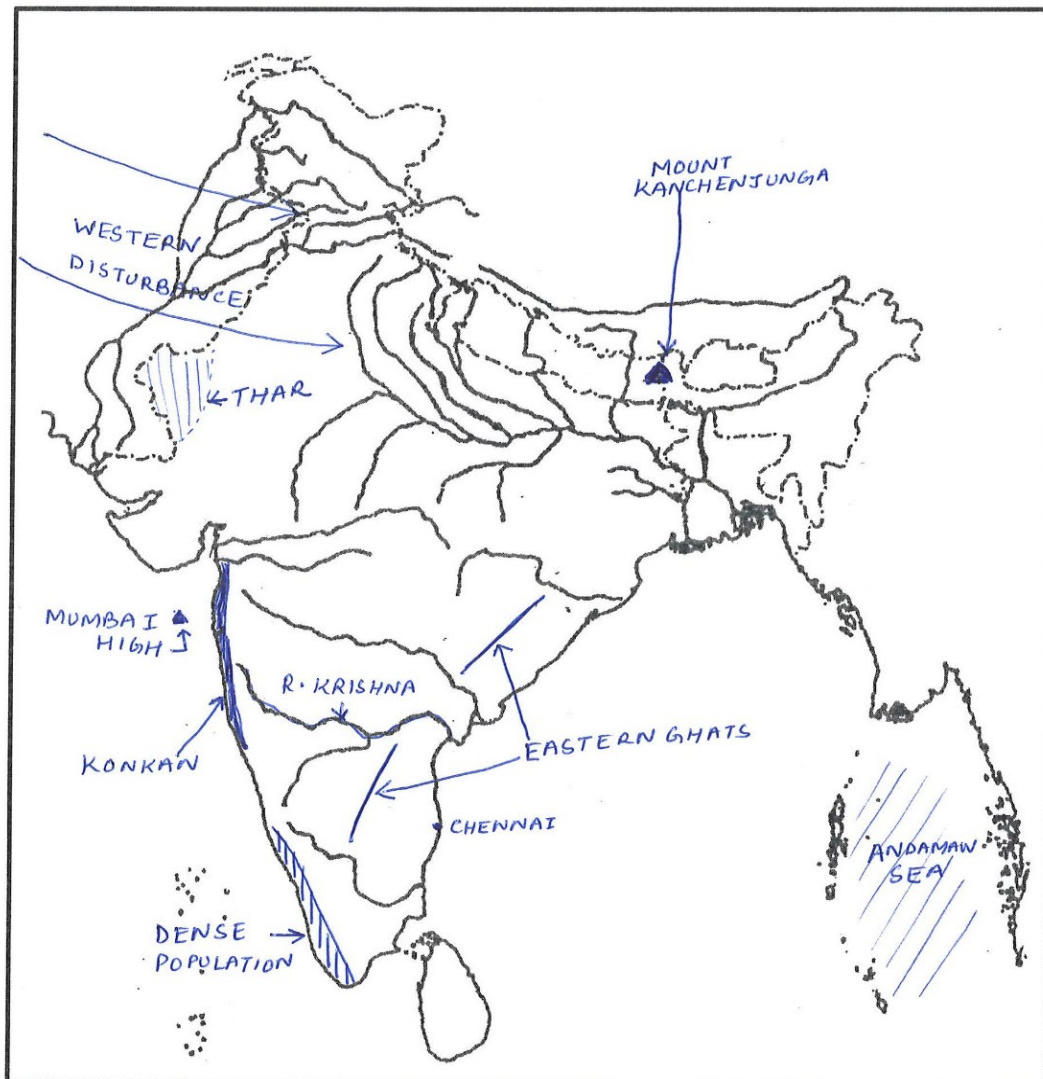
- (i) Candidates wrongly marked the river Godavari or Tungabhadra as Krishna.
- (ii) Eastern ghats was marked wrong by many candidates as they marked it too near to the Bay of Bengal.
- (iii) Many candidates did not follow the instructions of shading and labelling a densely populated area and hence lost marks. Some of them shaded but did not label it.
- (iv) Konkan Coastal plain was wrongly marked by many candidates. They marked it quite below where Kanara Coastal plain is located.
- (v) Many candidates could correctly point the direction of Western disturbance.
- (vi) Some candidates incorrectly shaded and marked the Thar desert beyond the correct area.
- (vii) Some candidates shaded the Andaman Sea incorrectly by shading the Bay of Bengal or on the island itself.
- (viii) Many candidates marked Chennai correctly.
- (ix) Many candidates failed to mark the highest peak of India as Kanchenjunga and instead marked Mt. K2.
- (x) Many candidates lost marks as they marked Mumbai High either too near or too far in the Arabian Sea.

Suggestions for teachers

- Encourage students to highlight the river in question with an arrow or write on the river drawn touching the line and not between the two rivers.
- Familiarize students with the location of Eastern and Western ghats through a demonstration on the blackboard.
- Emphasise that Western ghats are much closer to the Arabian Sea compared to Eastern ghats which are relatively away from the Bay of Bengal.
- Guide students to be more vigilant while reading the question paper and carefully read the instructions within the stipulated 15 minutes reading time.
- Provide sufficient practice and vividly demonstrate the boundaries of the coastal plains with different colour chalks on the blackboard to the students.
- Ensure regular map practice in class.
- Demonstrate the boundary of the Thar desert on the blackboard and allot practice sessions for the same.
- Facilitate regular revision of map practice and advise students to read the questions carefully.
- Highlight recurring errors during map practice session to minimise such mistakes.
- Drill for the accurate location of Mumbai High in the map pointing classes by demonstrating it on the board.

MARKING SCHEME

Question 2



Question 3

[10]

Choose the correct answers to the questions from the given options.

(Do not copy the questions, write the correct answers only.)

