

DRAINAGE PATTERN

The word 'Drainage' means flow of water. If you look at the physical map of India, you will find that small streams that flows in different areas combine together to form a major river. In the end, these rivers discharge themselves in large water bodies like Lake or Sea or Bay. The water of a region that flows through a river system is called drainage basin. When a highland, e.g., Mountain, separates two neighbouring drainage basin then this type of highland is called 'Water Divide'.

The development of any drainage pattern is determined by the topography of that particular region. The rivers of India can be divided into two parts on the basis of land forms:

1. Rivers of Himalayas
2. Peninsular Rivers

As these rivers originate in different geographical regions, they are different from each other. Their difference is evident from the following description:

RIVERS OF HIMALAYAS

Most of the Himalayan rivers are perennial. Apart from rainfall, these rivers continuously receive supply of water, all the year round, by the melting snow on the peaks of the Mountains. Rivers like Indus and Brahmaputra

DO YOU KNOW?

Amazon river basin is the largest drainage basin of the World.

FIND OUT

Which river has largest drainage basin in India?

originate from Himalayas. These rivers have cut down the Mountains to form gorges during the course of their flow (Fig. 3.1).

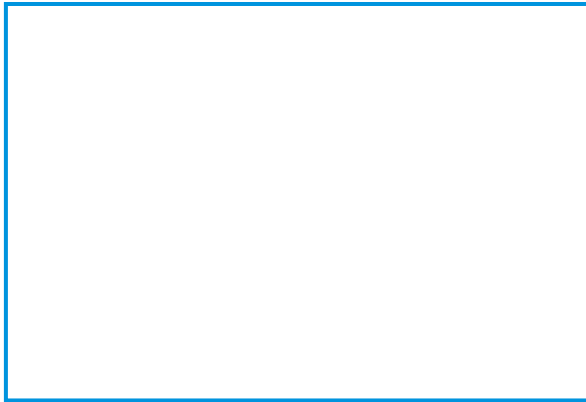


Fig.3.1 Gorge

middle and lower courses where the slope of the land becomes less, it becomes difficult for the rivers to carry the sediments brought by them. As a result of which, the rivers begin to meander and land types like Oxbow lakes, flood plains and deltas are formed by them

PENINSULAR RIVERS

Most of the peninsular rivers are seasonal whose main source is rain water. In summer season and dry weather when there is no rainfall the water level of large rivers decreases to a very low level and these rivers turn in to small streams or *nalas*. Few rivers from these emerge out of the plateau and the western Ghat Mountains and move westwards and discharge themselves in to Arabian Sea. But, most of the Peninsular rivers emerges out of western Ghats and discharge their water in

The rivers originating from Himalayas, right from their origin point to their journey up to the Sea, they perform several functions. On the upper parts of their course they cause massive erosion and carry with them loads of eroded materials like silt, sand, soil, etc. As the rivers move forward the mass of sediments increases. In the

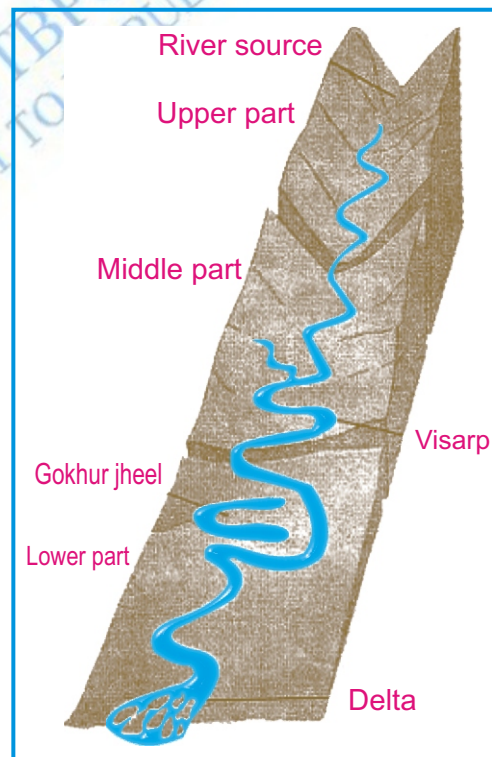


Fig.3.2 Different stages of the rivers

the Bay of Bengal. These rivers are shallow and short in length. These rivers also form waterfalls at a number of places. Deltas are formed by the rivers which discharge in the Bay of Bengal and Estuaries are formed by the rivers which discharge in to the Arabian Sea.

