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DAY 16

Concept-first Study Notes

APPSC Group 1 · Topics 151–160 · English

Ten concept-first lessons covering mechanisms, patterns, examples, applications, worked calculations and common exam traps. Questions, keys and full explanations are in the separate practice booklet.

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Read each concept through its mechanism, pattern, example and application. Necessary historical and legal qualifications are preserved. Source IDs are local to each topic; consult the separate Source Index for full records.

DAY 16 | TOPIC 151

Vijayanagara administration: nayankara and ayagar systems

History & Culture | Unit A-3

1. Concept in one line

Vijayanagara linked royal authority to territorial revenue and military service through the amara-nayakas, while hereditary ayagars handled village administration and essential services. Trace who governed, who collected revenue, what each group owed, and how the arrangement changed when the centre weakened.

2. Revision notes

2.1 The king and the council

- **Recall (Topic 22):** the empire was founded in 1336 and ruled by four dynasties, Sangama, Saluva, Tuluva and Aravidu; it reached its height under Krishnadevaraya (1509 to 1529).
- **The king (raya)** was the head of all power, civil, military and judicial. Royal orders were signed "Shri Virupaksha", usually in the Kannada script. Central authority varied over time, with recurring pressures towards decentralisation.
- **The council:** the king was helped by a council of ministers headed by a prime minister. The titles included *pradhana* (the ministers) and *mahapradhana* or *pradhani* (the prime minister). Saluva Timma (Timmarusu) was Krishnadevaraya's chief minister (Topic 22), and Rama Raya was the chief minister of Vijayanagara in 1565.
- **Other officers:** a chief secretary (*karyakartha* or *rayaswami*), a large staff of scribes, and a secretariat near the palace whose records were sealed with the king's ring. The palace administration had departments known as *niyogas*; the traditional count is 72, recorded in K.A. Nilakanta Sastri’s account. Ministers were drawn mostly from the Brahmanas but also from the Kshatriyas and the Vaishyas, and an office was sometimes hereditary.

[S1–S4, S12]

2.2 Provinces, districts and the village

- **Provinces:** the early Sangama rulers held five provinces (*rajyas*), with more added as the empire expanded. Provinces were commonly entrusted to royal princes or trusted nobles. Royal governors helped the king check the power of the nayakas. Provincial military commanders bore titles such as *dandanayaka* or *dandanatha*.
- **A useful simplified sequence:** province → district → sub-district → village.

Unit	Common teaching term	Function
Province	Rajya or mandala	Large territorial division under a governor
District	Nadu	Intermediate territorial unit
Sub-district	Sthala	Smaller local division
Village	Grama	Basic settlement and local administrative unit

- **Regional variation matters:** vishaya, vente, kottam, sime and kampana also occur in descriptions of territorial units. Their usage and position varied by region and period. The sequence above is a learning aid, not a single uniform hierarchy used throughout the empire.
- **Compare the Mughals (Topic 101):** suba → sarkar → pargana → village.

[S2–S4, S6, S7, S16]

2.3 The nayankara system

- **Who the nayakas were:** military chiefs who usually controlled forts and had armed supporters, and who usually spoke Telugu or Kannada. Many submitted to the kings, but they often rebelled and had to be subdued.
- **Amara-nayakas:** military commanders given territories to govern by the raya. The territory, or the right to its revenue, was called *amaram*. The term *amara* may be linked to the Sanskrit *samara* (battle or war), and resembles the Persian *amir* (a high noble). The nayankara arrangement linked territorial revenue rights with military service; it has also been described as a form of military feudalism [S2].
- **How revenue supported their duties:** they collected taxes and other dues from peasants, craftspersons and traders. They retained part of the revenue for personal use and for maintaining a stipulated contingent of horses and elephants. Some of the revenue was also used to maintain temples and irrigation works. No uniform retained fraction is established here.
- **What they owed the king:** troops for his wars, and tribute sent every year. They also appeared at court in person with gifts to show their loyalty.
- **At the Mahanavami:** on the last day of this festival the king inspected his own army and the armies of the nayakas in an open field, and the nayakas brought rich gifts for him as well as the stipulated tribute.
- **How the king kept control:** Kings occasionally transferred nayakas. The centre assessed the value of provincial lands and fixed the troop contribution expected from their revenues.
- **Connection with the iqta system:** it is likely that many features of the amara-nayaka system were derived from the iqta system of the Delhi Sultanate (Topic 452).
- **Numbers:** Nuniz reported about 200 nayakas; this is a traveller's count, not a fixed number for every reign.

- **Andhra example:** Kondavidu was taken in 1515, in Krishnadevaraya's Gajapati war. Nuniz records Saluva Timma as governor of the conquered provinces. Sewell cites an inscription at Kondavidu naming Timma's nephew, Nadendla Gopamantri, as captain.

Point	Amara-nayaka (Vijayanagara)	Mansabdar holding a jagir (Mughal, Topic 101)
What he was given	A territory (amaram) to govern	A rank (mansab); pay in cash or through a revenue assignment (jagir)
Did he govern the area?	Yes. He collected the taxes and dues himself	A jagir was a revenue assignment, not by itself a governorship; mansabdars generally collected through servants and did not reside in their jagirs
Troops	A stipulated contingent of horses and elephants	The number of horsemen fixed by his sawar rank
Transfer	Occasionally transferred by the king	Jagirs were rotated from time to time
In times of weakness	Built semi-independent hereditary holdings	Mansab and service jagir were not automatically hereditary; resumption of the assignment must not be confused with confiscation of every item of personal property

[S1–S6, S23, S24]

2.4 The ayagar system

- **The ayagar system:** hereditary village functionaries provided local administration and essential services. The number and combination of offices varied by region; a conventional list of twelve should not be treated as twelve identical posts in every village.