- (i) What causes snowfall in Kashmir *during winter*?
 - (a) Tropical cyclone
 - (b) Northeast Monsoon wind
 - (c) Southwest Monsoon wind
 - (d) Temperate cyclone
- (ii) Which of the following helps in soil conservation?
 - (a) Afforestation

- (b) Overgrazing
(c) Mining
(d) Shifting agriculture
- (iii) Which means of irrigation can be developed with minimum expenditure?
(a) Tube well
(b) Canal
(c) Well
(d) Drip irrigation
- (iv) Read the table and identify the pair that is **correctly matched**:

| | Natural Vegetation Belt | Tree |
|---|-------------------------|--------|
| P | Tropical evergreen | Babool |
| Q | Tropical deciduous | Teak |
| R | Littoral | Ebony |
| S | Mountain forest | Banyan |

- (a) P
(b) Q
(c) R
(d) S
- (v) Bauxite is the ore of:
(a) Aluminium
(b) Copper
(c) Manganese
(d) Iron
- (vi) Identify the source of energy that leads to pollution:
(a) Tidal energy
(b) Wind energy
(c) Natural gas
(d) Geo-thermal energy
- (vii) Which of the following is **NOT** a centre for the iron and steel industry?
(a) Bhilai
(b) Bengaluru
(c) Rourkela
(d) Vishakhapatnam
- (viii) Which of the following farming method is used to grow tea on a large scale?
(a) Subsistence farming

- (b) Plantation farming
 - (c) Mixed farming
 - (d) Shifting agriculture
- (ix) Which of the following means of transport has best use during floods / earthquake?
- (a) Airways
 - (b) Railways
 - (c) Roadways
 - (d) Waterways
- (x) Which of the following is a biodegradable waste?
- (a) Broken glass
 - (b) Wastepaper
 - (c) Polythene
 - (d) Plastic bags

Comments of Examiners

- (i) Some candidates mentioned 'Tropical Cyclone' and 'Northwest Monsoon' winds instead of 'Temperate Cyclone.'
- (ii) Most of the candidates answered this sub-part correctly except for some who incorrectly mentioned 'overgrazing'.
- (iii) Some candidates incorrectly mentioned 'Drip irrigation' or 'Tube well' instead of 'Well' which was the correct option.
- (iv) Some candidates failed to understand the question and wrote either the name of trees or the natural vegetation belt instead of selecting the correct option.
- (v) Some candidates incorrectly mentioned 'Iron' as the ore of Bauxite instead of 'Aluminum' while others were confused between 'Copper' and 'Aluminum'.
- (vi) Most of the candidates identified the pollution causing source of energy as both 'Natural gas' and 'Geo-thermal energy' whereas a few candidates incorrectly mentioned 'tidal energy'.
- (vii) Some candidates missed the word '**NOT**' given in the question and incorrectly selected either 'Rourkela' or 'Bhilai'.
- (viii) Most candidates answered this question correctly. Few candidates selected 'Mixed farming' and 'Subsistence farming' which are incorrect options.
- (ix) Some candidates mentioned 'Waterways' as the correct option instead of 'Airways'.
- (x) Some candidates mentioned 'Broken glass' instead of 'Wastepaper'.

Suggestions for teachers

- Explain the difference between Tropical cyclone and Temperate cyclones.
- Clearly explain that winter rainfall in the north-northwestern part of India is caused by Western Disturbances which are also known as 'Temperate Cyclones'.
- Guide students to read the question and options properly to answer the questions correctly.
- Familiarize students that 'minimum expenditure' means 'cost of construction' and not less money spent.
- Advise students to spend time to read questions well for better understanding.
- Make students practice the 'Match the following' type of questions for MCQs.
- Ensure that students can differentiate between 'ore' and 'mineral' by explaining the differences clearly.
- Familiarize and explain that Bauxite is an ore of Aluminum by taking help of a picture-based study.
- Ensure that questions are specific leading to only one correct answer.
- Guide students to read the question and options properly to answer correctly.
- Provide enough practice of MCQs for conceptual clarity in class.
- Bring out the fact that 'earthquake' also affects water bodies.
- Clarify the concept related to Bio-degradable and non-biodegradable waste.

MARKING SCHEME

Question 3

| | |
|-------|------------------------|
| (i) | (d) Temperate cyclones |
| (ii) | (a) Afforestation |
| (iii) | (c) Well |
| (iv) | (b) Q |
| (v) | (a) Aluminium |

| | |
|--------|-----------------------------------|
| (vi) | (c) Natural gas/Geothermal energy |
| (vii) | (b) Bengaluru |
| (viii) | (b) Plantation farming |
| (ix) | (a) Airways |
| (x) | (b)Wastepaper |

PART II – (50 MARKS)

(Attempt *any five* questions from this *Part*.)

Question 4

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|-------|------|------|------|------|------|------|------|------|------|------|-----|-----|--------|-----|------|------|------|------|------|------|------|------|------|------|------|--------------|-----|-----|-----|---|---|------|------|------|------|------|-----|-----|-----|
| (i) | ‘Himalayas act as a climatic divide.’ Justify the statement giving two reasons. | [2] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (ii) | Differentiate between Southwest Monsoon and Retreating Monsoon. (<i>Any two differences</i>) | [2] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (iii) | Give a geographical reason for the following: (a) Kolkata gets more rain than Delhi during rainy season. (b) Though both are hill stations, Shimla experiences snowfall during the winters but Ooty does not. (c) Winter monsoons bring less rain. | [3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (iv) | <p>Study the climate data of Station X and answer the questions that follow:</p> <table><tr><td>Month</td><td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td><td>Jul</td><td>Aug</td><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td></tr><tr><td>Temp C</td><td>8.4</td><td>11.5</td><td>21.6</td><td>28.3</td><td>35.1</td><td>38.5</td><td>41.0</td><td>38.0</td><td>30.8</td><td>29.2</td><td>15.6</td><td>10.2</td></tr><tr><td>Rainfall cms</td><td>1.5</td><td>0.9</td><td>0.5</td><td>—</td><td>—</td><td>12.5</td><td>17.8</td><td>18.5</td><td>12.5</td><td>12.5</td><td>6.2</td><td>2.1</td></tr></table> <p>(a) Calculate the annual range of temperature of Station X. (b) Name the rainiest month of the Station X. (c) Is the Station X located in coastal area or in the continental interior?</p> | Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Temp C | 8.4 | 11.5 | 21.6 | 28.3 | 35.1 | 38.5 | 41.0 | 38.0 | 30.8 | 29.2 | 15.6 | 10.2 | Rainfall cms | 1.5 | 0.9 | 0.5 | — | — | 12.5 | 17.8 | 18.5 | 12.5 | 12.5 | 6.2 | 2.1 | [3] |
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temp C | 8.4 | 11.5 | 21.6 | 28.3 | 35.1 | 38.5 | 41.0 | 38.0 | 30.8 | 29.2 | 15.6 | 10.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rainfall cms | 1.5 | 0.9 | 0.5 | — | — | 12.5 | 17.8 | 18.5 | 12.5 | 12.5 | 6.2 | 2.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Comments of Examiners