IMPORTANT RIVERS OF INDIA

A study of the drainage map of India makes it clear that Indus, Ganga and Brahmaputra are the important rivers of the Himalaya. These rivers are long and deep. Apart from major rivers they have several tributaries also. In peninsular India also there are number of rivers that drain the region and finally discharge their water either in Bay of Bengal or Arabian Sea. The description of these rivers are given below:

ACTIVITY

Make a list of the Peninsular rivers through which it could be identified as to which river discharges in Bay of Bengal and which discharges in Arabian Sea.

DO YOU KNOW?

Rivers form natural embankments (Levee) through the deposition of sediments that they carry with them. These embankments are considered to be most ideal place for human habitat in flood plains.

FIND OUT

On which river's natural embankment (Levee) is Patna, the capital of Bihar situated?

RIVER INDUS

River Indus is one of the largest rivers of India. It originates from the Mansarovar Lake near Tibet and moves in south – west direction and enters India in Ladakh district of Jammu and Kashmir. The drainage area of this river is spread over in about 250 square kilometers which is joined by important rivers such as Zaskar, Nubra, Shyok, and Hunza. In Ladakh Indus river forms a gorge known as Gilgit gorge. It is the main center of attraction for tourism. It passes through Baluchistan and Gilgit and finally emerges out of the hills in

Attock. Here, the Satluj, the Beas, the Ravi, the Chenab and the Jhelum joins Indus at Mithankot (Pakistan). Then, this river flows towards south – west and forms a plain just before Karachi and finally discharges into the Arabian Sea. The length of this river that originates in Himalaya is about 2900 km. One third drainage area of this river is in India (Jammu – Kashmir, Himachal Pradesh and Punjab) and the rest is in Pakistan.

RIVER GANGA

The main channel of this river 'Bhagirathi' rises from 'Gaumukh' of Gangotri glacier situated in the Himalayas. At Devprayag situated in Uttarakhand, the Alaknanda meets Bhagirathi and from here it flows by the name of Ganga. The river Ganga enters the plains near Haridwar. The river has a length of 2525 km. which flows through Uttarakhand, Uttar Pradesh, Bihar and West Bengal, it passes through Farakka and enters Bangladesh where it is called Padma. River Hoogly is the main branch of Ganga in India. Look at the Fig. 3.3 and study the Ganga drainage area. Many Himalayan rivers – Yamuna, Ghaghra, Gandak, Kosi, etc. are its tributaries. Apart from these, rivers rising from central highlands e.g. Sone, also joins Ganga. The Ganga river is divided into two parts near Farakka – first, Hoogly in the form of a distributary of Ganga, crosses the delta region and finally discharges into Bay of Bengal. The second part in the form of main channel enters Bangladesh where it is joined by river Brahmaputra and this confluence is called 'Meghna'.

Rivers Ganga and Brahmaputra, before discharging themselves into Bay of Bengal, form a large delta which is known as 'Sunderban delta'.

The mountain or plateau which separates flow of the rivers in two directions is known as 'Water divide'. Aravali highland between Indus and Ganga is an example of water divide. Aravali town is situated on the water divide of Ganga and Indus. The length of the plain from Aravali to Sunderban is 1800 km. and its slope reduces at the rate of 1 meter/6 km. towards Sunderban.



Fig. 3.3 Drainage pattern of Indian rivers and important water divides

RIVER BRAHMAPUTRA

This river rises from the Mansarovar Lake situated in Tibet. Its length is more than 2900 km. but most of its drainage area, like Indus, is situated outside India. This river in the north flows parallel to Himalayas and near Namcha Barwa peak it makes a U shape bend and enters Arunachal Pradesh through gorge. It is also known as 'Dihang' in local language here. Near Assam Budhi Dihang, Disang, Kapoli Lohit, Kenula and other tributaries joins Brahmaputra river. Its Himalayan tributaries are Sunavshree, Kameng, Dhanshree, Manash and Tista.