Work	Office or service
Village leadership	Reddi or gauda
Keeping accounts	Karanam or senabhova
Watch and security	Talari or talaiyari
Water management	Neerati or niranikkar
Other services	Priest, blacksmith, carpenter, potter, washerman and barber

- **Payment:** land assignments or a share of produce supported these services. Land was generally *manyam* (tax-free), although some holdings carried a fixed rent. Offices could be hereditary, sold or mortgaged.

- **Local variation:** village arrangements were not one rigid empire-wide ladder. Do not confuse hereditary village servants with the amara-nayakas, who governed territories and maintained troops.
- **Continuity:** ayagar-type arrangements predated Vijayanagara, including in Kakatiya villages. They spread from the Kannada to the Tamil country in the fifteenth and sixteenth centuries; they should not be presented as a system invented by Vijayanagara.
- **Later Andhra connection:** the accountant (*karanam*) and headman (*munsif*) continued under British rule. N. Ashirvad's study dates the formal British institution of these village offices in Andhra to 1889 [S11]. The Andhra Pradesh Abolition of Posts of Part-time Village Officers Act, 1985 abolished the specified part-time posts, including headman, munsif, reddy and karnam, with effect from 6 January 1984 and allowed the District Collector to appoint Village Assistants.

[S4, S6, S8–S11, S18]

2.5 Land revenue and other taxes

- **Land revenue (*sist*)** was the main income of the State. Land was surveyed and assessed with attention to soil fertility. Categories included wet (*nanjai*), dry (*punjai*) and garden (*totta*) land.
- **Keep three amounts distinct:** the assessed tax rate; the cultivator's total burden, including payments to intermediaries; and the amount ultimately remitted to the king. These are not interchangeable. Demands varied, so there is no verified single empire-wide rate to apply to every holding.

Holding or term	Meaning
Amaram	Territory or revenue rights assigned to amara-nayakas; a major category of holding
Bhandaravada	Crown villages; part of their income maintained forts
Manyam	Tax-free land for Brahmans, temples, mathas or village services
Umbali	Rent-free service grant; treated as equivalent to manya in the Indian Epigraphical Glossary
Devadana	Grant to a temple
Dasavanda / dasabandha / kattu-kodage	Irrigation-related one-tenth share or entitlement, including maintenance of tanks and wells
Jodi	Tamil term for a small fixed quit-rent on land

- **Andhra example:** a 1547 inscription from Sadasivaraya's reign records a village at Patnam in Kadiri taluk given as *umbali*. The catalogue's Anantapur district label is publication-era geography. Patnam in Kadiri mandal is now in Sri Sathya Sai district, formed on 4 April 2022.
- **Revenue administration:** accounts recorded customs duties, transit taxes, professional fees and military spending. Revenue collection supported administration, warfare and public works.

- **Taxes beyond land:** grazing; houses and property; marriage; professions, including shopkeepers, washermen, potters and musicians; transit dues; and customs at ports.
- **Policy example:** Krishnadevaraya abolished the marriage fee.
- **Keep the categories apart:** land revenue came from agricultural holdings, transit dues from the movement of goods, customs from trade through ports, and professional taxes from occupations.

[S4, S5, S7, S12, S17, S19–S22, S25–S27]

2.6 The army

- **Two parts:** the king's own standing army, paid in cash, and the contingents kept by the nayakas. The king’s standing force was relatively small compared with the wider military resources available through the nayakas. The military department was called *Kandachara*, under a commander-in-chief (*dandanayaka*). The title *dandanayaka* could also refer to a provincial commander (2.2).
- **Horses and guns:** cavalry decided wars, so horses from Arabia and Central Asia were imported; local horse merchants (*kudirai chettis*) took part in the trade. Krishnadevaraya obtained guns and Arabian horses from Portuguese merchants. The Portuguese muskets made them important players, and the artillery was often manned by foreign gunners. Muslim soldiers were also enlisted (Topic 22), among them mounted archers.

[S1–S4, S6, S12]

2.7 Foreign visitors who describe the system

Visitor	From and when	What bears on the administration
Nicolo de Conti	Venetian merchant; about 1420	Described the city's fortifications and its army
Abdur Razzaq	Ambassador sent by the ruler of Persia (Shah Rukh) to Calicut; about 1443	Saw seven lines of forts; described the large record office and the Mahanavami festival
Domingo Paes	Portuguese, came with traders from Goa; about 1520, under Krishnadevaraya	The nayakas kept troops ready for the king's call and made annual payments to him
Fernao Nuniz	Portuguese horse trader; at Vijayanagara from 1535 to 1537	Wrote a chronicle of the kings; said all land belonged to the king, from whom the captains held it; counted about 200 nayakas; said the cultivators paid nine-tenths to their lord

- Robert Sewell's *A Forgotten Empire* (1900) translated the chronicles of Paes and Nuniz. Day 41 (Topic 401) takes up the travellers in full.

