

Exercise

General Instructions:

- (i) Question no. **1-15** are every short answer questions. These are required to be answered in **one sentence** each.
- (ii) Questions no. **16-30** are short answer questions. Answers to them should normally not exceed **70** words each.
- (iii) Questions no. **31-45** are long answer questions. Answer to them should normally not exceed **100** words each.
- (iv) Answer should be brief and to the point and the above limits should be adhered to as far as possible.

Very short answer type

(1 mark)

- Question 1.** Define drainage.
- Question 2.** Name the Indian lake famous for shikaras. Where is it situated?
- Question 3.** Which Indian river shifts channel frequently?
- Question 4.** Name the state which has largest salt water lake of India.
- Question 5.** Name the peninsular rivers of India that form estuary.
- Question 6.** Which two places experience floods every year because of Brahmaputra?
- Question 7.** What do you understand by river system?
- Question 8.** Which river of the world has largest drainage basin?
- Question 9.** Define drainage basin.
- Question 10.** Name two lagoons of India.
- Question 11.** Name the second biggest waterfall of India. On which river it is located?
- Question 12.** What is the percentage of fresh water available for human use? In what form is it mostly found?

- Question 13.** What do you understand by perennial rivers?
- Question 14.** Name the man-made lake of India and the river valley project on it.
- Question 15.** Name two lakes of large extent that are referred as sea.

Short answer type

(2 & 3 marks)

- Question 16.** Define the term water divide. Name the place that act as the water divide for two main northern rivers of India. Also name the rivers.
- Question 17.** Despite its long course river Brahmaputra has less silt in Tibetan part. Why?
- Question 18.** Mention some of the main features of Indus water Treaty.
- Question 19.** Which peninsular river of India is known as "Dakshin Ganga" and why?
- Question 20.** Why are Himalayan rivers perennial in nature?
- Question 21.** Name the tributaries of Indus.
- Question 22.** Compare the eastward and westward flowing peninsular rivers of India.
- Question 23.** Name the right bank and left bank tributaries of Ganga.
- Question 24.** Which is the world's largest delta? Give any two features of it.
- Question 25.** What do you understand by braided stream? Name the river that forms the braided stream and where.
- Question 26.** Name the river that originates from Mahabaleshwar. What is the total length of the river? Name the states drained by this river.
- Question 27.** Define gorge. How many peninsular rivers flow through a gorge? Name the rivers.
- Question 28.** Give an account of Krishna river.
- Question 29.** Name the source of river Tapi. Also name its main tributaries.
- Question 30.** Write a note on Kaveri Basin.

Long answer type

(5 marks)

- Question 31.** Evaluate the role of rivers in economy.
- Question 32.** Give the causes of river pollution.
- Question 33.** Suggest measures to control the river pollution.
- Question 34.** Write a note on Ganga Action Plan.
- Question 35.** Give an account of the lakes of India.
- Question 36.** What is the importance of lakes?
- Question 37.** Differentiate between the Himalayan and peninsular rivers.
- Question 38.** Diagrammatically explain the various drainage patterns.
- Question 39.** Discuss five main characteristics of Indus river basin.
- Question 40.** Give any five features of Ganga basin.
- Question 41.** Write an account of Brahmaputra basin.
- Question 42.** Explain any five characteristics of Narmada basin.
- Question 43.** Rivers are considered as the lifelines of the human civilisation. Justify giving suitable examples.
- Question 44.** Distinguish between delta and estuary.
- Question 45.** On the map of India locate the following:
- Lake Wular
 - Chilka lake
 - River Luni
 - Lake Sambar
 - NagarjunaSagar Dam

HOTS

- Question 46.** Which one of the following cities of India is not located on a river bank?
- Haridwar
 - Allahabad
 - Shillong

