

# TNPSC Group IV — Geography

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## A. Quick Revision Notes

### Physical geography of India

Area 3.28 million sq km (7th largest country). Extent: 8°4'N to 37°6'N latitude, 68°7'E to 97°25'E longitude. The Tropic of Cancer (23.5°N) passes through 8 states, roughly bisecting India. Standard Meridian 82.5°E (near Mirzapur) fixes IST. Physiographic divisions: the Himalayas (young fold mountains — Greater/Himadri, Lesser/Himachal, Shiwaliks), the Northern Plains (alluvial), the Peninsular Plateau (oldest, includes the Deccan), the Thar Desert, the Coastal Plains, and the Islands (Andaman & Nicobar volcanic — Barren Island is the only active volcano; Lakshadweep coral). K2 is the highest peak in India.

### Climate & monsoon

India has a tropical monsoon climate. The South-West Monsoon (June–September) delivers about 75% of annual rainfall through two branches — Arabian Sea and Bay of Bengal; Mawsynram/Cherrapunji (Meghalaya) is the wettest. The retreating or North-East Monsoon (October–December) brings rain to Tamil Nadu and the Coromandel coast, so TN receives most of its rain in this season. Four seasons: winter (Dec–Feb), summer (Mar–May, with hot 'loo' winds), south-west monsoon, and retreating monsoon. El Nino tends to weaken the monsoon; Western Disturbances bring winter rain to north-west India.

### Rivers & drainage

Himalayan rivers are perennial (snow-fed); Peninsular rivers are seasonal (rain-fed). Himalayan: Indus (tributaries Jhelum, Chenab, Ravi, Beas, Sutlej — Indus Waters Treaty 1960), Ganga (longest in India, from Gangotri), Brahmaputra (Tsangpo). East-flowing Peninsular rivers reach the Bay of Bengal: Godavari ('Dakshina Ganga', longest peninsular river), Krishna, Kaveri/Cauvery ('Ganga of the South', lifeline of Tamil Nadu), Mahanadi. West-flowing Narmada and Tapi run through rift valleys into the Arabian Sea and form estuaries. Major TN rivers: Cauvery, Vaigai, Thamirabarani, Palar.

### Soils & agriculture

Major soil types: Alluvial (most fertile, northern plains and deltas — wheat, rice), Black/Regur (Deccan lava region, moisture-retentive 'cotton soil'), Red (iron-rich, peninsular), Laterite (heavy-rain areas — tea, coffee, cashew), Arid/Desert, and Mountain/Forest soils. The Green Revolution (1960s, associated with M.S. Swaminathan) raised wheat and rice output using high-yielding seeds, chiefly in Punjab, Haryana and western UP. Cropping seasons: Kharif (monsoon-sown — rice, cotton, maize), Rabi (winter — wheat, gram, mustard) and Zaid. Tamil Nadu grows rice, sugarcane, groundnut and cotton.

### Natural resources & minerals

The Chota Nagpur Plateau (Jharkhand) is India's mineral storehouse. Coal is chiefly Gondwana coal from the Damodar valley (Jharia, Raniganj). Iron ore is mined in Odisha, Chhattisgarh, Jharkhand and Karnataka (Kudremukh). Other minerals: bauxite (for aluminium), manganese, and mica (India a leading producer, in Jharkhand/Andhra). Petroleum comes from Mumbai High, Assam (Digboi — oldest refinery) and Gujarat. Energy is classified as conventional (coal, oil, hydro) and non-conventional (solar, wind). Tamil Nadu has lignite (Neyveli), and nuclear plants at Kalpakkam and Kudankulam.

### Industries

Iron and steel: TISCO at Jamshedpur (1907, first modern plant) and SAIL plants (Bhilai, Bokaro, Rourkela, Durgapur). Cotton textiles centre on Mumbai, Ahmedabad and Coimbatore ('Manchester of South India'). Information technology hubs are Bengaluru ('Silicon Valley of India'), Chennai and Hyderabad. Chennai is the 'Detroit of India' for automobiles. Public sector units include BHEL (Tiruchirappalli) and the Integral Coach Factory (Chennai). Tamil Nadu leads in leather (Vellore, Ranipet) and knitwear (Tiruppur). Sugar is concentrated in Uttar Pradesh and Maharashtra. Small industry is supported through the MSME sector.