- (i) Many candidates answered this part of the question correctly. However, some mentioned 'climatic divide' as the temperate zone north of Himalayas and tropical zone south of Himalayas.
- (ii) Some candidates answered this part correctly. However, some were able to give only one correct difference between 'Southwest Monsoon' and 'Retreating monsoon' while a few candidates were confused between 'Retreating Monsoon' and 'Northeast Monsoon'.
- (iii) (a) Many candidates answered this part correctly but some failed to mention both the cities in their answers.
 (b) This part was answered correctly by most of the candidates. However, some candidates failed to mention the stations in the answer.
 (c) Many candidates failed to understand this question correctly hence, instead of winter monsoon wrote about western disturbances.
- (iv) (a) Some candidates failed to mention the units while some committed calculation errors and gave incorrect answers.
 (b) This question was answered correctly by majority of the candidates.
 (c) Many candidates answered this question correctly. However, few candidates were not able to identify the location of the station.

Suggestions for teachers

- Make use of wall maps while explaining the chapter on climate to enable students to understand the location of relief features and their impact on the climate.
- Insist on writing differences in a tabular form with corresponding points on either side.
- Explain clearly to students the difference between South West Monsoon and retreating monsoon.
- Conduct regular class quiz to make students memorise easily.
- Make use of wall maps while explaining the chapter on climate to enable students to understand the location of a station in relation to water bodies and their effects on the temperature and rainfall.
- Use wall maps in class to explain geographical reasons as these cannot be explained without proper knowledge of reading a map.
- Give sufficient practice of reasoning-based questions to ensure that the concepts are clear.
- Clearly explain the different sources of rain in winter with the help of appropriate examples to avoid any confusion
- Lay emphasis on writing of units in the calculation related questions.
- Provide regular practice of questions related to climatic data in class.
- Discuss in detail the method to know the location of a place with reference to the sea coast and provide examples of the same.

MARKING SCHEME

Question 4

| (i) | Himalayas block the cold Siberian winds / cold winds coming from the north / coming from Siberia and also intercept / stop the monsoons forcing them to bring rains everywhere in the country. Thus towards north of Himalayas it is cold and dry and towards its south its warm and humid. | | | | | | | | | | | | | | |
|---|---|--------------------|--------------------|----------------------|-----------------------|---|----------------------------|------------------|--------------------|-------------------|-------------------------------------|------------------------------|--------------------------|--|---|
| (ii) | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">South West Monsoon</th><th style="width: 50%; text-align: center;">Retreating Monsoon</th></tr> </thead> <tbody> <tr> <td>On-shore/sea to land</td><td>Off-shore/land to sea</td></tr> <tr> <td>Pressure condition – low pressure over land and high pressure over sea.</td><td>Reverse pressure condition</td></tr> <tr> <td>June – September</td><td>October – November</td></tr> <tr> <td>Advancing monsoon</td><td>Transition between rainy and winter</td></tr> <tr> <td>Rain in most of Indian areas</td><td>Rain in coromandel coast</td></tr> <tr> <td>periodic effects in South Asia and most of India</td><td>October heat withdrawal of South West Monsoon affects Coromandel coast.</td></tr> </tbody> </table> | South West Monsoon | Retreating Monsoon | On-shore/sea to land | Off-shore/land to sea | Pressure condition – low pressure over land and high pressure over sea. | Reverse pressure condition | June – September | October – November | Advancing monsoon | Transition between rainy and winter | Rain in most of Indian areas | Rain in coromandel coast | periodic effects in South Asia and most of India | October heat withdrawal of South West Monsoon affects Coromandel coast. |
| South West Monsoon | Retreating Monsoon | | | | | | | | | | | | | | |
| On-shore/sea to land | Off-shore/land to sea | | | | | | | | | | | | | | |
| Pressure condition – low pressure over land and high pressure over sea. | Reverse pressure condition | | | | | | | | | | | | | | |
| June – September | October – November | | | | | | | | | | | | | | |
| Advancing monsoon | Transition between rainy and winter | | | | | | | | | | | | | | |
| Rain in most of Indian areas | Rain in coromandel coast | | | | | | | | | | | | | | |
| periodic effects in South Asia and most of India | October heat withdrawal of South West Monsoon affects Coromandel coast. | | | | | | | | | | | | | | |
| (iii) | <p>(a) Bay of Bengal branch reaches Kolkata first. By the time it reaches Delhi, it is dry as it sheds the moisture on the way leaving less amount with it.</p> <p>(b) Shimla experiences snowfall in the winters and Ooty does not because Shimla is located at a much higher altitude than Ooty, in the Himalayas. Ooty is located in the Nilgiris in South India. Shimla is away from Equator and so snow line is low there whereas Ooty is closer to Equator.</p> <p>(c) Winter monsoons blow from land to sea in winter as a low pressure prevails on sea and a high pressure on land. Offshore has less moisture.</p> | | | | | | | | | | | | | | |
| (iv) | <p>(a) 32.6 degree C</p> <p>(b) August</p> <p>(c) It is located in the interiors/ it has a continental location.</p> | | | | | | | | | | | | | | |

Question 5

- (i) Why is Black soil found suitable for the production of cotton? (*Any two points*) [2]
- (ii) Give *one* difference between each of the following: [2]
- (a) Alluvial soil of *Uttarakhand* and alluvial soil of *West Bengal*.
 - (b) Transported soil and residual soil.
- (iii) With reference to *Laterite soil*, answer the questions that follow: [3]
- (a) How is Laterite soil formed?
 - (b) How can Laterite soil be made productive?
 - (c) Name *one* region where Laterite soil is found.
- (iv) (a) Mention *two* causes of soil erosion in India. [3]
- (b) Mention a soil conservation method suitable for hilly area.

