

CBSE CLASS 9 SOCIAL SCIENCE

Geography — Contemporary India – I

CHAPTER 3: DRAINAGE

ULTIMATE IMPORTANT QUESTIONS BANK WITH MODEL ANSWERS

Strictly Aligned with the Latest NCERT Textbooks & CBSE Secondary School Examination Framework



HIGH-VALUE DELIVERABLES INSIDE THIS EDITION:

- **Comprehensive Content Indices:** Curated 1-Mark, 3-Mark, and 5-Mark long-form hydrological analysis answers.
- **Hydro-Morphological Mapping:** Strategic map work diagnostic tables covering rivers, paths, origins, and key lake sites.
- **Comparative Logic Systems:** Detailed, multi-column analysis charts separating Perennial vs Seasonal and Delta vs Estuary.
- **Correction Portals:** Specialized guidelines designed to clarify common student mistakes regarding tributaries vs distributaries.

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SECTION 1: FREQUENTLY ASKED QUESTIONS (FAQS)

Q1. Compare and contrast the principal characteristics of the Himalayan Rivers with the Peninsular Rivers. FREQUENTLY REPEATED

The river systems of India are broadly divided into two major groups based on their physiological and hydrological origins:

FEATURE	HIMALAYAN RIVERS	PENINSULAR RIVERS
Nature of Flow	Perennial ; they receive water from rain as well as from melted snow from high northern mountains.	Seasonal ; their flow is entirely dependent on rainfall, and they shrink significantly during dry summers.
Drainage Patterns & Course	Long courses, performing intensive erosional activity in upper sections and forming deep gorges, meanders, and oxbow lakes.	Shorter and shallower courses, flowing through stable geological formations with minimal down-cutting.
Valleys and Landforms	Deep V-shaped valleys and expansive, fertile deltas at their mouths (e.g., Sundarbans Delta).	Broad, flat valleys; Western-flowing rivers form estuaries, while Eastern-flowing rivers form modest deltas.
Examples	The Indus, Ganga, and Brahmaputra river systems.	The Narmada, Tapi, Godavari, Krishna, Mahanadi, and Kaveri rivers.



EXAM BOOSTER: HYDROLOGICAL TERMINOLOGY

Water Divide: Any elevated area, such as a mountain or an upland, that separates two neighboring drainage basins is called a water divide. The classic example in India is the Ambala upland, which separates the Indus and the Ganga river basins.

Q2. Describe the route, major tributaries, and features of the Ganga River System. ANNUAL EXAM CLASSIC

The Ganga River System is the most extensive and vital drainage network in India:

1. **Origin and Headwaters:** The core headwaters of the Ganga, called the **Bhagirathi**, originate from the Gangotri Glacier. It is joined by the **Alaknanda** at Devaprayag in Uttarakhand, where it officially takes the name Ganga.
2. **Emergence:** The river flows through mountains before emerging onto the plains at Haridwar.
3. **Major Right-Bank Tributaries:** The principal right-bank tributary is the **Yamuna**, which flows parallel to the Ganga and joins it at Prayagraj (Triveni Sangam). Other right-bank rivers include the Son.
4. **Major Left-Bank Tributaries:** The river is fed by major left-bank tributaries rising in the Nepal Himalayas, including the Ghaghara, Gandak, and Kosi, which cause seasonal floods in the northern plains but deposit fertile silt.
5. **Course and Delta:** The river flows eastward to Farakka in West Bengal, where it splits. The distributary Bhagirathi-Hooghly flows through West Bengal, while the main stream flows into Bangladesh as the Padma, joining the Brahmaputra to form the **Sundarbans Delta** before draining into the Bay of Bengal.

SECTION 2: PREVIOUS YEAR QUESTION COLLECTION

Q3. Why does the Brahmaputra River carry less silt and a smaller volume of water in its Tibet section compared to its course in India?

CBSE PAST YEAR FOCUS

The Brahmaputra River, known as the **Tsangpo** in Tibet, exhibits very different hydrological traits along its course:

- **In Tibet:** Tibet is a cold, dry, and high-altitude plateau with minimal atmospheric moisture. Because rainfall and runoff are limited, the river carries a relatively small volume of water and very little silt along this stretch.
- **In India:** The river enters India through Arunachal Pradesh via a sharp U-turn at Namcha Barwa. It passes through Assam, a region that receives some of the highest rainfall in the world. This heavy rainfall and numerous large tributaries drastically increase the river's water volume and silt load, leading to seasonal flooding and channel shifting in Assam.

SECTION 3: VERY SHORT ANSWER QUESTIONS (1 MARK)

Q4. Define the term 'Drainage Basin'.

The total geographical area drained by a single, integrated river system.

Q5. Give an example of an important water divide in India.

The Ambala upland ridge, which separates the Indus and Ganga river basins.

Q6. Name the longest river of the Peninsular Plateau, often referred to as the 'Dakshin Ganga'.

The Godavari River.

Q7. Which two major peninsular rivers flow westward through rift valleys into the Arabian Sea?

The Narmada and the Tapi rivers.

Q8. What is an 'Oxbow Lake'?