### Transport & communication

Roads form India's largest transport network; National Highways are managed by the NHAI. The Golden Quadrilateral links Delhi, Mumbai, Chennai and Kolkata; NH-44 (Srinagar to Kanyakumari) is the longest highway. Indian Railways, introduced 1853 (Bombay–Thane), is among the largest networks in the world; Chennai is the Southern Railway headquarters. India has major ports on both coasts — Mumbai (with JNPT, largest container port), Chennai, Thoothukudi/Tuticorin and Ennore (TN). Airports are run by the Airports Authority of India; inland waterways by the IWAI.

### Population & census

India is the world's second most populous country; the 2011 Census (the last completed) recorded about 1.21 billion people. The census has been decennial since 1881, conducted by the Registrar General of India. 2011 figures: density 382 per sq km, sex ratio 943 females per 1000 males, literacy 74%. Uttar Pradesh is the most populous state; Kerala has the highest literacy and sex ratio (1084). Tamil Nadu, about 72 million, is highly urbanised with literacy near 80% and a favourable sex ratio (996). India enjoys a 'demographic dividend' of a young population.

### Geography of Tamil Nadu

Tamil Nadu is the 11th largest state; capital Chennai. It is bounded by Kerala (west), Karnataka and Andhra Pradesh (north), the Bay of Bengal (east) and the Indian Ocean (south). The Eastern and Western Ghats meet at the Nilgiris, whose Doddabetta (2637 m) is the highest peak. Main rivers: Cauvery, Vaigai, Thamirabarani and Palar. The east-facing Coromandel coast gets most rain from the North-East monsoon. Notable areas: Point Calimere and the Gulf of Mannar biosphere. Hill stations include Ooty and Kodaikanal; the state has 38 districts.

### Environment & ecology

An ecosystem has biotic and abiotic components linked by food chains and webs across trophic levels (the 10% energy transfer rule). India's biodiversity hotspots are the Western Ghats, the Eastern Himalaya, Indo-Burma and Sundaland (Nicobar). Conservation is in-situ (national parks, sanctuaries, biosphere reserves; Project Tiger 1973) and ex-situ (zoos, seed banks). The Nilgiri Biosphere Reserve was India's first (1986); the Gulf of Mannar is another in TN. The Environment (Protection) Act 1986 followed the 1984 Bhopal disaster. Ramsar sites protect wetlands.

### Disaster management

The Disaster Management Act 2005 created the National Disaster Management Authority (NDMA), chaired by the Prime Minister, and the National Disaster Response Force (NDRF) for response; the NIDM handles training. Natural disasters include earthquakes (India's seismic zones II–V, the Himalaya being high-risk zone V), floods, cyclones (frequent on the Bay of Bengal/TN east coast; the 2004 Indian Ocean tsunami struck the TN coast), droughts and landslides. The disaster cycle covers mitigation, preparedness, response and recovery. India follows the Sendai Framework for disaster risk reduction.

## B. Practice MCQs (25)

### 1. Which is the longest river in Tamil Nadu?

- (A) Vaigai
- (B) Tamiraparani
- (C) Cauvery
- (D) Palar

### 2. Mudumalai National Park in Tamil Nadu is located in which district?

- (A) Coimbatore
- (B) The Nilgiris
- (C) Salem
- (D) Dindigul

### 3. Which dam, built across the Cauvery River in Tamil Nadu, is one of the oldest irrigation works in the world still in use?

- (A) Mettur Dam
- (B) Mullaperiyar Dam
- (C) Krishnagiri Dam
- (D) Kallanai (Grand Anicut)

**4. The Palk Strait separates India from which country?**

- (A) Bangladesh
- (B) Maldives
- (C) Sri Lanka
- (D) Myanmar

**5. The Anamalai Tiger Reserve (formerly Indira Gandhi Wildlife Sanctuary) is located in which district of Tamil Nadu?**

- (A) Nilgiris
- (B) Coimbatore
- (C) Tiruppur
- (D) Erode

**6. Which is the highest peak in Tamil Nadu?**

- (A) Doddabetta
- (B) Kodaikanal Peak
- (C) Anai Mudi
- (D) Vellingiri Hills

**7. The Mettur Dam (Stanley Reservoir) is located on which river?**

- (A) Bhavani
- (B) Palar
- (C) Cauvery
- (D) Vaigai

**8. Which of the following districts in Tamil Nadu has the longest coastline?**

- (A) Chennai
- (B) Ramanathapuram
- (C) Cuddalore
- (D) Nagapattinam

**9. The Western Ghats in Tamil Nadu are locally known as:**

- (A) Aravalli
- (B) Sahyadri Hills
- (C) Nilgiris and Anamalai Hills
- (D) Vindhya Range