Comments of Examiners

- (i) Most candidates answered this sub-part correctly. However, a few candidates failed to give the correct explanation and only mentioned that black soil is fertile in nature.
- (ii) (a) Some candidates failed to understand the question properly. Few candidates mentioned the alluvial soil of Uttarakhand as more fertile than alluvial soil of West Bengal. Additionally, some of them also mentioned the presence of khadar soil in Uttarakhand and Bhangar soil in West Bengal.
- (b) Many candidates were able to answer this question correctly. Some candidates wrote examples of residual and transported soils as differences.
- (iii)(a) Most candidates mentioned leaching as the process of formation. However, some candidates wrote only 'high temperature' or 'high rainfall' as separate points without correct explanation.
- (b) Some candidates wrote about the crops grown in laterite soil and incorrectly mentioned the friable nature of the laterite soil without correct explanation as to what should be added to the soil to increase productivity.
- (c) Some candidates wrote only western and eastern ghats instead of mentioning 'summits' of western and eastern ghats. A few candidates mentioned names of states instead writing about regions.
- (iv)(a) Some candidates mentioned 'agents of soil erosion' in place of 'causes of soil erosion'.
- (b) Most candidates answered this question correctly. However, some candidates mentioned 'shelter belts' as method of conservation. Some also wrote conservation schemes implemented by the government instead of mentioning specific methods of soil conservation in hilly areas

Suggestions for teachers

- Lay emphasis on the characteristics of soil that makes it suitable to grow certain types of crops.
- Ensure more practice of application - based questions.
- Familiarize students with the names of states and the regions with help of the "Physical Map of India" and ensure that students can relate to the study area with better understanding.
- Explain the difference between Khadar and Bhangar using the map of India for conceptual clarity.
- Emphasise that examples are not considered as differences.
- Encourage students to write answers in complete sentences with proper explanation along with characteristics of each soil type and explanation using the map to show the area.
- Discuss the composition and characteristics of each soil type in detail as per the scope of the syllabus.
- Explain the difference between region and state.
- Emphasise that when the question demands 'region,' writing names of states is not sufficient.
- Discuss the difference between the causes and agents of soil erosion. Also, explain that causes are the reasons which leads to removal of soil and make them aware of various reasons.
- Ensure that students answer the questions in an effective manner.
- Clearly explain the conservation methods specific for hilly areas and make students aware of the correct terminology to describe it.

MARKING SCHEME

Question 5

| | |
|-------|--|
| (i) | <ul style="list-style-type: none"> - It is moisture retentive, self-ploughing capacity, rich in minerals due to volcanic origin. - Rich in carbonates of ca and mg - Rich in LIMCAP - Aerated <p style="text-align: right;"><i>(any two points)</i></p> |
| (ii) | <p>(a) Alluvial soil in Uttarakhand and Alluvial in West Bengal.</p> <ul style="list-style-type: none"> - Uttarakhand: coarse-grained, porous alluvial soil /old/Bangar/less fertile/darker inland - West Bengal- fine-grained, compact alluvial soil/new/Khadar/fertile/deltaic or coastal/replenished, lighter <p>(b) Transported and residual soil</p> <ul style="list-style-type: none"> - Transported- Ex situ; transported by running water and found far from their parent rock./not defined profile/formed by denudation. - Residual- In-situ; found where they are formed, over the parent rocks./ well defined profile/ formed by weathering |
| (iii) | <p>(a) It is formed by leaching of essential minerals down the soil profile leaving the top soil infertile. /alternate wet and dry season/high temperature, heavy rains/ weathering of lateritic rocks/desilication</p> <p>(b) Use of fertilizer and irrigation facility/addition of lime</p> <p>(c) - Summits of Western & Eastern Ghats/Rajmahal hill</p> <p>- Part of Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra, West Bengal, Odisha, Jharkhand, Kerala, Assam, Meghalaya, Goa.</p> |
| (iv) | <p>(a) Deforestation / heavy rain / faulty farming practice / shifting agriculture/ overgrazing/mining/quarrying</p> <p>(b) Contour ploughing / Terrace cultivation / Strip cropping / crop rotation / social forestry / afforestation/ dams/ intercropping/ cover crops/ agroforestry/ contour binding.</p> |

Question 6

- (i) How is tropical monsoon forest useful for the Indian economy? *(Any two points)* [2]
- (ii) Mention the climatic condition that leads to the development of tropical desert vegetation. [2]
- (iii) Give a reason to explain each of the following: [3]
- (a) Mountains have varied vegetation.
 - (b) Stilt like / aerial roots are a typical feature of littoral forest.
 - (c) The tropical evergreen forests do not look bare at any time of the year.
- (iv) (a) How has the rising population of India resulted in the loss of forest cover? *(Any one point)* [3]
- (b) Mention *any two* forest conservation methods that may be adopted to protect the forests.

Comments of Examiners

- (i) Several candidates lost marks as they wrote only the characteristics of Tropical Monsoon forests.
- (ii) Some candidates got the climatic conditions incorrect as their range of temperature and rainfall did not match with the one furnished in the marking scheme.
- (iii) (a) Many candidates were unable to furnish the keywords for this question. They emphasised only on altitude instead of variations in temperature and rainfall while answering why 'mountains have varied vegetation'.
- (b) Some candidates mentioned the climatic conditions namely temperature range and rainfall prevalent in littoral forests, instead of specifically writing about adaption of the root systems of the vegetation found here due to the nature of marshy land.
- (c) Many candidates lacked conceptual clarity for this question as they wrote trees of the Tropical Evergreen forests never shed their leaves, instead of at different times of the year.
- (iv)(a) This question was well answered by most of the candidates.
- (b) Some candidates mentioned forest policy instead of 'method' for forest conservation. Some candidates were not aware of two methods and only mentioned afforestation.

Suggestions for teachers

- Teach the characteristics and uses of each vegetation belt separately and guide students to demarcate the characteristics and uses.
- Facilitate repeated revision for learning the temperature and rainfall conditions accurately and along with worksheets on a regular basis.
- Explain annual rainfall, soil distribution and temperature conditions, the growth and characteristics of vegetation belts in India using map for better conceptual clarity.
- Explain in detail the meaning of the term 'littoral' forests and the specific characteristics of the natural vegetation that grows in this area along with their adaptation.
- Teach and highlight the basic differences between evergreen and deciduous trees.
- Provide regular practice and clear understanding of the difference between specific methods and schemes of forest conservation.