[S1, S4, S6, S13–S15, S24]

3. Extra section: the nayakas, from royal agents to independent kings

When	What happened
15th and 16th centuries	Nayakas govern their territories for the king, send troops and yearly tribute, and present gifts and the stipulated tribute at the Mahanavami
1529 (traditional chronology)	Viswanatha Nayaka is made the nayaka of Madurai; he divides his territory into 72 palayams
1529 to 1542	About 200 nayakas are reported for Achyutaraya's reign; this is not a fixed empire-wide establishment
After 1565	The nayakas of Madurai, Thanjavur and Jinji (Gingee) effectively assert their independence; Tirumala accepts these new states and keeps the allegiance of Mysore and Keladi
1601	The nayakas of Madurai, Thanjavur and Jinji join the most serious challenge to Venkata II. He defeats them, but his authority is not restored in the far south
1623 to 1659	Tirumala Nayaka of Madurai frees himself from Vijayanagara control
1642 to 1645	Sriranga III cannot control the nayakas; his last appeal to them ends in his defeat by their combined forces in 1645
By 1652	The sultans complete their conquest of the Karnataka country

- **From delegation to independence:** weakening central authority allowed powerful nayakas to turn territorial commands into independent kingdoms. Madurai, Thanjavur and Jinji asserted increasing independence after 1565; the process continued through the seventeenth century and further weakened the empire.
- **Two Tirumalas:** Tirumala of the Aravidu family was crowned in 1570 (Topic 22); Tirumala Nayaka ruled Madurai from 1623.

[S1, S2, S5]

4. Three common exam traps

1. **Tax assessment, total burden and royal remittance are different.** A cultivator's payments to local lords do not tell us how much reached the king. Revenue demands varied; no single fraction is established for every holding across the empire. Amara-nayakas retained part of their receipts for troops and other obligations.
2. **Match the village office to its function.** Karanam = accountant; reddi or gauda = headman; talari = watchman. Ayagars were hereditary village servants, not officers routinely sent from the capital. An amara-nayaka was a military chief responsible for a territory, revenue and troops.

3. **Independence developed over time.** Nayaka power expanded as the centre weakened after 1565; independent kingdoms became established through the seventeenth century. Distinguish Rama Raya and the Aravidu ruler Tirumala from Tirumala Nayaka of Madurai, who ruled in the next century.

DAY 16 | TOPIC 152

Revolt of 1857: nature, failure, consequences and significance

History & Culture | Unit A-5

1. Concept in one line

The Revolt of 1857 began among sepoys and drew wider participation in parts of north and central India; uneven support, weak coordination and British resources contributed to its defeat. It ended Company rule and reshaped the army and colonial alliances, while different interpretations of its aims and participants influenced later nationalist memory.

2. Revision notes

2.1 Recall from Topic 41

- The revolt began with the rising of the sepoys at Meerut on 10 May 1857. At Delhi on 11 May, Bahadur Shah II accepted its nominal leadership, and it spread over north and central India.
- Its causes, centres, leaders and the regions that stayed out are in Topic 41. The revolt in the Andhra region is Topic 951.

2.2 The nature of the revolt: the main interpretations

An interpretation explains what kind of event 1857 was. Different writers emphasise different participants, aims and forms of resistance.

Interpretation	Associated writer or tradition	Central argument
Sepoy mutiny	Colonial British writing	Emphasised the rebellion of soldiers and denied or minimised broader popular and national aims. It denied native leadership and popular support; hostile descriptions portrayed the rebels as selfish, unpatriotic, ungrateful and barbaric
War for swadharma and swaraj	V.D. Savarkar, The Indian War of Independence	Presented the revolt as a unified national rising for faith and self-rule

Savarkar's work: written in 1907 at India House, London; published in English in 1909; banned in British India until 1947.

Compare the emphasis: the mutiny interpretation foregrounds military rebellion; Savarkar's interpretation foregrounds a common struggle against foreign rule. These are attributed interpretations, not interchangeable factual labels.

Historian and work	Interpretation	Reasoning
R.C. Majumdar, The Sepoy Mutiny and the Revolt of 1857 (1957)	Rejected the classification of 1857 as a national war of independence	Argued that the revolt did not evoke national feeling at the time
S.N. Sen, Eighteen Fifty-Seven (1957)	“What began as a fight for religion ended as a war of independence”	The uprising was not pre-planned. It began among soldiers, acquired political character when the Meerut mutineers turned to the King of Delhi, and gained a national dimension in Awadh, although Indian nationality was still “yet in embryo”

Sen’s book: an official centenary history, commissioned by Education Minister Maulana Abul Kalam Azad and published by the Government’s Publications Division.

Majumdar’s first edition was published in Calcutta in 1957; a later edition appeared in 1963. His argument about national feeling is time-qualified, concerning the revolt itself (1957 edition, pp. 412, 424). A contemporary 1957 review described his emphasis on religious sentiment and saw his conclusion as close to official British histories despite different premises [S8, S15, S21].

The disagreement: Majumdar questioned the national character; Sen traced a change from military and religious resistance towards a wider political struggle. Keep these arguments distinct.

View	Writer or tradition	Interpretation
A national revolt	Benjamin Disraeli, in the House of Commons on 27 July 1857	He asked "Is it a military mutiny, or is it a national revolt?" His conclusion, as Marx reported it, was that it was not a military mutiny but a national revolt
Hindus and Muslims combined	Karl Marx, "The Revolt in the Indian Army", *New-York Daily Tribune*, 15 July 1857	It was the first time that sepoy regiments had murdered their European officers, and that "Mussulmans and Hindoos, renouncing their mutual antipathies, have combined against their common masters"
A feudal reaction	R.P. Dutt, a Marxist, in *India Today*	A revolt of the old conservative and feudal forces. Dutt called it reactionary
A peasant war	Talmiz Khaldun, a Marxist, in P.C. Joshi (editor), *1857: A Symposium*	A peasant war against indigenous landlordism and foreign imperialism
A rising of many classes	S.B. Choudhury, *Civil Rebellion in the Indian Mutinies* (1957)	The first combined attempt of many classes of people to challenge a foreign power
The First War of Independence	Indian nationalist interpretation	Nationalists celebrated it as the First War of Independence, emphasising cooperation among different sections against foreign rule rather than a revolt of only one class

Why interpretations differ: historians weigh military action, popular participation, religion, regional spread and national consciousness differently. A label is an interpretation of the revolt, not a substitute for evidence.