D. Varanasi

- Question 47.** In which of the following states are Nainital and Bhimtal located?
A. Jammu and Kashmir
B. Himachal Pradesh
C. Uttar Pradesh
D. Uttarakhand
- Question 48.** Which one of the following freshwater lakes is the largest?
A. Wular
B. Loktak
C. Nainital
D. Dal
- Question 49.** The Amravati, Bhavani, Hemavati and Kabini are the tributaries of river_____
- Question 50.** Which of the following states is not drained by the Godavari river?
A. Maharashtra
B. Orissa
C. Andhra Pradesh
D. Chhattisgarh
- Question 51.** Which place is located on the water divide between the Indus and the Ganga river system ?
A. Ambala
B. Agra
C. Haridwar
D. Allahabad
- Question 52.** Which kind of a drainage pattern is formed when tributaries join rivers at almost right angles?
A. Dendritic drainage
B. Trellis drainage
C. Rectangular drainage
D. Radial drainage
- Question 53.** Which among the following tributaries of Ganga joins from the peninsular uplands ?
A. Gandak
B. Kosi
C. Ghaghara
D. Son
- Question 54.** What is the name of the Brahmaputra river in Bangladesh?
A. Jamuna
B. Dibang
C. Lohit
D. Tsangpo
- Question 55.** Sivasamudram, one of the biggest waterfall of India is made by which river :
A. Krishna
B. Kaveri

- C. Godavari
- D. Mahanadi

Value Based

- Question 56.** The needs and demands of human beings have led to overutilization and pollution of rivers and lakes. Which of the following values can bring about a positive change in this situation?
- A. Care and Cleanliness
 - B. Unity
 - C. Celebrating diversity
 - D. Understanding
- Question 57.** Rivers flow across the countries breaking every barrier. List the values you learn from this quality of the rivers.

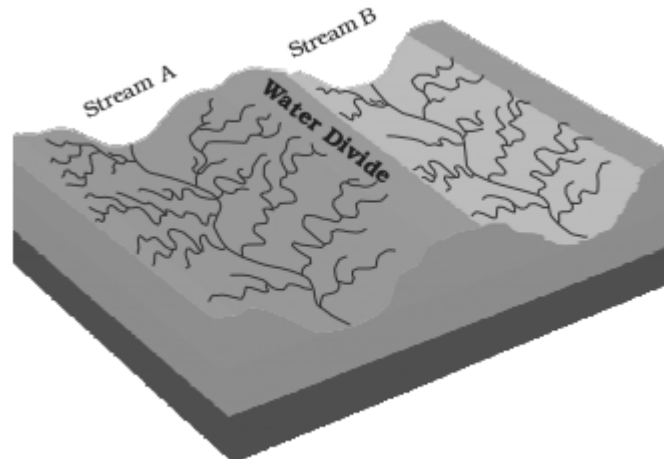
Answer Key

Very short answer type

(1 mark)

- Answer 1.** The term drainage may be defined as the river system of any area.
- Answer 2.** The Dal Lake is a very famous lake of India popular for shikaras, and it is situated in the valley of Srinagar in Kashmir.
- Answer 3.** The Brahmaputra is the Indian River, which shifts its channels very frequently.
- Answer 4.** Orissa is the state of India which has the largest saltwater lake.
- Answer 5.** The Narmada and the Tapi Rivers are the peninsular rivers of India which form estuaries.
- Answer 6.** Assam and Bangladesh are the two places that experience floods every year because of the Brahmaputra.
- Answer 7.** A river system may be defined as a river along with its tributaries.
- Answer 8.** Amazon River has the largest drainage basin in the world.
- Answer 9.** The drainage system is defined as the area which is drained by a single river system.
- Answer 10.** The Chilika and Pulicat lakes are the two lagoons of India in the eastern coasts.
- Answer 11.** The Jog Falls is the second biggest waterfall of India, which is located in Kaveri River.
- Answer 12.** About 3% of freshwater is available for human use, and it is mostly found in the form of glaciers and ice.
- Answer 13.** Perennial Rivers are defined as the rivers which have water flow throughout the year.
- Answer 14.** The Gobind Sagar Lake is the man-made lake of India and the river valley project is the Bhakra Nangal Project.
- Answer 15.** The Caspian and the Dead are two Lakes of the large extent that are referred to as thesea.

Answer 16. Water divide is defined as any elevated area, such as a mountain or an upland that separates the two drainage basins.



Water divide

Ambala is the place that acts as the water divide for two main northern rivers of India, and the names of the rivers are the Indus and the Ganga.