MARKING SCHEME

Question 6

| | |
|-------|---|
| (i) | This forest has hardwood tree, the wood of which will yield durable wood for furniture / construction work/ raw material for industry, paper, wax, gum, lac, raisin, honey, incense sticks, cosmetic, medicinal, livestock rearing, handicraft, perfumes, soaps, oil. |
| (ii) | Temperature: 25 – 35° C/ Scanty seasonal rain, long dry spell/ less than 80% humidity Rain: 25 cm – 100 cm / less than 50 cm |
| (iii) | (a) Mountains display varied vegetation In a mountain, temperature and rainfall varies with altitude / Temperature and rainfall are both high at lower altitudes and hence have denser vegetation. (b) Aerial roots are a typical feature of the trees of the tidal forest. |

| | |
|------|--|
| | <p>The marshy ground of tidal forests has very compact soil that are inundated with saline water, making it difficult for roots to respire. Thus, the plants grow roots above the ground to absorb oxygen. Survive in soft and shifting mud for breathing.</p> <p>(c) The tropical evergreen forests do not look bare at any time of the year.</p> <p>Areas of tropical rain forest receive rainfall throughout the year. Hence, they do not need to shed all their leaves to conserve water during the dry season. Therefore, they never look bare / old leaves fall and new leaves grow.</p> |
| (iv) | <p>(a) - Forests converted to agricultural farms to feed the growing population. - Increased urbanization/ infrastructure - Growing industrialization/ mining / quarrying - Increased demand for forest products like timber</p> <p>(b) Afforestation Reforestation Social forestry farm forestry/ agro forestry/ check overgrazing/ energy plantation/develop separate grazing ground/ controlled grazing/ Silviculture.</p> |

Question 7

- (i) Mention *one* advantage and *one* disadvantage of using tank irrigation. [2]
- (ii) (a) What is the advantage of using Drip irrigation? [2]
 (b) Why is Drip irrigation not practiced on a large scale in India?
- (iii) Give a reason to explain each of the following: [3]
 (a) Sprinkler irrigation is gaining popularity in recent times.
 (b) Tube well irrigation is used in Punjab.
 (c) North India has more area under canal irrigation.
- (iv) [3]



- (a) Name the water conservation practice shown in the above picture.
 (b) How does this system help to reduce floods?
 (c) Why is water conservation necessary? (*Any two reasons*)

Comments of Examiners

- (i) Most candidates mentioned the advantage of tank irrigation. However, some candidates faltered in writing about the disadvantage of tank irrigation. Some candidates mentioned the nature of the terrain instead of highlighting the advantage, while others mentioned the characteristics of tank irrigation.
- (ii) (a) Most candidates were able to answer this sub-part correctly. However, a few candidates mentioned the process of watering in Drip irrigation instead of mentioning its advantage.
- (b) Some candidates mentioned loss of water by evaporation in their answer instead of pointing to its expensive nature or clogging of pipes in Drip irrigation.
- (iii) (a) Some candidates were not able to understand the question well and mentioned the method of Sprinkler irrigation.
- (b) A few candidates wrote the answer correctly. However, most of the candidates, instead of writing high underground water table wrote flat area which was not an appropriate answer.
- (c) Only a few candidates answered this question correctly. Most of them wrote high underground water table instead of writing the presence of perennial rivers, soft soil and fertile agricultural land.
- (iv) (a) Many candidates answered this question correctly. However, a few candidates committed errors by explaining rainwater harvesting without mentioning the name.
- (b) Majority of the candidates gave correct answers.
- (c) Most of the candidates answered this question correctly.

Suggestions for teachers

- Explain all methods of irrigation in depth so that students can write the benefits and drawbacks of each method.
- Explain the advantage and disadvantage of each method through a comparative study in a tabular form for better understanding of students.
- Guide students to read questions carefully before attempting to answer.
- Clarify to the students that characteristics and benefits of irrigation cannot be same.
- Teach the modern methods of irrigation in detail with the help of a comparative table for better understanding.
- Make use of pictures and videos to provide clarity of concepts to the students.
- Provide more practice of reasoning questions.
- Explain in detail with examples which means of irrigation is available in which area and why it is available or popular in that area.
- Ensure maximum practice of picture related questions and answers during classroom teaching.
- Explain the importance of rain water harvesting in the context of flood control, preventing soil erosion, etc. in the present scenario.
- Explain the need for water conservation in the present scenario with the help of examples.

MARKING SCHEME

Question 7

| | |
|-------|---|
| (i) | <p>Advantage:</p> <ul style="list-style-type: none"> - Simple / easy to build/subsidiary occupation - Pisciculture - Cheap <p>Water used for domestic purpose/ help in increasing groundwater.</p> <ul style="list-style-type: none"> - It stores surplus rain water which could otherwise go waste. <p>Disadvantage:</p> <ul style="list-style-type: none"> - They dry up when they are needed the most/dry up in summer/ seasonal - Silting up of the tanks is common/ problem of siltation - They occupy large area which could have been used for other productive purposes./pollution of water/ loss of water by evaporation as it is shallow. |
| (ii) | <p>(a) Drip irrigation conserves water as the irrigation water reaches the roots where it is needed. Reduced loss of water by evaporation</p> <p>(b) Expensive to develop/ need of proper infrastructure/ high maintenance cost/ clogging of pipes.</p> |
| (iii) | <p>(a) Sprinkler irrigation is gaining popularity in recent times.</p> <ul style="list-style-type: none"> - It conserves water as there is no loss of water by evaporation./ even distribution - No loss of water by seepage./less water/ irrigate large area/ best suited for arid areas. <p>(b) Tube-well irrigation is used in Punjab because cheap hydel power is available. There is plenty of ground water and land is fertile so the cost is recovered. / soft soil easy to dig</p> <p>(c) In north India, there is flat land area and perennial rivers / large arable land / fertile soil/ soft soil.</p> |
| (iv) | <p>(a) Roof-top rainwater harvesting / rainwater harvesting.</p> <p>(b) It collects rainwater and reduces runoff and flooding.</p> <p>(c)</p> <ul style="list-style-type: none"> - Due to increase in population, there is a tremendous increase in demand for water. - Much water gets polluted due to faulty human activities - Much water gets wasted - Increase demand of water due to industrialization and urbanization. - Reduction of underground water. - Overexploitation of groundwater has lowered the groundwater table considerably. - Erratic, sporadic and seasonal rain for irrigation. |

Question 8

- (i) (a) Name *any three* varieties of coal produced in India. [2]
(b) Name the *variety of coal* widely used in Iron and Steel Industries of India.
- (ii) (a) Name the state that is the largest producer of iron ore in India. [2]
(b) Name *any one* mining area of Iron ore from the state mentioned by you.
- (iii) (a) Mention *two* ways in which *Hirakud dam* has helped the people of Odisha? [3]
(b) Across which *river* is the *Hirakud dam* built?
- (iv) Give reasons for each of the following: [3]
(a) *Geothermal* energy is not popular in India.
(b) *Solar energy* is gaining popularity.
(c) *Petroleum* is considered a harmful source of energy.