The river Brahmaputra rises in Tibet which is a cool and dry region where amount of silt is almost nil in river waters but when this river passes through high mountainous region and is joined by a number of channels in

DO YOU KNOW?

Brahmaputra river is known as 'Tsangpo' in Tibet and 'Jamuna' in Bangladesh. It is a type of Antecedent river.

ACTIVITY

Make a list of important Antecedent rivers that drains Bihar.

Assam then amount of water and silt increases in it. Here, it turns into braided channels and forms many islands (Diara).

Every year in rainy season, due to increase in sedimentation in river valley, the water flow crosses the embankments and spreads in nearby areas and takes the form of floods. It causes immense loss to life and property in Assam and Bangladesh. In comparison to other Himalayan rivers, due to large amount of silt deposition in Brahmaputra river, the course of the river keeps on changing time and again.

RIVER YAMUNA

River Yamuna rises from the 'Yamunotri glacier' of Himalaya and covers a distance of 1375 km. and joins river Ganga near Prayag (Allahabad). Its important tributaries are Chambal, Betwa, Ken, etc. which join it at its right bank.

RIVER GHAGHARA

This river rises from Mapchachungo glacier situated in Karnali in Trans-Himalayan region. This river flows in south – east direction and crosses the Himalayas. It is called Karnali in mountainous region and Ghaghara in plain region. This river drains Nepal and near Chapra it captures water of Sharda river and then finally joins Ganga. It is also called Saryu in Uttar Pradesh.

RIVER GANDAK

This river rises from great Himalayas and crosses Nepal and enters Champaran of Bihar. There is a continuous change in its course and due to excess deposition of sediments floods occurs frequently here. There are many ancient legend associated with this river.

RIVER KOSI

This river also rises from 'Gosaithan' of the Great Himalayas and crosses Nepal and enters Supaul district of Bihar. The main channel of Kosi is called 'Arun' near its source. Its other important tributaries are Milachi, Bhotia, Sapt kosi, Tamba, likhu, Dugdh and Tambur. In addition to these, it joins other channels also and finally meets Ganga near Kursela (Saharsa). The length of

DO YOU KNOW?

The flood plain formed by the new alluvium brought by river Ganga is also called 'Tal'.

- FIND OUT –

Where the Tal does extends in Bihar?

this river is about 230 km.

This river is also famous for sudden change of its course and erosion. Kosi, on the one hand, forms fertile plain by its alluvium whereas on the other it brings curse through its disastrous floods. Embankments have been built on its both banks for the protection from flood.

DO YOU KNOW?

Large scale destruction is caused by river Kosi through its floods in Bihar. That is why this river is also called the 'Sorrow of Bihar'.

RIVER NARMADA

River Narmada originates from the Maikal hills near Amarkantak in Madhya Pradesh and moves towards west in a fault valley. Before discharging in to Gulf of Cambay near Bharoch, it forms several admirable structures and places. Near Jabalpur in Bheraghat, this river flows in a deep gorge in marble rocks and forms 'Dhuandhar Prapaat' (Kapildhara). Most of the tributaries of Narmada are small and meets the main stream at right angle. The length of this river is 1,312 km. which drains the states of Madhya Pradesh and Gujarat. It is the second longest river of the Peninsular India.

RIVER TAPI

River Tapi originates from the Satpura hills situated in Baitul district of Madhya Pradesh. Like river Narmada, it emerges from the fault valley and runs parallel to river Narmada and drains the states of Madhya Pradesh, Gujarat and Maharashtra and finally discharge itself in the Gulf of Cambay. Purna is its only tributary near Surat.

Other than this, river Sabarmati and Mahi of Gujarat are important amongst west flowing rivers. Other than these, there are many rivers that emerges from western Ghat and discharges in Arabian Sea. They include Mandawadi and Juari of Goa, Kalindi, Gangavali, Sharvati and Netravati of Karnataka and Periyar, Pamba and Manimala of Kerala. They are small but

Rapid flowing rivers. River Luni is very important amongst the rivers of Rajasthan that drains the desert parts.