Answer 17. In Tibet, the river carries a smaller volume of water and less silt as it is a cold and a dry area.

When the river enters India the volume of water increases by the

- Tributaries added into it
- High rainfall
- Melting snow

Therefore, Brahmaputra in its Tibetan part have less silt, despite a longer course

Answer 18. Indus Water Treaty was signed between India and Pakistan in 1960. As per the treaty:

- India can use only 20% of the total water that passes through the Indus Water system.
- This water is used for irrigation in Haryana, Punjab, the southern and western parts of Rajasthan.

Answer 19. The Godavari River, it carries similar characteristics as Ganga, therefore, it is often referred to as 'Dakshin Ganga'.

1. As river Ganga is the largest river of India with the largest drainage basin, similarly Godavari is the largest river of peninsular India with the largest drainage basin.
2. River Godavari and Ganga have the similar religious sentiments of the people attached to it.

Answer 20. The most of the peninsular rivers originate in the Western Ghats and run from north to south which is very close to the western coast and the drainage is at the Bay of Bengal. For example, most of the major rivers of the Peninsula such as the Mahanadi, the Godavari, the Krishna and the Kaveri flow eastwards and drain into the Bay of Bengal.

Answer 21. The Indus River originates in Tibet and flows toward the west. Its tributaries of Indus are the Nubra, the Zaskar, the Shyok and the Hunza which further link it into the region of Kashmir. The Indus River has its flow through Baltistan and Gilgit, and it further rises from the mountains at Attock. The Chenab, Satluj, the Ravi, the Beas, the Chenab and the Jhelum are the rivers that link together to pierce into the Indus River near Mithankot in Pakistan.

Answer 22.

West flowing rivers	East flowing rivers
1. These rivers drain in Arabian sea.	These rivers drain in Bay of Bengal.
2. The west flowing rivers form estuaries.	The east flowing rivers form deltas.
3. Narmada and Tapi are examples of west flowing rivers.	Mahanadi, Krishna, Godavari are examples of east flowing rivers.
4. These rivers are flow through the rift valley.	All these rivers passed through a varied topography, i.e. hills, plains, plateaus etc.
5. A few small tributaries joining at right angles are only found.	Most rivers are fed by many east-west flowing long tributaries

Answer 23. Right bank tributaries: The Yamuna, Betwa, Chambal, Son

Left bank tributaries: the Gandak, the Ghaghara and the Kosi are also

Answer 24. The Sundarbans Delta is the world's largest delta.

Two main features:

- 1) The delta formed by the rivers Ganga and Brahmaputra which is the largest delta of the world is known as Sundarban Delta.

- 2) The delta derived its name from the Sundari trees which grows well in this marshland.
- 3) It is the world's fast growing delta.
- 4) It is also the home of Royal Bengal Tiger.

Answer 25. The braided stream is defined as a stream which comprises of numerous small, low channel that divides and rejoins numerous times and forms a pattern that resembles the strands of a plate. The Brahmaputra River forms the braided stream in Assam.

Answer 26. The Krishna River originates from Mahabaleshwar. The total length of the river is 1400 km and it reaches the Bay of Bengal. The Maharashtra, Karnataka and Andhra Pradesh are the states which are drained by the Krishna River.

Answer 27. Gorge is defined as a narrow valley between hills or mountains, typically with steep rocky walls and a stream running through it.

There is only one Peninsula River the Narmada which flows through a gorge. Example: The 'Marble rocks', near Jabalpur where the Narmada flows through a deep gorge.

Answer 28. The rivers of the Himalayan region are perennial in nature. They have their sources in the snowfields and glaciers of the Himalayas which supply water to these rivers throughout the year. During monsoons the Himalayas receive very heavy rainfall and rivers discharge heavy flow of water. During dry periods the rivers are fed by the melting snow and glaciers of the lofty great Himalayan range. Hence, the Himalayan rivers flow throughout the year..

Answer 29. The Tapi River originates from Satpura ranges located in the Betul district of Madhya Pradesh. It also flows in a rift valley, parallel to Narmada. Its basin covers parts Madhya Pradesh, Maharashtra, and Gujarat..