**10. Which National Highway connects Chennai to Kolkata?**

- (A) NH 44
- (B) NH 16
- (C) NH 48
- (D) NH 32

**11. Pulicat Lake, one of the largest brackish water lagoons in India, is located in:**

- (A) Tamil Nadu only
- (B) On the border of Tamil Nadu and Andhra Pradesh
- (C) Andhra Pradesh only
- (D) Karnataka

**12. Which crop is predominantly grown in the Cauvery delta region of Tamil Nadu?**

- (A) Cotton
- (B) Sugarcane
- (C) Rice (Paddy)
- (D) Groundnut

**13. The Kanchenjunga, the third highest peak in the world, is located in which Indian state?**

- (A) Uttarakhand
- (B) Himachal Pradesh
- (C) Sikkim
- (D) Arunachal Pradesh

**14. How many districts are there in Tamil Nadu as of 2024?**

- (A) 32
- (B) 33
- (C) 38
- (D) 38

**15. The Gulf of Mannar Marine National Park, India's first marine national park, is located off the coast of which district?**

- (A) Chennai
- (B) Kanyakumari
- (C) Ramanathapuram
- (D) Thoothukudi

**16. The Deccan Plateau is bounded on the east by:**

- (A) Western Ghats
- (B) Eastern Ghats
- (C) Aravalli Range
- (D) Vindhya Range

**17. Which wind brings most of the rainfall to Tamil Nadu?**

- (A) South-West Monsoon
- (B) North-East Monsoon
- (C) Trade winds
- (D) Westerlies

**18. Kanyakumari is the southernmost tip of mainland India. It is at the confluence of which three water bodies?**

- (A) Bay of Bengal, Arabian Sea, and Pacific Ocean
- (B) Bay of Bengal, Arabian Sea, and Indian Ocean
- (C) Gulf of Mannar, Palk Strait, and Arabian Sea
- (D) Indian Ocean, Pacific Ocean, and Atlantic Ocean

**19. Which is the largest district by area in Tamil Nadu?**

- (A) Chennai
- (B) Coimbatore
- (C) Dindigul
- (D) Villupuram

**20. The Buckingham Canal in Tamil Nadu connects:**

- (A) Chennai to Kanyakumari
- (B) Chennai to Pamban
- (C) Chennai (Madras) to Vijayawada
- (D) Cuddalore to Nagapattinam

**21. The Deccan Traps are significant geological features because they:**

- (A) Are underwater volcanic ridges in the Bay of Bengal
- (B) Form the source of the Kaveri and Krishna rivers
- (C) Represent massive flood basalt formations caused by volcanic eruptions around 65 million years ago
- (D) Are the oldest mountain ranges in India

**22. The Indian Ocean Dipole (IOD) affects India's monsoon rainfall because:**

- (A) A positive IOD (warmer western Indian Ocean) typically enhances Indian summer monsoon rainfall
- (B) It determines the strength of the Himalayas as a barrier to cold winds
- (C) It controls the timing of cyclones in the Arabian Sea only
- (D) It is unrelated to monsoon and only affects winter temperatures

**23. The Strait of Malacca is strategically important to India because:**

- (A) It forms India's maritime boundary with Pakistan
- (B) It is controlled by India as part of the Andaman Sea defence zone
- (C) It connects the Red Sea and Mediterranean Sea
- (D) It is the narrow passage through which over 80% of India's imported oil tankers pass

**24. Which of the following is correctly matched — river and its origin?**

- (A) Kaveri — Brahmagiri Hills, Maharashtra
- (B) Indus — Mansarovar Lake area, Tibet
- (C) Brahmaputra — Gangotri glacier, Uttarakhand
- (D) Ganga — Yamunotri glacier, Uttarakhand

**25. The 'Ring of Fire' in the Pacific Ocean is associated with:**

- (A) High concentration of oil and gas reserves
- (B) The Pacific Ocean's warm surface current that drives El Niño
- (C) A coral reef system stretching across the Pacific
- (D) A zone of intense seismic and volcanic activity around the Pacific Ocean margins