DO YOU KNOW?

The hot water and Cold water springs of Rajgir and Kakolat respectively are examples of waterfalls situated in Bihar.

RIVER MAHANADI

This is the third longest river in Peninsular India that discharges itself in the Bay of Bengal. It is 890 km. long; this river emerges near Raipur situated in Chhattisgarh and drains Odisha and finally discharges in to Bay of Bengal. Its drainage system extends in Chhattisgarh, Jharkhand and Odisha. Its important tributaries are Shivnath, Hansdev, Mand, Jonk and Tel.

DO YOU KNOW?

Which are the states that are drained by river Sabarmati and Mahi?

RIVER GODAVRI

This river rises from western Ghat near Nasik in Maharashtra. Its basin is spread over in Maharashtra, Madhya Pradesh, Odisha, Andhra Pradesh and Karnataka. It is the longest amongst the Peninsular rivers with a length of 1450 km. 50% of the drainage basin of this river has developed in Maharashtra. Its important tributaries are Pranhit wardha, Manjira, wanganga and Penganga. Due to its large size and extension, is called by the names like 'Dakshin ki Ganga' or 'Bridh Ganga'.

RIVER KRISHNA

It emerges from a source near Mahabaleshwar (Maharashtra), situated in the western ghat and drains a total distance of 1290 km. and finally discharges itself into the Bay of Bengal. Its drainage basin extends in the states of Maharashtra, Karnataka, Andhra Pradesh. Its important tributaries are Dudhganga, Panchganga, Tungbhadra, Koyana, Ghatprabha, Malprabha, Musi and Bhima.

RIVER KAVERI

Kaveri rises from the Brahmagiri hills situated in the western ghat. Its length is about 760 km. The drainage basin of this river is spread over in the states of Tamil Nadu, Kerala and Karnataka. Its important tributaries are Amaravati, Bhavani, Hemavati, Logpawani, Akavli, Lakshman Tirth and Kabini. Finally, this river discharges its water in the Bay of Bengal south of Kudlur situated in Tamil Nadu.

Apart from above mentioned rivers, there are number of small rivers which flow in the east direction. Among these Damodar, Brahmani, Baitarani and Subarnarekha are important.

DO YOU KNOW?

Shiva – Samudram waterfall, on Kaveri river, is the second largest waterfall of India. The power station of this water fall transmits electricity to Mysore and Kolar gold mine region.

FIND OUT

Which is the largest waterfall of India? Where is it situated?

LAKES

You are acquainted with Dal and Wular Lakes situated in Kashmir, Nainital, Sambhar Lake of Rajasthan, Kanwar Bird sanctuary of Begusarai, Saraiyamaan of Bettiah, Lakshmisagar of Darbhanga . They are a source of human use and a centre of attraction for the tourists as well.

Have you ever tried to know the importance of Lakes? Think, if there had been no Lakes on these places then could these places have attracted so many tourists as they are doing today? Generally, a large depression filled with water is known as Lake but there is difference in the size and type as well as the nature of Lakes. Lakes are formed by the accumulation of rain water and melting of the glaciers and ice sheets. Mainly Lakes are formed because of the Natural causes.