Answer 30. The Kaveri river originates in the Brahma Giri range of the Western Ghats and drainage at the Bay of Bengal in the south of Cuddalore in Tamil Nadu. Its total length is about 760 km. The Bhavani, Kabini, Hemavati and Amravati are the main tributaries of the Kaveri River. It is the second major waterfall in India which is known as Sivasamudram. Its basin drains to the parts of Kerala, Karnataka and Tamil Nadu.

Long answer type

(5 marks)

Answer 31. Various uses of rivers are:

- 1) **Cradle of Civilization:** River banks have attracted settlers from ancient times. All the major civilizations of the world were settled near to the river banks. Example: Indus Valley Civilization, Nile Civilization etc. Even today, many important cities of the world are settled near to the river banks.
- 2) **Basic Natural Resource:** Rivers have been of fundamental importance throughout the human history. River water is essential for various human activities.
- 3) **Deposition of Sediments:** The sediment deposits make the river banks highly good for cultivation, thus, promoting agriculture over there.
- 4) **Other uses:** Rivers are used for irrigation, navigation, hydro-power generation

Answer 32. Causes of river pollution:

- 1) **Industrial Effluents:** A heavy load of industrial effluents are dumped into the rivers. This deteriorates the quality of water and also the self-cleansing capacity of the river.
- 2) **Urbanisation:** Modern trends of living consume more water. Moreover, the sewage problems in cities have further added to the problem of water pollution.
- 3) **Domestic Use:** The use of rivers and lakes done for domestic purposes like washing and bathing is adding to the problem of water pollution.
- 4) **Agricultural Effluents:** The water that flows down from the agricultural fields is contaminated with pesticides and insecticides.
- 5) **Untreated sewage waste:** A heavy load of untreated sewage waste is emptied into the rivers. This affects the quality of water and also the self-cleansing capacity of the river.

Answer 33. The measures to control the river pollution:

- 1) Treating waste water before discharging.
- 2) Diversion of all outlets of effluents from industrial and domestic sources.
- 3) Reducing agricultural run-off
- 4) Proper usage of river water
- 5) Stopping dumping of wastes

Answer 34. Ganga Action Plan

- 1) The Ganga Action Plan (GAP) phase-I was launched in 1985 and closed on 31st March in 2000.
- 2) The Steering Committee of the National River Conservation Authority rechecked the progress, and made all the necessary corrections required on the basis of lessons which were learnt and experiences were achieved from GAP Phase-I.
- 3) The Ganga Action Plan (GAP) Phase-II, has been connected with the NRCP.
- 4) The extended NRCP now covers 152 towns located along 27 interstate rivers in 16 states.
- 5) Under this action plan, a total number of 215 schemes of pollution abatement are present which were sanctioned; it has to be taken to 57 towns and million liters of sewage is to be diverted and treated. So far 69 schemes have been completed.

Answer 35. Type of lakes

- 1) **Oxbow lake:** An oxbow lake is formed when the meandering river across a flood plain forms cut offs.
- 2) **Lagoons:** Spits and bars in the coastal areas formed by the depositional work of oceanic movement forms a lagoon. Example- Chilika lake (largest lake in India), Pulikat lake, Kolleru lake
- 3) **Seasonal Lakes:** Lakes in the region of inland drainage are sometimes seasonal which depends upon the rainfall. Example- Sambhar lake in Rajasthan which is a salt water lake.
- 4) **Glacial Lakes:** These types of lakes are mostly found in Himalayan region. They are formed when glaciers dug out a basin which was later filled snow melt. Example- Wular lake in Jammu & Kashmir which is the largest fresh water lake.
- 5) **Artificial Lakes:** Damming of rivers for the generation of hydel power has also led to the formation of lakes. Example- Guru Gobind Sagar on Bhakra Nangal Project.

Answer 36.

- 1) **Regulate the flow of river:** Lakes help to regulate the flow of a river. During heavy rainfall, it prevents flooding and during the dry season, it helps to maintain an even flow of water.
- 2) **Generation of Hydel Power:** Damming of rivers is done in order to store the water for the generation of hydro-electricity. Example- Hirakud dam on Mahanadi river.