A crescent-shaped lake formed when a meandering river cuts off a pronounced loop over time.

Q9. Name the largest freshwater lake in India, formed by tectonic activity.

Wular Lake, located in Jammu and Kashmir.

Q10. Name the largest saltwater lagoon lake in India, located in Odisha.

Chilika Lake.

Q11. Where does the Indus River originate?

In Tibet, near Lake Mansarovar.

Q12. Define a 'Distributary'.

A river branch that splits off from the main channel in its lower course due to heavy silt buildup, flowing away from the main river.

Q13. Name the lake located in Rajasthan known for high salt concentrations, used for salt harvesting.

Sambhar Lake.

Q14. What are the core headwaters of the River Ganga called?

The Bhagirathi and the Alaknanda.

Q15. Which river system forms the famous Dhuadhar Falls near Jabalpur?

The Narmada River.

SECTION 4: SHORT ANSWER QUESTIONS (2–3 MARKS)

Q16. Differentiate clearly between a 'Tributary' and a 'Distributary'.

These two terms represent opposite processes in river dynamics:

- **Tributary:** A smaller stream or river that joins a larger main river, adding to its overall water volume (e.g., the Yamuna is a tributary of the Ganga). Tributaries are usually found in the upper and middle courses of a river.
- **Distributary:** A channel that branches away from the main river near its mouth, distributing its water across a delta (e.g., the Bhagirathi-Hooghly is a distributary of the Ganga). This occurs in the lower course due to heavy silt accumulation that blocks the main channel.

Q17. Explain the ecological and economic importance of lakes in India.

Lakes serve critical natural and economic purposes:

1. **Regulating River Flow:** During heavy monsoons, lakes store excess runoff and prevent flooding. In dry summer months, they release water to maintain a steady flow downstream.
2. **Economic Resource:** Lakes are extensively utilized for generating hydro-electric power, supporting local inland fisheries, and supplying water to nearby towns and industries.
3. **Tourism and Climate:** They help moderate the climate of surrounding areas, maintain delicate aquatic ecosystems, and serve as major tourist destinations that boost regional economies (e.g., Dal Lake in Srinagar).



DRAINAGE MAP MATRIX

- **West Flowing:** Narmada, Tapi (form Estuaries in the Arabian Sea).
- **East Flowing:** Godavari, Krishna, Mahanadi, Kaveri (form Deltas in the Bay of Bengal).

SECTION 5: LONG ANSWER QUESTIONS (5 MARKS)

Q18. Detail the Indus River System, explaining its origin, course through India and Pakistan, major tributaries, and the international treaty that governs it.

The Indus River System is one of the largest river basins in the world, with distinct geopolitical and physical features:

1. **Origin and Entry:** The Indus originates in Tibet, near Lake Mansarovar. It flows westward and enters India in the Ladakh district of Jammu and Kashmir, carving out scenic gorges along its upper course.
2. **Mountain Tributaries:** In Kashmir, it is joined by several mountain tributaries, including the Zaskar, Nubra, Shyok, and Hunza, before flowing past Gilgit and Baltistan.
3. **Plain Convergence:** The river flows south and emerges from the mountains at Attock, where it receives the Kabul River. Near Mithankot in Pakistan, the Indus receives the combined waters of the five Punjab rivers: the **Satluj, Beas, Ravi, Chenab, and Jhelum**.
4. **Outflow:** It then flows southward across Pakistan before emptying into the Arabian Sea east of Karachi. Its total length is approximately 2,900 kilometers.
5. **The Indus Water Treaty (1960):** The sharing of this transboundary basin is governed by the Indus Water Treaty of 1960 between India and Pakistan. Under this agreement, India is permitted to use exactly 20 percent of the total water carried by the Indus system, which is vital for irrigation in Punjab, Haryana, and western Rajasthan.

SECTION 6: MAP-BASED QUESTIONS

Q19. Describe the key identification and location parameters for major rivers and lakes on the official CBSE outline map.

For your map examinations, master the exact spatial location of these water bodies:

- **Himalayan Traces:** The Indus flows through Ladakh before turning south into Pakistan. The Ganga flows from Uttarakhand through UP, Bihar, and West Bengal. The Brahmaputra runs parallel to the Himalayas in Tibet before looping south into Arunachal Pradesh and Assam.
- **Peninsular Channels:** Identify the parallel paths of the Narmada and Tapi flowing west into the Gulf of Khambhat. The Godavari starts near Nashik and flows across central India to the east coast.
- **Lake Identifications:** Locate **Wular Lake** in Jammu & Kashmir, the crescent-shaped **Chilika Lake** along the Odisha coast, and **Pulicat Lake** on the Andhra Pradesh-Tamil Nadu border.

SECTION 7: CASE-BASED QUESTIONS

SOURCE TEXT: NATIONAL RIVER CONSERVATION AND INDUSTRIAL POLLUTION

"Rivers have been of fundamental importance throughout human history. Water from rivers is a basic natural resource, essential for various human activities. However, the growing domestic, municipal, industrial and agricultural demand for water from rivers naturally affects the quality of water. As a result, more and more water is being drained out of the rivers reducing their volume. On the other hand, a heavy load of untreated sewage and industrial effluents are emptied into the rivers. This affects not only the quality of water but also the self-cleansing capacity of the river."