- **Disraeli:** argued that the events amounted to a national revolt, not merely a military mutiny. Marx reported his parliamentary speech in the New-York Daily Tribune on 14 August 1857.
- **Marx:** highlighted Hindus and Muslims combining against their common rulers. Distinguish Marx's own argument from the words of the speech he reported.
- **Majumdar:** rejected treating the revolt as a national war of independence. Keep this argument distinct from the nationalist interpretation.
- **Nationalist interpretation:** remembered 1857 as the First War of Independence and stressed resistance to foreign rule.

Titles do not prove who coined a phrase. Savarkar's 1909 work was titled The Indian War of Independence. Later editions and collections used "First" in their titles, including the 1959 collection of Marx and Engels. A later title by itself cannot establish the phrase's first-ever use.

How to answer: identify the thinker, state the interpretation, and explain the evidence or emphasis behind it. Do not merge the distinct views into one statement.

[S1, S3, S7–S10, S12–S15, S19–S21]

2.3 Hindu-Muslim unity in the revolt

- The rebel proclamations appealed to all sections of the people, irrespective of caste and creed.
- A proclamation issued in Bahadur Shah's name asked the people to fight under the standards of both Muhammad and Mahavir.
- At Bareilly the British spent Rs 50,000 to incite the Hindus against the Muslims. The attempt failed.
- Cooperation during the revolt crossed caste, community and class boundaries; Hindu-Muslim unity was an important feature.

[S1, S3]

2.4 Why the revolt failed

Reason	How it weakened the revolt
Limited spread	The rising remained confined to north and central India. Kashmir, the Punjab, Sind and Rajputana largely stayed out. Bengal and the south were largely quiet (Topic 41)
Loyal princes and landholders	Many Indian rulers refused to help the rebels, and some were openly hostile to them. The new zamindars were the political allies of the British. The Madras and Bombay regiments, the Sikh states, the Afghans and the Gurkhas stayed with the British

Reason	How it weakened the revolt
The educated middle class	The middle and upper classes and the modern educated Indians did not support the revolt
No common plan or leadership	The revolt was not pre-planned (Sen). There was no unity of purpose, and no national leader emerged to coordinate it. Jealousy and mutual suspicion among the rival chiefs hampered a union of the rebel forces (Majumdar's interpretation). Defeats led to desertions
Poorer arms and money	The rebels were short of weapons and finances, and their weapons were old
British resources	The telegraph and the postal system let the British move quickly. Mastery of the sea brought timely help from England. The British brought reinforcements from Britain, passed new laws so that rebels could be convicted with ease, and put the whole of north India under martial law

[S1–S3, S8]

2.5 The consequences

Change	What it did
End of the Company's rule	The Act of August 1858 (the Government of India Act, called the Act for the Better Government of India) transferred the Company's powers to the British Crown. The Board of Control and the Company's Directors were abolished. A member of the British cabinet became the Secretary of State for India, advised by the Council of India. The details are in Topic 12
The Viceroy	The Governor-General also acted as the Crown's representative, or Viceroy. The Queen's Proclamation named Canning the first Viceroy; the title itself does not occur in the Act of 1858
The Queen's Proclamation, 1 November 1858	Canning announced it to "the Princes, Chiefs and Peoples of India". It reversed Dalhousie's policy of annexing princely states. It disclaimed further territorial expansion and promised to honour Company treaties and princely rights. Recognition of adopted heirs belonged to the associated post-1858 settlement; it is not an express clause of the Proclamation. The princes had to accept the British Queen as their Paramount Sovereign. It promised non-interference in religious belief or worship, and racial equality of opportunity in the selection of civil servants
The army	The proportion of Indian soldiers was reduced and the number of European soldiers increased. The troop balance changed from 43,000 British to 228,000 Indian troops in 1857 to 65,000 British to 140,000 Indian by 1867. That is about 1 British soldier to 5 Indians before, and about 1 to 2 after
Recruitment	More soldiers were recruited from the Gurkhas, the Sikhs and the Pathans. Groups that were called "nonmartial" (meaning previously disloyal) were screened out, and communities were mixed in every regiment
Weapons	Most artillery was manned by British soldiers after the revolt, but Indian mountain batteries remained.

Change	What it did
End of the Mughal dynasty	Bahadur Shah Zafar, the last Mughal emperor, was tried and sentenced to life imprisonment. He and his wife Begum Zinat Mahal were sent to Rangoon in October 1858. He died there on 7 November 1862. The deposition of Bahadur Shah ended the Mughal imperial office during the suppression of the revolt, not only with his death in 1862. Nana Sahib's bid to restore Peshwa authority failed; the ruling Peshwaship had already been abolished after Baji Rao II's defeat in 1818.
Divide and rule	The British blamed the Muslims in a big way: their land and property were confiscated on a large scale, and they were treated with suspicion. The resulting distrust was later exploited through divide-and-rule policies
The princes	From annexation to support. The princes were now kept as "natural breakwaters" of British rule, and more than 560 princely states survived for the nine decades of Crown rule
The landed classes	Rebel landholders were dispossessed and the loyal were rewarded. Later policies protected the landlords and zamindars and gave them security of rights over their lands
Social policy	The British agreed to respect the customary religious and social practices of the people. This marked greater official caution about social intervention, not the end of all later social legislation.

- The Indian Councils Act of 1861 is taught on another day.