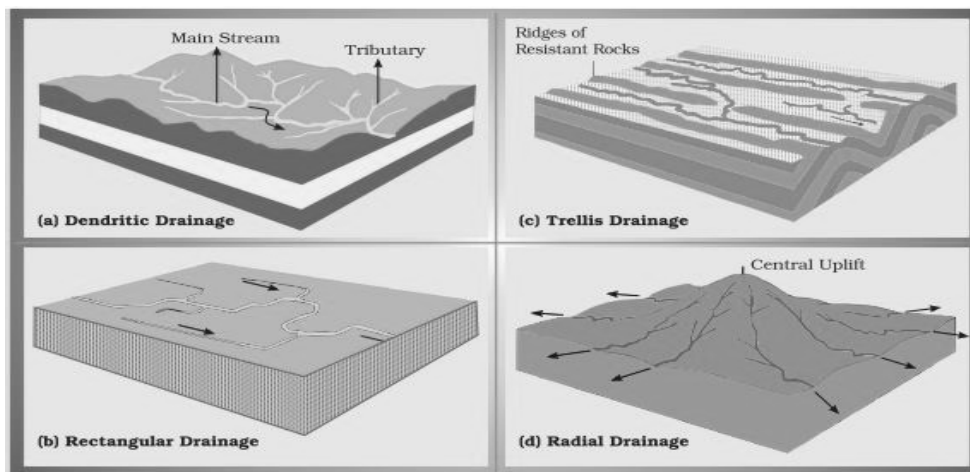
- 3) **Promote Tourism:** Lakes are always an attraction for tourists for recreation. Lakes enhance the natural beauty of the adjoining area and hence, promote tourism. Example-Wular lake, Dal Lake in Jammu & Kashmir.
- 4) **Moderate Climate:** Lakes also help in moderating the climate of the adjoining area that supports ecosystem within the lake and also outside the lake.
- 5) **Source of rivers:** Many lakes are also the major source for many rivers. Ex. Indus, Satluj, Brahmaputra have their source in the Mansarovar lake.

Answer 37. Difference between Himalayan Rivers and Peninsular Rivers

Himalayan River	Peninsular River
These rivers originate from Himalayan regions.	The source of these rivers lies in the peninsula
The Himalaya rivers are perennial in nature	These are seasonal, rainfed rivers.
The rivers have long course and carry more sediments.	Rivers have shorter course and less sediments
The rivers perform both erosional and depositional activities.	Less erosional and depositional work by rivers

Answer 38. Drainage Patterns: The main river is joined by a number of tributaries along its course. They form certain patterns that are known as drainage patterns. Types of patterns

- 1) **Dendritic Pattern:** When the main stream with its tributaries have a drainage pattern resembling the branches of a tree, it is known as dendritic drainage pattern. The dendritic pattern develops where the river channel follows the slope of the terrain.
- 2) **Trellis Pattern:** When a river is joined by its tributaries, at approximately right angles, trellis drainage pattern is formed. A trellis drainage pattern develops where hard and soft rocks exist parallel to each other.
- 3) **Rectangular Pattern:** A rectangular drainage pattern develops on a strongly jointed rocky terrain.
- 4) **Radial Pattern:** When streams flow in different directions from a central peak or dome like structure, the radial drainage pattern develops. The radial drainage pattern resembles the spoke of a wheel on the map.



Answer 39. The five main characteristics of Indus river basin have been discussed below:

- 1) The Indus River originates in Tibet, near Mansarovar Lake flowing to the west and enters India in the Ladakh of Jammu and Kashmir.
- 2) It has several tributaries, Zaskar, Nubra, Shyok and the Hunza, join it in the Kashmir region flowing through Baltistan and Gilgit which emerges from the mountains at Attock.
- 3) The tributaries of the Indus – the Jhelum, the Chenab, the Ravi, the Beas and the Satluj – flow partly through Kashmir and Himachal Pradesh and mainly through Punjab. They join together to enter the Indus near Mithankot in Pakistan.
- 4) The Indus plain is one of the longest rivers in the world having a very gentle slope with a total length of 2900 km.
- 5) A little over one third of the Indus basin lies in India in the states of Jammu and Kashmir, Himachal Pradesh and Punjab. Major part of its basin lies in Pakistan.
- 6) It forms a spectacular gorge in the Ladakh region.