Comments of Examiners

- (i) (a) Types of iron ore such as magnetite, haematite, etc. was wrongly interpreted as varieties of coal produced in India and hence many candidates gave incorrect answer.
(b) Several candidates got this part wrong as they identified the varieties of coal wrong.
- (ii) (a) Most candidates were unable to identify the largest iron ore producing state correctly.
(b) The mining area subsequently was answered wrongly by many candidates.
- (iii)(a) Majority of the candidates responded well giving correct answer to this question.
(b) Most of the candidates answered this question correctly.
- (iv)(a) Many candidates failed to understand this question and could not support their answer with appropriate reason as to why geothermal energy is not popular in India.
(b) Majority of the candidates answered this question correctly.
(c) Many candidates were able to answer it correctly.

Suggestions for teachers

- Make use of visual presentations such as PPT presentations to show students the different varieties of coal and iron-ore with their uses.
- Explain the varieties of coal with the help of a flow chart.
- Guide students to write answers in tabular form to help them to memorise it easily.
- Encourage students to write the names of the mineral producing states and mining areas in tabular form to aid them in memorising.
- Lay stress on the key words while explaining why geothermal energy is not popular, such as - confined to few areas, expensive to develop, less energy generated etc.

MARKING SCHEME

Question 8

| | | |
|-------|--|-------------|
| (i) | (a) Anthracite / Bituminous / Lignite / Peat (b) Bituminous | (Any three) |
| (ii) | (a) Odisha. (b) Gurumahishani, Badampahar, Sulaipat in Mayurbhanj district, Bonai in Sundargarh, Keonjhar. | (Any one) |
| (iii) | (a) Hirakud dam controls floods, generates power, supplies water for irrigation, canals of the dam serve as inland waterways, dam site is a popular tourist destination. Pisciculture or fishing is done in the lake behind the dam / recreation/ drinking water/ eradication of malaria/ prevents soil erosion (b) Mahanadi. | (Any two) |
| (iv) | (a) It is confined to few areas / expensive to develop / less energy is generated/ Causes air and water pollution (b) - India is a tropical nation with ample sunshine/ long summer/ 300 sunny days/ no pollution/ low maintenance /inexhaustible/ecofriendly/diverse use - Subsidy by Government (c) It causes pollution/Inflammable | |

Question 9

- (i) Why is agriculture considered an important sector of Indian economy? (Any two points) [2]
- (ii) (a) What is *mixed farming*? [2]
(b) Mention *any one* advantage of mixed farming.
- (iii) Give *one* reason to explain each of the following: [3]
(a) West Bengal is a leading producer of jute.
(b) Millets are fast becoming the popular food crops.
(c) More than two ratoon crops are not advisable for sugarcane farmers.
- (iv) (a) With reference to tea cultivation, explain the term 'fine pluck'. [3]
(b) Name the Indian state that leads in coffee production.
(c) Why is cotton grown as a Kharif crop in India?

Comments of Examiners

- (i) Many candidates answered this question correctly. However, few candidates were not able to draw relationship between agriculture and Indian economy to state its importance.
- (ii) (a) Most of the candidates were unable to explain this question clearly as they misunderstood mixed farming with mixed cropping.
 (b) Since it was a linked question, if the answer for (ii) (a) was incorrect, then this sub part was also incorrect for most of the candidates.
- (iii) (a) Some candidates mentioned the nature of jute cultivation in West Bengal instead of highlighting on the physical and climatic characteristics that makes it the largest producer and, thus, failed to answer it appropriately.
 (b) Most candidates answered this subpart correctly. However, some candidates mentioned that millets require less water for growth.
 (c) This subpart was answered correctly by the majority of the candidates. A few candidates wrote definition of ratooning which was incorrect.
- (iv) (a) Some of the candidates were not able to explain the term 'fine pluck' correctly.
 (b) Many candidates mentioned Tamil Nadu and Andhra Pradesh instead of Karnataka as leading state of coffee production.
 (c) Most of the candidates were not able to explain why cotton is grown as a kharif crop in summer season.

Suggestions for teachers

- Emphasise on explaining the economic benefits of agriculture.
- Ensure that the meaning of the important terms is grasped well by the students in order to build conceptual clarity.
- Explain the different types of farming clearly to students for conceptual clarity.
- Guide students to read the questions carefully.
- Discuss the climatic characteristics for the growth of jute in West Bengal.
- Provide more practice of reasoning questions and instruct students to read the questions carefully.
- Ensure that the meaning important term is understood by the students and facilitate repeated revision for the same.
- Discuss the concept of 'fine pluck' in tea cultivation along with its benefits.
- Encourage students to remember the names of all leading states of different food crops and cash crops.
- Ensure that the meaning of the different cropping season is well explained in class along with the growth requirements for different crops.