[S2–S6, S16–S18, S22]

2.6 Significance and memory

- **A legacy for nationalism.** The revolt became a powerful symbol of resistance to British rule and a source of inspiration for later nationalism. Nationalist writing later celebrated it as the First War of Independence. In popular prints Rani Lakshmi Bai is usually shown in battle armour, sword in hand, riding a horse.
- **The darker side.** Racial bitterness and distrust were damaging legacies of the conflict.
- **Anniversaries.** The centenary fell in 1957, the year of Sen's official history. The 150th anniversary fell in 2007. These anniversaries encouraged renewed debate about how the revolt should be remembered. A survey of 150 years of writing appeared in the North Bengal University history journal in 2008 [S7].

[S1, S3, S7]

3. Extra section: chronology from the fall of Delhi to the 150th anniversary

Date	Event
Late September 1857	Bahadur Shah II is arrested after Delhi falls

Date	Event
1857	Marx writes on the revolt in the *New-York Daily Tribune*
June 1858	Rani Lakshmi Bai is killed in battle
August 1858	The Act for the Better Government of India transfers the Company's powers to the Crown
October 1858	Bahadur Shah and Begum Zinat Mahal are sent to Rangoon
1 November 1858	Canning announces the Queen's Proclamation
8 July 1859	Hostilities are formally declared ended
7 November 1862	Bahadur Shah dies in Rangoon
By 1867	The army stands at 65,000 British to 140,000 Indian soldiers
1907	Savarkar writes *The Indian War of Independence* at India House, London
1909	Savarkar's book is published in English
1946	Mehta's *The Great Rebellion*
1947	First public edition of Savarkar's book in India
1957	Centenary year: S.N. Sen's *Eighteen Fifty-Seven* and S.B. Choudhury's *Civil Rebellion in the Indian Mutinies*
1959	Moscow collection of Marx and Engels titled *The First Indian War of Independence 1857-1859*
1963	Later edition of R.C. Majumdar's *The Sepoy Mutiny and the Revolt of 1857*
2007	150th anniversary of the revolt

4. Three common exam traps

1. **"The Act of 1858 created the Viceroy."** The office of Governor-General continued under Crown rule, with the additional title of Viceroy. The word itself is not in the Act: the Queen's Proclamation of 1 November 1858 named Canning the first Viceroy (Topic 12). The Proclamation was a royal announcement, not an Act of Parliament.
2. **Do not infer who coined "First War of Independence" from a later title.** Savarkar's 1909 title was The Indian War of Independence. The 1959 Moscow collection of Marx and Engels used "First" in its title. A later title does not establish who first coined the phrase; identify the author's actual argument rather than inferring authorship from a collection's name.
3. **"The Proclamation made the princes independent."** It disclaimed territorial expansion and promised to honour Company treaties. Recognition of adopted heirs was part of the associated post-1858 settlement. But the princes had to accept the Queen as their Paramount Sovereign. The British kept them as breakwaters of their own rule.

DAY 16 | TOPIC 153

How a bill becomes law: ordinary and constitution amendment bills

Constitution, Polity, Social Justice & IR | Unit B-2

1. Concept in one line

A Bill becomes an Act of Parliament when both Houses have passed it, or are deemed to have passed it, and the President has given his assent; the route differs for ordinary Bills, Money Bills, Financial Bills and Constitution Amendment Bills. The examination asks about the stages in each House, the joint sitting, the President's choices, how the four kinds differ and which Bills lapse when the Lok Sabha is dissolved.

2. Revision notes

2.1 Kinds of Bills and the voting rule

- **Earlier topics:** the Lok Sabha was taught in Topic 54, the Rajya Sabha in Topic 82 and the amendment procedure under Article 368 in Topic 104.
- A **Bill** is the draft of a proposed law. Article 100(1): questions in either House, or at a joint sitting, are decided by a majority of the members present and voting. So an ordinary Bill needs only this **simple majority** in each House.
- **By who moves it.** A Bill introduced by a Minister is a Government Bill; one introduced by any other member is a Private Member's Bill.
- **Where it may start.** Article 107(1): subject to Articles 109 and 117, "a Bill may originate in either House of Parliament".

2.2 The stages of an ordinary Bill in a House

Stage	What happens
First Reading (introduction)	The member in charge moves for leave of the House to introduce the Bill. If the motion is opposed, he and the member opposing make brief statements, and the question is put to the vote. The principles of the Bill are ordinarily not debated now; Rule 72 permits a full discussion when introduction is opposed on legislative-competence grounds
Second Reading, first stage	General discussion of the Bill as a whole and its principles. The House may then refer it to a Select Committee of the House or a Joint Committee of the two Houses, circulate it to elicit opinion, or take it into consideration straightaway
Committee stage (if referred)	The committee goes through the Bill clause by clause, may amend it and may take evidence from associations, public bodies or experts. It then reports to the House

Stage	What happens
Second Reading, second stage	Clause-by-clause consideration of the Bill, as introduced or as reported by the committee. Members move amendments to clauses
Third Reading	The member in charge moves that the Bill be passed. Debate is confined to arguments for or against the Bill. "Only formal, verbal or consequential amendments are allowed at this stage"

- **Publication.** Once a Bill is introduced it is published in the Gazette of India, unless it has already been published (Lok Sabha Rule 73). Under Rule 64 the Speaker may order publication before introduction; in that case a motion for leave to introduce is unnecessary, and publication need not be repeated. Committee reference is optional, not an inevitable stage.

2.3 The other House and its choices

After one House passes the Bill, it is transmitted to the other House, which takes it through similar stages. The other House may:

1. **pass it** as it stands: it then goes to the President;
2. **pass it with amendments:** it goes back to the first House, and the Bill is passed only if both agree on the amendments;
3. **reject it;** or
4. **not pass it** for more than six months from the date it received the Bill.