Q20. Based on the source text, answer the following questions:

(i) Why does drawing too much water from rivers hurt their ecology?

Drawing excessive water reduces the total volume of the river, which prevents it from diluting pollutants effectively and threatens aquatic life by shrinking their habitat.

(ii) Explain the term 'self-cleansing capacity' of a river and how it is disrupted.

A river's self-cleansing capacity is its natural ability to break down and dilute organic pollutants over a specific distance using natural flow and oxygenation. This capacity is disrupted when the volume of water is too low or when the influx of untreated industrial chemical waste and sewage exceeds what the river can naturally process.

SECTION 8: ASSERTION AND REASON QUESTIONS

STANDARD EVALUATION DIRECTIONS

Evaluate the statements and select the correct option:

- A:** Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
- B:** Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- C:** Assertion is true, but Reason is false.
- D:** Assertion is false, but Reason is true.

Q21. Assertion (A): West-flowing peninsular rivers like the Narmada and Tapi do not build large deltas at their mouths.

Reason (R): These rivers flow through hard, rocky rift valleys, which limits the amount of sand and silt they erode along their shorter paths to the sea.

Answer: A

Explanation: Both statements are true. Because the Narmada and Tapi flow through hard, stable rift valleys, they carry very little sediment. This lack of silt, combined with their shorter and faster flow to the coast, causes them to form clear estuaries instead of wide deltas.

SECTION 9: COMPETENCY-BASED QUESTIONS

Q22. Why are the deltas of India's east coast (like the Mahanadi, Godavari, and Krishna deltas) highly vulnerable to natural hazards, and what role do their upstream rivers play?

The deltas along the east coast face a combination of natural and human-made challenges:

- **Natural Cyclonic Path:** The Bay of Bengal is prone to intense tropical cyclones, which trigger severe storm surges across these low-lying, flat delta regions.
- **Upstream Damming Interferences:** Constructing large dams and reservoirs upstream traps the natural silt that these rivers would otherwise deposit at the coast. This lack of sediment causes the deltas to erode and shrink over time, making coastal communities more vulnerable to flooding and sea-level rise.

SECTION 10: MOST IMPORTANT EXAM QUESTIONS

★ **HIGHEST PROBABILITY QUESTION:** Detail the four types of drainage patterns formed by river systems and explain the conditions under which they develop.

The layout of a drainage system depends on the rock structure, slope, and climate of a region, forming four main patterns:

1. **Dendritic Pattern:** This pattern resembles the branches of a tree. It develops where a river channel follows the slope of the land, typically in areas with uniform rock types (e.g., the Ganga plains).
2. **Trellis Pattern:** Forms where a primary river is joined by parallel tributaries at near right angles. This pattern develops in landscapes with alternating bands of hard and soft rock (e.g., sections of the Himalayan foothills).
3. **Rectangular Pattern:** Characterized by sharp, right-angle bends along the entire river network. It develops in regions with heavily jointed or fractured rocky terrain.
4. **Radial Pattern:** Develops when streams flow outward in different directions from a central peak or dome-like volcanic structure (e.g., rivers originating from the Amarkantak hills).

SECTION 11: CHAPTER QUICK REVISION

INSTANT REVISION SUMMARIES

- **The Tsangpo:** The Tibetan name for the Brahmaputra River, meaning 'The Purifier'.
- **Estuary:** A semi-enclosed coastal body of water where fresh river water meets and mixes with open saltwater from the sea.
- **Sundarbans Delta:** The largest and fastest-growing delta in the world, famous for its mangrove forests and the Royal Bengal Tiger.
- **Lagoon:** A shallow body of water separated from the open sea by barrier islands, reefs, or narrow strips of land (e.g., Chilika and Pulicat lakes).

SECTION 12: COMMON MISTAKES STUDENTS MAKE

COMMON EXAM ERRORS TO AVOID:

1. **Confusing Tributaries with Distributaries:** Remember that a *Tributary* adds water to a river in its upper or middle course, while a *Distributary* takes water away from the main channel near the sea, helping build a delta.
2. **Mixing Delta and Estuary Formations:** Do not say that all peninsular rivers build deltas. West-flowing rivers (Narmada, Tapi) flow through hard rock and lack the sediment needed for deltas, forming clear *Estuaries* instead. East-flowing rivers (Godavari, Mahanadi) carry plenty of silt and build wide *Deltas* along the coast.

SECTION 13: LAST-MINUTE REVISION SHEET

THE ULTIMATE GEOGRAPHY CHEAT SHEET

River Facts to Remember: The Godavari is the longest peninsular river (1,500 km). The Indus has a total length of 2,900 km, while the Ganga stretches for 2,500 km within India.

Lake Classifications: Wular is tectonic in origin. Chilika, Pulicat, and Kolleru are saltwater lagoons formed by coastal sediment. Sambhar is an inland saltwater lake used for salt production.