Following are the types of Lakes from the formation perspective -

- 1. Rift Valley Lakes:** When water is accumulated in the Rift valley then this type of lake is formed. The number of such Lakes is more in Africa. Victoria, Rudolf, Nyasa are examples of such Lakes. In India an artificial Lake has been created in the rift valley by Tilaiya Dam.
- 2. Oxbow Lake:** When amount of sediments increases in rivers or slope of the land becomes less, then meanders are created in its course. Finally, the meander part is separated from the main channel which looks like hoof of a cow and this is called oxbow Lake. A number of such Lakes are found in the north Bihar. Saraiyamaan of Bettiah or Kanwar Lake of Begusarai are its examples.
- 3. Crater Lake:** When emission of ash and lava stops from the crater of the Volcano, then rain water begins to accumulate in the crater and this turns crater into a Lake. Lake Titicaca of Bolivia and Lake Von of Turkey are its examples. Lonar Lake of India has been formed in a similar way.
- 4. Lagoon Lake:** Through spit and Barriers (Bars), in coastal areas, when sea water is separated from Sea then this type of Lakes are called Lagoon. Chilka Lake and Pulikat Lake situated in India are examples of Lagoon.
- 5. Barrier Lake:** At times in mountainous region, due to land slide, the rocks fall in the river and stop the flow of the river water resulting in to formation of Lake. This is called Barrier Lake.
- 6. Glacial Lake:** Nainital, Bhimtal, Sat Tal etc. are beautiful examples of the glacial created Lakes in the Himalayan region.
- 7. Lakes created by Geological activities:** Wular Lake in Jammu and Kashmir is the largest fresh water Lake of India. Lakes are also created when Dams are constructed on rivers for the production of hydro electricity e.g. Govind Sagar Lake was created when Bhakhra Nangal Project was developed. Fresh water lakes like Loktak and Badyani along with Saline water Sambhar Lake of Rajasthan are examples of this type of Lakes.

Generally, it is seen that in deserts and semi dry regions saline water lakes are found where as in cold and mountainous regions fresh water lakes are found.

Lakes are very useful to mankind. During excess of rainfall or floods, lakes stabilises the flow of rivers in both the situation. During dry periods the utility of stored water increases. Lakes are also useful in the production of hydro electricity. It also normalises the climatic conditions of nearby areas. Lakes help in the strengthening of water cycle along with making the natural setting beautiful, attractive and enjoyable.

RIVERS AS LIFE LINE OF HUMAN CIVILISATION

River valleys are known as 'mother of civilization' since ancient times. Harappa - Mohanjodaro civilization in Indus valley, Chinese civilization in Hawang ho valley and Greek civilization in river Nile valley developed due to rivers.

Man has continuously developed since the separation of human beings from the development pyramid of life cycle . The suitable condition for Human development might not have been equally conducive at all the places. Different scholars and researchers have also accepted this view. The first credit for discovery of pre historic human culture goes to 'Baucher de Parthes' of France. He after the study of different proofs accepted Sien river of Paris as the center of evolution of civilization. Similarly, Dr. Mitra has declared river valley south of Siwalik formed by the melting of the glaciers as the center of human evolution. All the research papers seems to be unanimous on the opinion that during the course of human development river valleys have been the center of evolution of human civilisation.

Today at Prayag near Allahabad, the confluence of Ganga, Yamuna, Saraswati is the center of religious belief for the devotees. Large towns and cities also developed in the river valleys. Today rivers play an important role in the development of Industries, agriculture and means of transportation. Though, the over exploitation of river water and dumping of waste into these water bodies is badly polluting the rivers. It is a matter of great concern at the global level.

DO YOU KNOW?

Gandhi Setu, situated at Patna, is the longest road bridge (7 km) of India which was built in 1984.

FIND OUT

On which river is Gandhi setu situated?

POLLUTION – With the increase in population, the misuse of water increased at a rapid rate. Right from the domestic work to industrial work water is a very useful resource. Today water resource is being utilised for the crops of humid agriculture.

During floods the rivers become ominous, as they neutralise all the waste (Domestic waste, Industrial waste and other solid wastes) which badly affects the quality of water. Fertilizers used in agriculture, insecticides, pesticides, washing soap, soda, detergents dissolve in water and pollute it. Human activities such as draining of excreta, cleaning of animals increase the pollution of water. In fig. 3.4 disaster, induced by human activity is shown.

The unmindful cutting of forest has resulted into rapid increase in soil

DO YOU KNOW?

Lakes of large size is also called Sea e.g. Caspian Sea, Dead Sea, Aral Sea etc.

erosion, which has caused rapid siltation in the course of the rivers. Due to increase in the amount of solid silt, mud and chemical waste, the aquatic life is threatened and also threat of flood has also increased.

DO YOU KNOW?