In cases 3 and 4, and when the Houses have finally disagreed on the amendments, the President may call a joint sitting (2.4).

2.4 The joint sitting: Article 108

- **How it is called.** In the three cases of 2.3, the President notifies his intention to summon a joint sitting by message if the Houses are sitting, or by public notification if they are not (Article 108(1)).
- **Counting the six months.** Days when the House is prorogued, or adjourned for more than four consecutive days, are not counted (Article 108(2)).
- **Majority.** The Bill is deemed passed by both Houses if it is passed by "a majority of the total number of members of both Houses present and voting" (Article 108(4)). Only limited amendments may be proposed at the sitting.
- **Who presides.** The Speaker of the Lok Sabha, or in his absence the person decided by the rules of procedure (Article 118(4)). The Chairman of the Rajya Sabha does not preside.
- **Not for two kinds of Bill.** Article 108 does not apply to a Money Bill. A Constitution Amendment Bill must be passed by each House separately, so there is no joint sitting for it either (Topic 104).
- **Dissolution.** A joint sitting notified before the Lok Sabha is dissolved may still be held after the dissolution, and the Bill passed; but none can be called on a Bill that has already lapsed (Article 108(5)).

- **Seat strength and voting strength differ:** the usual full strengths of 543 Lok Sabha seats and 245 Rajya Sabha seats show the Lok Sabha's numerical advantage. Vacancies and attendance can change the number voting; passage depends on the members present and voting (Topic 82). Sessions and joint sittings are covered in Topic 432.

Joint sitting	Bill passed
1961	Dowry Prohibition Bill, 1959
16 May 1978	Banking Service Commission (Repeal) Bill, 1977
26 March 2002	Prevention of Terrorism Bill, 2002

2.5 The President's assent: Article 111

- When both Houses have passed a Bill, it is presented to the President. He must declare either that he assents to it or that he withholds assent.
- **Return.** For a Bill that is not a Money Bill, he may instead, as soon as possible, return it with a message asking the Houses to reconsider it, or parts of it, and any amendments he recommends. If the Houses pass it again, with or without amendment, he "shall not withhold assent therefrom". So he can return a Bill only once.
- **Pocket veto.** Article 111 fixes no time limit for assent. In 1986 President Zail Singh neither assented to nor returned the Indian Post Office (Amendment) Bill, 1986, which both Houses had passed. This is called a pocket veto.
- **State Bills (Topics 4 and 132).** Keep Article 200 separate from Article 111. The Supreme Court's 20 November 2025 advisory opinion (2025 INSC 1333, paragraph 165.1) states three Governor options: assent; reserve the Bill for the President; or, for a non-Money Bill, withhold assent and return it with comments for reconsideration. Withholding and return are coupled, not two independent options. Article 201 governs the President's action on a reserved State Bill. The opinion rejects court-made fixed timelines and deemed assent, while permitting limited judicial intervention in cases of prolonged, unexplained and indefinite inaction by the Governor.

2.6 The Money Bill: Articles 109 and 110

- **What it is (Article 110(1)).** A Bill is a Money Bill if it contains only provisions dealing with all or any of these: (a) taxes; (b) borrowing or guarantees by the Government of India; (c) the Consolidated Fund and the Contingency Fund of India; (d) appropriation out of the Consolidated Fund; (e) expenditure charged on it; (f) receipts into the Consolidated Fund or the public account of India, and audit; (g) any matter incidental to these.
- **What does not make it one (Article 110(2)).** Fines or other pecuniary penalties, fees for licences or for services, and taxes levied by a local authority for local purposes.

- **The Speaker decides.** If a question arises whether a Bill is a Money Bill, "the decision of the Speaker of the House of the People thereon shall be final" (Article 110(3)). This constitutional finality does not mean total immunity from judicial review for substantive illegality or constitutional violation (Supreme Court, Subhash Desai, 11 May 2023, paragraph 96, discussing the Money Bill cases).
- **Where and how.** A Money Bill "shall not be introduced in the Council of States" (Article 109(1)), and it needs the President's recommendation for introduction (Article 117(1)).
- **The Rajya Sabha's role (Article 109).** It must return the Bill within fourteen days of receiving it, with its recommendations. The Lok Sabha may accept or reject any or all of them. If the Rajya Sabha does not return it in time, the Bill is deemed passed by both Houses at the end of the fourteen days, in the form in which the Lok Sabha passed it.
- The Budget, the Finance Bill and the Appropriation Bill come in Topic 162.

2.7 Financial Bills: Article 117

- **Article 117(1).** A Bill that makes provision for any of the matters in sub-clauses (a) to (f) of Article 110(1) but also contains provisions outside the matters permitted by Article 110(1)(a)–(g), and so is not a Money Bill. It cannot be introduced in the Rajya Sabha, and needs the President's recommendation for introduction. No recommendation is needed to move an amendment that reduces or abolishes a tax. After introduction it goes like an ordinary Bill: the Rajya Sabha may amend or reject it, and a joint sitting may be held on it, because Article 108 shuts out only Money Bills.
- **Article 117(3).** A Bill which, if enacted and brought into operation, would involve expenditure from the Consolidated Fund of India. It may be introduced in either House without a recommendation, but it "shall not be passed by either House of Parliament unless the President has recommended" to that House that it be considered. In all else it is an ordinary Bill.