MARKING SCHEME

Question 9

| | |
|-------|---|
| (i) | <ul style="list-style-type: none"> - Major source of employment - Provides food to the large Indian population - Surplus is exported to earn foreign exchange - Provides raw materials to agro-based industries - Contributes to national income/ market for industrial products/helpful for livestock rearing/ earning for railways for movement of agricultural products. <p style="text-align: right;"><i>(Any two)</i></p> |
| (ii) | <p>(a) Growing crops and raising animals simultaneously on the same farm.</p> <p>(b)</p> <ul style="list-style-type: none"> - Low wastage because agro-residue is used as animal fodder & animal dung is used as manure in the agricultural fields - Less risk for the farmer as in case of crop failure he can sustain on income from livestock farming - Higher and more steady income for the farmer. <p style="text-align: right;"><i>(Any one)</i></p> |
| (iii) | <p>(a) West Bengal is a leading producer of jute.</p> <ul style="list-style-type: none"> - Warm (average temperature of 25-35° C - humid climate (about 90% humidity) - Heavy rainfall (more than 150-200 cm annually) - Rich alluvial soil - Plenty of soft water from the Hooghly river <p style="text-align: right;"><i>(Any one)</i></p> <p>(b) Millets are becoming popular food crops/ Healthy crops</p> <ul style="list-style-type: none"> - They are nutritious food crops - Cheaper option for those who cannot afford rice & wheat - Residue makes good animal fodder. - Initiative by government <p style="text-align: right;"><i>(Any one)</i></p> <p>(c) More than two ratoon crops are not advisable for sugarcane farmers.</p> <ul style="list-style-type: none"> - Yield declines - The risk of pest infestations increases - Roots may be infected with diseases. - Low sucrose content. - Soil exhausting crop <p style="text-align: right;"><i>(Any one)</i></p> |
| (iv) | <p>(a) Plucking of two leaves and a bud which gives rise to good quality tea.</p> <p>(b) Karnataka</p> <p>(c) Uniformly high temperature ranging from 21° - 30° C is required during the growing period. This temperature is experienced in tropical summers.</p> <p>200 frost free days/ frost is harmful / rain is less likely harvest.</p> |

Question 10

- (i) (a) Based on the ownership, what type of industry is Visakhapatnam Steel Plant? [2]
 (b) What is meant by cooperative sector industry?
- (ii) Explain the following terms: [2]
 (a) Sericulture
 (b) Integrated steel plant
- (iii) Give *one* reason to explain each of the following: [3]
 (a) *Mini-steel plants* help in conservation of coal.
 (b) Location of *sugar industry* is shifting to the southern part of India.
 (c) The electronic industry is growing at a fast rate.
- (iv) (a) State *two* conditions that favour the location of cotton textile industry in Ahmedabad. [3]
 (b) State *any one* advantage of locating Iron and Steel industry at Rourkela.

Comments of Examiners

- (i) (a) This question was attempted by almost all the candidates and majority of them answered private sector, which was incorrect. Most of the candidates are not familiar with the concept of types of industries.
 (b) Many candidates were unable to define cooperative sector and incorrectly explained that cooperative is under the government and private companies.
- (ii) (a) Most the candidates incorrectly explained sericulture as production of silk.
 (b) Majority of the candidates failed to explain integrated steel plant and gave vague answers.
- (iii) (a) Most of the candidates have written the meaning of mini steel plant without explaining it helps in conservation of coal and, thus, lost marks.
 (b) Many candidates have correctly explained the reason behind shifting of sugar industry toward south. However, few have mentioned the loss of sucrose, which was not required.
 (c) Many candidates failed to explain the growth of electronic industry appropriately and answered this question vaguely.
- (iv) (a) Most of candidates answered this question correctly.
 (b) Many candidates were confused about the advantage of location of iron and steel industries at Rourkela. Specific location for various minerals & other advantage were not mentioned instead candidates only wrote about the availability of coal, iron ore, water, etc.

Suggestions for teachers

- Discuss manufacturing industries with the students to help them understand the term.
- Clearly explain rearing and its meaning along with the production.
- Explain the concept of how the byproducts of one industry can be used as the raw material for other industries.
- Facilitate regular revision to help students score better.
- Guide students to read and practice the questions properly.
- Discuss with the help of a table each type of industry and the areas of availability of minerals along with other features so that students are able to write their answers specifically.

MARKING SCHEME

Question 10

| | |
|-------|--|
| (i) | <p>(a) Public Sector industry</p> <p>(b) When a group of individuals own and operate an industry collectively.</p> |
| (ii) | <p>(a) Sericulture - The rearing of silkworms for the production of silk threads.</p> <p>(b) Integrated steel plant - When all the processes of steel-making take place in one manufacturing unit.</p> |
| (iii) | <p>(a) Mini-steel plants conserve coal as they operate on electricity and do not use coal for smelting.</p> <p>(b) Sugar industry is gaining popularity in the southern part of India.</p> <ul style="list-style-type: none"> - Favourable climatic conditions like temperature, rainfall, frost free days ensures steady supply of sugarcane. - Fertile black soil gives superior quality yields - Large land holdings - Scientific methods of farming, improved machinery - Mills located near sugarcane fields - Long crushing season - Cooperative farming - Humid climate - Sugar lobby <p style="text-align: right;"><i>(Any one)</i></p> <p>(c) The electronic industry is growing at a rapid pace.</p> <ul style="list-style-type: none"> - All digital devices / gadgets - Computers - Robots - Artificial Intelligence - Useful for education, defence, research, entertainment, offices, medical field, space exploration, meteorological field, postal services. |
| (iv) | <p>(a) - Adequate supply of good quality raw cotton</p> <ul style="list-style-type: none"> - Availability of cheap labour - Cheap hydel power from nearby area - Port facility / transport facility - Availability of capital/ banking sector - humid climate/ market <p style="text-align: right;"><i>(Any two)</i></p> <p>(b) - Iron ore from Mayurbhanj and Keonjhar in Odisha</p> <ul style="list-style-type: none"> - Coal from Raniganj and Jharia close to it - Limestone and Dolomite from Birmittapur Odisha - Hydroelectric power from Hirakud project in Odisha - Water from Sankh and Koel River - Manganese- Naomundi/ Keonjhar <p style="text-align: right;"><i>(Any one)</i></p> |

Question 11

- (i) Why is *road transport* an important means of transport in India? (*Any two reasons*) [2]
- (ii) Give a reason for each of the following: [2]
- Northern plain is best suited for the development of Railways.
 - Railways are managed completely by the Central Government.
- (iii) Mention *two* advantages and *one* disadvantage of Inland water transport. [3]
- (iv) Why has airway become more popular than other means of transport? (*Any three reasons*) [3]

Comments of Examiners

- (i) Most of the candidates answered this question correctly.
- (ii) (a) Many candidates were not clear with the concept of northern plains with respect to railway. This resulted in answers that were mostly about importance of railways, rather than its relation to the plains with respect to construction.
- (b) Most of the candidates could not relate the difference between state and central government with respect to management of railway.
- (iii) Majority of the candidates got the answer correct.
- (iv) Most of the candidate had written that air transport was comfortable and safe, which was incorrect and, thus, lost marks.