In 1987, 2004, 2007, 2008, the Kosi floods inflicted large scale loss of life and property in Bihar.

CONSERVATION – The pollution of rivers has adverse effect on the environment. Presently, several nations of the world are facing this problem. To overcome this difficult situation, it is essential to concentrate on conservation works. The implementation of conservation is unavoidable for persons, society and in national interest.

INCREASE IN VEGETATION COVER - Vegetation helps us to survive in pollutionless environment. It provides us fresh air alongwith fruits, Medicine, precious woods. Their roots hold the soil together which makes the erosion process of rivers and wind ineffective. This not only controls the denudation of soil by rivers but also reduces the silt content in the rivers. Vegetation absorbs carbon dioxide present in the atmosphere and gives us life saving oxygen and balances the environment. Thus, from the environment perspective, 33 percent of the total area of any nation should have forest cover. Presently, only 19.25 percent of the total area of India is under forest cover which is not suitable for environment. The reduction in the area of the forest affects the wild life also; so, their habitat is getting smaller day by day.

NATIONAL RIVER CONSERVATION PLAN – 90 percent of the river water is received from the Monsoon rainfall and melting of ice in the Himalayan region. But their uncertainty and uneven distribution creates devastating situations, like floods and drought. To overcome such situations or disasters, awakening among the people and planned efforts by the government machinery are essential.

The government of India did start 'Ganga Karya Pariyojna' in 1985 but it got stopped on 31st March, 2000. In this backdrop, executive committee of National River Conservation Authority, after the observation of first stage, made a few suggestions. These suggestions and plans have been implemented under the National River Conservation Plan for the important polluted rivers. Under this plan 152 cities situated on the banks of 27 rivers of 16 states have been included. In 57 districts, efforts are being made, under this plan, to check pollution. To check pollution were approved of,



Fig. 3.4 River water being polluted by the human activity.

215 programmes, out of which 69 programmes have been completed. The target set under this project is to purify lakhs of liters of polluted water.

Lake Conservation work has also been included under this plan. Initially, two Lakes – Pawai (Maharashtra) and Ooty (TamilNadu) have been included. Presently, such conservation programmes are in progress on Ganga, Yamuna, Gomti and many other rivers.

The use of chemicals (insecticides, pesticides, fungicide) in agricultural activities is increasing very rapidly. These chemicals get dissolved in flood water along with rain water and pollute the river water. This can be prevented by making bunds in plains or agricultural regions; it can also help in stopping solid waste.

FORMATION OF WATER COLLECTION CENTER

As we know that source of river water is rain, snowfall or glacier. The distribution of water is not even in whole country and so the need of all

states can't be fulfilled. In reference to some rivers, one state establishes monopoly over the water sources and its neighbouring state is denied of the essential water supply. In such situations dispute erupts between the states for the distribution of water.

Therefore, the central government should establish National Water Collection Center and supply water to the states as per their requirement. It will not only solve the dispute of the states but also control flood and drought. Planning of interstate linking of the rivers could be an effective policy in this direction but uncertainty prevails about its implementation.

EFFECT OF DRAINAGE PATTERN ON HUMAN LIFE

As said earlier, drainage region of rivers is the mother of civilisation and culture. The position of rivers has been very significant in the economic

DO YOU KNOW?

Chemical waste materials dissolved in water, give birth to acid rainfall.

development of India. Since ancient times, rivers have been the source and control of human activities. Rivers have been the birth place of different civilizations and cultures. It is here that human development has flourished. The river waterfalls are center for hydro

electricity and point of attraction for tourism. During ancient times, in absences of roads and airways, rivers were the most suitable means of transportation. Today, National water ways are also being developed. Rivers have become useful today from the strategic point of view as well.

Due to the effect of the rivers 40 percent of the agricultural land is covered with alluvial soil which is spread in river valleys, delta and coastal regions. There is sufficient amount of alluvium in the deltas of Ganga, Indus, Ganga – Brahmaputra and plain regions. In North Bihar, sediments are being deposited every year by the rivers such as Kosi, Bagmati, Gandak etc. This maintains the fertility of the soil.