2.8 The Constitution Amendment Bill: Article 368 (Topic 104)

- It may be introduced in either House, by a Minister or by a private member.
- Article 368 does not require the President's recommendation for introducing it.
- Each House must pass it separately by a **special majority**: a majority of its total membership and a majority of not less than two-thirds of its members present and voting. There is no joint sitting if the Houses disagree.
- If it changes a matter listed in the proviso to Article 368(2), it must also be ratified by the Legislatures of not less than one-half of the States before it goes to the President.
- The President "shall give his assent". These words came in with the 24th Amendment (1971), so he can neither withhold assent nor return the Bill.

- **Compare a Bill under Article 3** (a new State, or a change in the area, boundaries or name of a State; Topics 104 and 132). It may be introduced only on the President's recommendation, and if it affects a State's area, boundaries or name he first refers it to that State's Legislature for its views. It is then passed like an ordinary law, by a simple majority, because Article 4(2) says it is not an amendment for the purposes of Article 368.

2.9 The four kinds compared

Point	Ordinary Bill	Money Bill	Financial Bill, Article 117(1)	Financial Bill, Article 117(3)	Constitution Amendment Bill
Where it may be introduced	Either House	Lok Sabha only	Lok Sabha only	Either House	Either House
President's recommendation	Generally not needed; special constitutional exceptions apply, such as Article 3	Needed for introduction	Needed for introduction	Needed before either House passes it	Not needed
Majority in each House	Simple	Simple, in the Lok Sabha	Simple	Simple	Special
Rajya Sabha's power	Full: it may amend or reject	Recommendations only, within 14 days	Full	Full	Full: each House must pass it separately
Joint sitting	Possible	Not possible	Possible	Possible	Not possible
President's choices	Assent, withhold, or return once	Assent or withhold; no return	Assent, withhold, or return once	Assent, withhold, or return once	Must assent

2.10 Which Bills lapse when the Lok Sabha is dissolved

Prorogation does not make any Bill lapse (Article 107(3)). Dissolution of the Lok Sabha does:

Bill	Lapses?	Why
Pending in the Lok Sabha, whether it began there or came from the Rajya Sabha	Yes	Article 107(5)
Passed by the Lok Sabha and pending in the Rajya Sabha	Yes	Article 107(5)
Pending in the Rajya Sabha and not yet passed by the Lok Sabha	No	Article 107(4)

Bill	Lapses?	Why
A Bill on which the President has given notice of a joint sitting before the dissolution	No: the joint sitting may still be held	Article 108(5)
Passed by both Houses and awaiting the President's assent	No	It is pending in neither House, so Article 107(5) does not reach it

3. Extra section: the path of an ordinary Government Bill that starts in the Lok Sabha, and where the other kinds branch off

Step	What happens	Where another kind differs
1. Introduction (First Reading)	A Minister moves for leave; if opposed, brief statements and a vote; the Bill is published in the Gazette	A Money Bill and a Financial Bill under Article 117(1) need the President's recommendation and cannot start in the Rajya Sabha
2. Second Reading, first stage	Debate on principles; the Bill may go to a Select or Joint Committee or be circulated for opinion	None
3. Committee report (if referred)	Clause-by-clause examination; evidence; report	None
4. Second Reading, second stage	Clause-by-clause consideration and amendments	A Financial Bill under Article 117(3) cannot be passed without the President's recommendation for its consideration
5. Third Reading	Motion that the Bill be passed; only formal, verbal or consequential amendments; simple majority of members present and voting	A Constitution Amendment Bill needs the special majority
6. In the Rajya Sabha	Similar stages; the House may pass, amend, reject, or not pass the Bill for more than six months	For a Money Bill: only recommendations, within 14 days
7. Deadlock	The President may summon a joint sitting, presided over by the Speaker	No joint sitting for a Money Bill or a Constitution Amendment Bill
8. Assent	Assent, withhold, or return once for reconsideration	A Money Bill cannot be returned; a Constitution Amendment Bill must receive assent

Two checks:

- If the Lok Sabha is dissolved between steps 5 and 6, the Bill lapses (Article 107(5)). Had it started in the Rajya Sabha and still been there, unpassed by the Lok Sabha, it would have survived (Article 107(4)).

- A Bill becomes an Act when the President gives assent at step 8, not merely when it is presented or returned. Enactment and commencement may be different dates: an Act may specify its operative date or require a commencement notification. If it needs ratification by the States (some Constitution Amendment Bills), that comes between passage by Parliament and step 8.

4. Three common exam traps

1. **"The First Reading is the debate on the Bill."** The First Reading is ordinarily introduction, subject to the Rule 64 publication exception and Rule 72 legislative-competence exception: a motion for leave, and if it is opposed, two brief statements and a vote. The principles are debated at the first stage of the Second Reading, the clauses at its second stage, and at the Third Reading only formal, verbal or consequential amendments are allowed. Circulation for opinion and reference to a Select or Joint Committee are choices made at the Second Reading, not at introduction.
2. **"Any Bill with a tax in it is a Money Bill."** A Money Bill must contain only the matters listed in Article 110(1). Fines, licence fees, fees for services and local taxes for local purposes do not make a Bill a Money Bill. A Bill that has a tax clause along with provisions outside the matters permitted by Article 110(1)(a)–(g), is a Financial Bill under Article 117(1), not a Money Bill. Whether a Bill is a Money Bill is decided by the Speaker, and Article 110(3) calls his decision final, subject to the judicial-review qualification in 2.6; it is not decided by the President or by the Chairman of the Rajya Sabha.
3. **"The joint sitting is presided over by the Chairman, and it cannot be held once the Lok Sabha is dissolved."** Both parts are wrong. The President summons it and the Speaker of the Lok Sabha presides (Article 118(4)). If the President has notified the joint sitting before the dissolution, it may still be held and the Bill passed (Article 108(5)). What blocks a joint sitting is a Bill that had already lapsed before the notice was given.