## C. Answer Key & Explanations

1. **(C)** The Cauvery (Kaveri) is the longest and most important river in Tamil Nadu, flowing approximately 765 km from its origin at Talacauvery in Karnataka to the Bay of Bengal near Poompuhar.
2. **(B)** Mudumalai National Park is located in the Nilgiris district of Tamil Nadu, in the foothills of the Nilgiri Hills, and forms part of the Nilgiri Biosphere Reserve.
3. **(D)** Kallanai (Grand Anicut), built by Karikala Chola in the 2nd century CE across the Cauvery delta near Thanjavur, is one of the oldest water-diversion structures still in use in the world.
4. **(C)** The Palk Strait is a narrow body of water between the southeast coast of India (Tamil Nadu) and northern Sri Lanka, connecting the Bay of Bengal with the Palk Bay.
5. **(B)** The Anamalai Tiger Reserve is located primarily in Pollachi taluk of Coimbatore district, Tamil Nadu, covering part of the Western Ghats.
6. **(A)** Doddabetta (2,637 m) in the Nilgiri Hills near Ooty is the highest peak in Tamil Nadu and in the entire Nilgiri Hills.
7. **(C)** Mettur Dam (Stanley Reservoir) was built across the Cauvery River at Mettur in Salem district, Tamil Nadu, and was completed in 1934. It is the largest dam in Tamil Nadu.
8. **(B)** Ramanathapuram district in southeastern Tamil Nadu has the longest coastline of any district in Tamil Nadu, stretching approximately 185 km along the Gulf of Mannar.
9. **(C)** The Western Ghats in Tamil Nadu are mainly represented by the Nilgiri Hills (in the north), Anamalai Hills (in the centre), and Palani, Cardamom, and Agasthyamalai hills (in the south).
10. **(B)** National Highway 16 (NH 16) is the major highway connecting Chennai to Kolkata, passing through Andhra Pradesh (Nellore, Vijayawada, Visakhapatnam) and Odisha.
11. **(B)** Pulicat Lake is a brackish water lagoon that straddles the border of Tamil Nadu (Tiruvallur district) and Andhra Pradesh (Nellore district), covering about 759 sq km.
12. **(C)** The Cauvery delta (Thanjavur, Tiruvarur, Nagapattinam districts — known as the 'Rice Bowl of Tamil Nadu') is famous for intensive paddy cultivation, supported by the extensive Cauvery irrigation network.
13. **(C)** Kangchenjunga (8,586 m), the third highest mountain in the world, lies on the border between Sikkim (India) and Nepal.
14. **(C)** Tamil Nadu has 38 districts as of 2024, after several rounds of bifurcation including the creation of new districts like Chengalpattu, Ranipet, Tenkasi, and others in 2019.
15. **(C)** The Gulf of Mannar Marine National Park was established in 1986 and covers 21 islands in the Gulf of Mannar, off the coasts of Ramanathapuram and Thoothukudi districts in Tamil Nadu.
16. **(B)** The Deccan Plateau is bounded on the east by the Eastern Ghats, which are discontinuous hills running parallel to the eastern coast of India.
17. **(B)** Tamil Nadu receives most of its rainfall (about 60%) from the North-East Monsoon (October–December), unlike the rest of India which gets it from the South-West Monsoon (June–September).
18. **(B)** Kanyakumari (Cape Comorin) is where the Bay of Bengal (east), Arabian Sea (west), and Indian Ocean (south) meet, making it a unique geographical and cultural site.
19. **(C)** Dindigul district is the largest district by area in Tamil Nadu, covering approximately 6,267 sq km, though this may vary slightly with district reorganisations.

- 20. (C)** The Buckingham Canal is an inland navigation canal running along the Coromandel Coast from Chennai (Madras) northward toward Vijayawada (Andhra Pradesh), originally built for coastal transport.
- 21. (C)** The Deccan Traps cover approximately 500,000 km<sup>2</sup> of peninsular India, formed by massive volcanic eruptions 65-66 million years ago (Cretaceous-Paleogene boundary).
- 22. (A)** During positive IOD events, the western Indian Ocean is warmer than the east; this enhances evaporation, moisture transport, and consequently Indian monsoon rainfall.
- 23. (D)** The Strait of Malacca (between Malaysia and Indonesia) is one of the world's most critical sea lanes — over 80,000 vessels annually, carrying 25-30% of global trade including India's energy imports.
- 24. (B)** The Indus rises near Mansarovar Lake in the Tibetan Plateau (called Sengge Zangbo), flowing through Ladakh before entering Pakistan.
- 25. (D)** The Ring of Fire is a 40,000 km horseshoe-shaped zone along Pacific tectonic plate boundaries where approximately 90% of the world's earthquakes and 75% of its volcanoes occur.