Multipurpose projects have been designed and developed for rivers. Some of them have been completed and others are still being

constructed. For achieving these objectives, many Dams have been built on the rivers which have led to the development of manmade canals and Lakes. These canals and Lakes are ideal for aquatic life. These are centre of sports and place of tourist interest as well. By the completion of these Dams ambitious plans like flood control, development of water ways, breeding of aquatic animals, protection of soil erosion, Production of hydro electricity, development of forest have received impetus. Bhakhra Nangal, which is a project of river Sutluj, produces 1200 Megawatt of electricity and irrigates about 20 lakh hectares of land. Tehri project has been developed on river Bhagirathi which produces 2400 Megawatt of electricity.

In Bihar many projects have been proposed. Excepting Son project, all river valley projects are under construction. Pandit Nehru (First Prime Minister) had remarked about river valley projects as 'Temples of modern India'.

DO YOU KNOW?

The Tehri project situated on river Bhagirathi is the fifth largest of the world and largest river valley project of Asia.

Rivers deposit sediments, brought by them, in plains and valleys. These sediments have fossils along with fertile soil.

These fossils are source of mineral and mineral oil. Damodar valley is famous all over the world for its coal deposits. Other than this, important minerals like iron ore, gold, quartz etc. Exists in the river valley regions. Apart from this the climate around rivers get rectified which attracts human settlements. All the facts given above shows positive impact of rivers on human life. With the support of these facilities man has reached at the peak of development but

DO YOU KNOW?

Which are the states that are drained by river Sabarmati and Mahi?

they have jeopardized the existence of these rivers. The danger inflicted at the existence of the rivers shows its negative aspect. The pollution of river and lake water finally, creates an atmosphere of destruction of human civilisation.

EXERCISE QUESTIONS

OBJECTIVE TYPE QUESTIONS

1. In which state is Laxmi Sagar Lake situated?
(a) Madhya Pradesh (b) Uttar Pradesh
(c) Bihar (d) Jharkhand
2. Which of the following is a saline lake?
(a) Wular (b) Dal
(c) Sambhar (d) Govind Sagar
3. Near which city is Gandhi Setu on river Ganga situated ?
(a) Bhagalpur (b) Katihar
(c) Patna (d) Gaya
4. Which river flows through faulted valley?
(a) Mahanadi (b) Krishna
(c) Tapi (d) Tungbhadra
5. Which river is the longest river of Peninsular India?
(a) Narmada (b) Godavri
(c) Krishna (d) Mahanadi
6. When was the Indus water treaty made?
(a) 1950 (b) 1955
(c) 1960 (d) 1965
7. Which river is nicknamed Tsang Po?
(a) Ganga (b) Brahmaputra
(c) Satluj (d) Godavari
8. Which among the following is a hot water fall?
(a) Kakolat (b) Garsoppa
(c) Brahmkund (d) Shiv Samudram

9. Origin place of Kosi river –

- | | |
|----------------|-------------------|
| (a) Gangotri | (b) Mansarovar |
| (c) Gosai Dham | (d) Satpura Range |

SHORT ANSWER TYPE QUESTION

1. What is the function of water divide? Give one example.
2. Which is the largest river basin in India?
3. From where does Indus and Ganga rivers originate?
4. Write the names of two primary currents of river Ganga? Where do they meet each other to form river Ganga?
5. Why has Brahmaputra less silt in Tibetan region in spite of having long current ?
6. Which two peninsular rivers flow through rift valley? Which type of land forms are formed by them before discharging into the Sea?

LONG ANSWER TYPE QUESTION

1. Describe important specialties of Himalayan and Peninsular rivers?
2. Compare the east and west flowing rivers of Peninsular India?
3. Describe the importance of rivers in Indian economy?
4. Describe the types of Lakes in India with examples?

MAP WORK

- (A) Locate the following rivers on the map of India and write their names - Ganga, Sutluj, Damodar, Narmada, Tapi, Mahanadi, Dihang
- (B) On the outline map of India locate the following Lakes: Chilka, Sambhar, Wular, Pulikat and Kolleru.