Suggestions for teachers

- Explain and clarify the basic concept in class by explaining important terms in a more elaborate manner.
- Discuss the various issues related to the railways in detail with an emphasis on the role of the Central Government.
- Explain the concepts clearly to address misconceptions and common stereotypes regarding certain topics.

MARKING SCHEME

Question 11

| | |
|------|---|
| (i) | <ul style="list-style-type: none"> - Road transport remains the most popular mode of transportation as road construction is easier and simpler. - Roadways provide door to door service. - Roadways are cheaper. - Roadways link other modes of transport. - Roadways are favourable for transporting perishable commodities. - Flexible usage - Can be laid in difficult terrain - Can be used 24*7 <p style="text-align: right;">(<i>Any two</i>)</p> |
| (ii) | <p>(a) Northern India has flat lands, softer rocks making construction easier, demand for railways is high because of high density of population, demand for movement of agricultural and industrial products is high.</p> |

| | |
|-------|---|
| | <p style="text-align: right;"><i>(Any one)</i></p> <p>(b) Railways are always managed by central government as its construction involves heavy expenses that is difficult to be managed by private individuals. Moreover, railways are the principal mode of transport for both freight and passengers that needs attention and management of central government. Links several state so central government intervention is a must/ influences Indian economy/ defence police and army.</p> |
| (iii) | <p>Advantages of water transport:</p> <p>Fuel efficient/ environment friendly/ cheapest mode of transport/ most suitable for carrying bulky goods.</p> <p style="text-align: right;"><i>(Any two)</i></p> <p>Disadvantage:</p> <p>Slowest mode of transport/ dependent on weather conditions/ Indian fleet is old and needs replacement/ slow handling of cargo at the ports causing delay/ Can be developed in only few areas.</p> <p style="text-align: right;"><i>(Any one)</i></p> |
| (iv) | <ul style="list-style-type: none"> - Air transport is the fastest mode of transport. Indispensable for business people, for defence, during times of emergency like epidemics, floods and earthquakes. - Air transport is gaining popularity due to private airlines offering attractive schemes and low air fare. - Drop in air fare. - Most significant in hilly and border areas which are not accessible by surface transport. <p style="text-align: right;"><i>(Any three)</i></p> |

Question 12

- (i) With reference to the picture below, answer the questions that follow: [2]



- (a) Which waste management method is depicted here?
- (b) State *one* way in which this method may be implemented at our home.
- (ii) Explain how waste accumulation can be harmful. *(Any two points)* [2]
- (iii) Explain how waste generated in following sectors *may be made useful*. *(Give one example for each)* [3]

- (a) Household
(b) Industry
(c) Agriculture
- (iv) (a) Give *two* uses of composting. [3]
(b) Why are landfills set up far away from the city? (*Any two reasons*)

Comments of Examiners

- (i) (a) Many candidates answered this question correctly. However, some candidates wrongly interpreted the picture to be about the 3 R's namely, reuse, reduce and recycle and answered incorrectly.
(b) This was a follow up question of the previous one, hence those candidates who got part (i) (a) wrong also got this sub-part incorrect.
- (ii) Most of the candidates answered correctly.
- (iii) (a) Most of the candidates gave correct answer to this question. Some candidates gave examples of domestic waste instead of highlighting the way in which it can be made 'useful'.
(b) Some candidates mentioned about the pollution caused by Industrial waste instead of mentioning the ways in which the specific waste can be put to 'repurpose' and 'reuse'.
(c) Some candidates mentioned the names of the agricultural waste without explaining its uses.
- (iv) (a) Some candidates mentioned the 'methods of composting' instead of highlighting its two 'uses'. A few candidates were able to mention only one use correctly.
(b) Most candidates answered this question correctly.

Suggestions for teachers

- Ensure more practice of picture-based questions and guide students to look at pictures carefully and answer accordingly.
- Discuss different methods of waste disposal and emphasise on the use of correct terminology while writing answers.
- Discuss the need of waste management in detail with examples.
- Provide more practice of application-based questions and explain different types of waste with examples and also the new products which can be made out of waste.
- Discuss the reuse of various industrial waste in classroom with real life examples.
- Facilitate revision of concept with clear understanding and explain the concept of 3 R's with examples from agricultural sector.
- Emphasize on the advantages and disadvantages of composting, and various waste disposal methods along with real life examples for better understanding of students.
- Explain the 'impact of waste accumulation' on the environment in detail and with examples.

MARKING SCHEME

Question 12

| | |
|-------|---|
| (i) | <p>(a) Waste segregation/segregation</p> <p>(b) We can dispose biodegradable waste like kitchen waste and non-biodegradable waste like plastic waste into separate bins.</p> |
| (ii) | <ul style="list-style-type: none"> - Gaseous waste causes diseases of the lungs - Mercury poisoning cause Minamata disease. - Wastes reduces the oxygen level in water (eutrophication) that kills aquatic organisms. - Wastes cause biomagnification that prove toxic for the aquatic creatures. - Hazardous nuclear waste - Ground water pollution by seepage from open dumps. - Spoils landscape/foul smell/aim of water pollution/breeding ground for flies, mosquitoes, rodents and scavengers. <p style="text-align: right;"><i>(Any two)</i></p> |
| (iii) | <p>(a) - Recycle of old newspaper, glass articles metal scraps, plastic and converting it into useful articles.</p> <ul style="list-style-type: none"> - Composting of kitchen waste. - Reusing the articles like tin boxes for storage. <p>(b) Using industrial waste like bagasse for making cardboard, molasses for alcohol / distilleries, press mud for shoe polish/ carbon paper or wax/road by fly ash/fly ash as cement/bricks/scrap from steel plants used in mini steel plants.</p> <p>(c) Biofuel may be made by farm waste /composting and tar making/ biogas/fodder/cardboard. <i>(One each)</i></p> |
| (iv) | <p>(a) Compost when added to soil makes it fertile naturally. It helps in water retention and makes soil compact/ suppress plant disease/ absorb odour.</p> <p style="text-align: right;"><i>(Any two)</i></p> <p>(b) -To avoid spoilage of landscape</p> <ul style="list-style-type: none"> - To avoid spreading of pollutants from the garbage/avoid greenhouse gas emission. - Prevent health hazards and pest infestations - To avoid groundwater contamination in inhabited areas - Foul smell - Requires large area - To keep our city clean <p style="text-align: right;"><i>(Any two)</i></p> |