Answer 40. The five features of Ganga basin have been discussed below:

- The Ganga is the longest and the most important river of India.
- Most of the river lies in India, part of the lower course and its delta lies in Bangladesh.
- The headwater of the Ganga called the 'Bhagirathi' is fed by the Gangotri Glacier.

- It is joined by the Alaknanda at Devprayag in Uttarakhand.
- At Haridwar, the Ganga emerges from the mountains and enters the plains.
- It is joined by many tributaries from the Himalayas, such as Yamuna, Ghaghara, Gandak and the Kosi.
- The mainstream flows in southwards into Bangladesh and is joined by the Brahmaputra.
- The total length of the Ganga basin is approx 2500 km.
- The Ganga and its tributaries form a major portion of the northern plains. The availability of water and fertile soil, makes it the most important agricultural region of India.

Answer 41. Brahmaputra River

- 1) The Brahmaputra is one of the longest rivers of the world, but most of its course lies outside India.
- 2) The river Brahmaputra rises in Tibet east of the Mansarovar lake.
- 3) The river flows eastwards parallel to the Himalayas in its upper course.
- 4) It is known as Tsangpo in Tibet. It carries smaller volume of water and less silt in this region as it is a cold and dry area.
- 5) The river takes a 'U'-turn bend at Namcha Barwa (7757 m) and enters India in Arunachal Pradesh, through a gorge.
- 6) In Arunachal Pradesh, it is known as Dihang. It is joined by the Dibang, the Lohit, the Kenula and many other tributaries which increase the volume of the river.
- 7) It is known as the Brahmaputra in Assam. The region receives heavy rainfall during the monsoon which increases the volume of water and silt content of the river.
- 8) Devastating floods are caused by the river in Assam and Bangladesh every year during the rainy season. The deposition of the silt in the riverbed due to the heavy load, leads to the formation of braided channels intervened by riverine islands.
- 9) The Brahmaputra has a braided channel in its entire length in Assam.
- 10) Many riverine islands like the Majuli, the world's largest riverine island, are formed in between the channels.
- 11) The Brahmaputra is known as Jamuna in Bangladesh. When it is joined by the Ganga, it is known as Padma.
- 12) Together they form the Ganga-Brahmaputra Delta known as Sunderbans, and discharge into the Bay of Bengal.

Answer 42. Five characteristics of Narmada basin are:

- The Narmada rises in the Amarkantak hills in Madhya Pradesh.

- It flows towards in the western direction in a rift valley formed due to faulting.
- Its produce many picturesque location on way.
- All the tributaries of the Narmada are very small, and the majority of these join the mainstream at right angles.
- The Narmada basin covers parts of Madhya Pradesh and Gujarat.

Answer 43. The water is essential part of human life. It is used for domestic and industrial purposes. Many rivers are navigable, so are cheap source of transportation especially for heavy and bulky material. The river plains and deltas are ideal site for cultivation. Water from rivers is also used for generating hydroelectricity. Hence, rivers are considered as the lifelines of the human civilization.

Answer 44. Difference between delta and estuary

Delta	Estuary
1) It is a feature made by the rivers at their mouth.	The very sharp edge mouth of rivers, lacking any deposits is known as Estuary.
2) It is triangular shaped deposits	It is funnel shape.
3) They are very fertile because of the sediment deposition.	They are not very fertile
4) Good for agriculture	Good for fishing
5) Ganga , Brahmaputra, Krishna, Kaveri and Mahanadi form delta.	Narmada and Tapi Rivers form Estuaries.

Answer 45. Map

Answer 46. Shillong

Answer 47. Uttarakhand

Answer 48. Wular

Answer 49. Krishna

Answer 50. Chhattisgarh

Answer 51. Ambala

Answer 52. Trellis

Answer 53. Son

Answer 54. Jamuna

Answer 55. Godavari

Answer 56. Care and cleanliness

Answer 57. Rivers teach following values
1) Unity
2) Selfless service