DAY 16 | TOPIC 154

Directive Principles of State Policy: classification and key articles

Constitution, Polity, Social Justice & IR | Unit B-1

1. Concept in one line

The Directive Principles of State Policy are the principles in Part IV of the Constitution (Articles 36 to 51) that no court can enforce but that the State has a duty to apply in making laws. The examination asks what each Article directs, which amendment added it, their common thematic groupings, and how the courts have set them beside the Fundamental Rights.

2. Revision notes

2.1 Part IV and Article 37

- Part IV carries the heading "Directive Principles of State Policy" and runs from Article 36 to Article 51. Text basis: Constitution as on 1 May 2024.
- **Article 36:** "In this Part, unless the context otherwise requires, "the State" has the same meaning as in Part III." That meaning is the one in Article 12 (Topic 62).
- **Article 37** ("Application of the principles contained in this Part") reads: "The provisions contained in this Part shall not be enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws."
- **Why non-justiciable?** the framers wanted guidelines for future governments but did not want to bind them to particular policies. The principles were not made legally enforceable, that is, they are non-justiciable. The framers relied on their moral force and on the people to hold governments to them.

2.2 Where the idea came from, and Dr B.R. Ambedkar's words

- **Irish influence:** the Constitution of Ireland, 1937 provided an important model for Directive Principles.
- **Instrument of Instructions:** compare the Directive Principles with the Instruments of Instructions issued under the Government of India Act, 1935 (Topic 23). Those were addressed only to the Governor-General and the Governors; the Directive Principles are addressed to the State as a whole.
- **Dr B.R. Ambedkar.** In the Constituent Assembly on 19 November 1948 he explained the word "directive": the Assembly was "giving certain directions to the future legislature and the future executive". He added: "In my judgment, the directive principles have a great value, for they lay

down that our ideal is economic democracy." On the word "strive" in the draft of what is now Article 38 he said: "The word 'strive' which occurs in the Draft Constitution, in my judgment, is very important."

2.3 Three themes of the Directive Principles

The principles can be grouped by their main goals to make them easier to understand and remember. These are thematic study groups; the Constitution does not label or divide Part IV in this way.

Theme	Articles	What links them
Socialistic	38, 39, 39A, 41, 42, 43 (living wage and decent conditions of work), 43A, 47 (nutrition, standard of living, public health)	Justice, social and economic; livelihood, wages and work; reducing inequality
Gandhian	40, 43 (cottage industries), 43B, 46, 47 (prohibition of intoxicating drinks and harmful drugs), 48 (ban on slaughter of cows, calves and other milch and draught cattle)	Village self-government, cottage industries, co-operatives, the weaker sections, prohibition, protection of cattle
Liberal-intellectual	44, 45, 48 (agriculture and animal husbandry on modern and scientific lines), 48A, 49, 50, 51	Uniform civil code, early childhood care, modern farming, environment, monuments, separation of the judiciary, international peace

- Articles 43, 47 and 48 contain provisions serving more than one theme. Classify the particular provision, rather than assuming that every part of an Article must fit only one group.

2.4 Articles 38 to 51: the constitutional directions

Article	Marginal heading (short)	What it directs
38(1)	Social order for the welfare of the people	The State "shall strive to promote the welfare of the people" by securing a social order in which justice, social, economic and political, shall inform all the institutions of the national life
38(2)	(same Article)	The State shall in particular strive to minimise the inequalities in income, and endeavour to eliminate inequalities in status, facilities and opportunities, among individuals and also among groups of people in different areas or vocations
39(a)	Principles of policy	Citizens, men and women equally, have the right to an adequate means of livelihood
39(b)	(same Article)	Ownership and control of the material resources of the community are so distributed as best to subserve the common good

Article	Marginal heading (short)	What it directs
39(c)	(same Article)	The economic system does not result in the concentration of wealth and means of production to the common detriment
39(d)	(same Article)	Equal pay for equal work for both men and women
39(e)	(same Article)	The health and strength of workers and the tender age of children are not abused, and citizens are not forced by economic necessity into avocations unsuited to their age or strength
39(f)	(same Article)	Children get opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity; childhood and youth are protected against exploitation and against moral and material abandonment
39A	Equal justice and free legal aid	The legal system promotes justice on a basis of equal opportunity; free legal aid, so that no citizen is denied justice by reason of economic or other disabilities
40	Village panchayats	Organise village panchayats and give them the powers needed to function as units of self-government
41	Right to work, to education and to public assistance	Within the limits of its economic capacity and development, provide for the right to work, to education and to public assistance in unemployment, old age, sickness, disablement and other cases of undeserved want
42	Conditions of work and maternity relief	Just and humane conditions of work, and maternity relief
43	Living wage for workers	Work, a living wage, a decent standard of life, leisure and social and cultural opportunities for all workers, agricultural, industrial or otherwise; in particular, cottage industries in rural areas on an individual or co-operative basis
43A	Workers in management	Participation of workers in the management of undertakings, establishments or other organisations engaged in any industry
43B	Co-operative societies	Voluntary formation, autonomous functioning, democratic control and professional management of co-operative societies
44	Uniform civil code	A uniform civil code for the citizens throughout the territory of India
45	Early childhood care and education	Early childhood care and education for all children until they complete the age of six years
46	Weaker sections	Promote with special care the educational and economic interests of the weaker sections, in particular the Scheduled Castes and the Scheduled Tribes, and protect them from social injustice and exploitation

Article	Marginal heading (short)	What it directs
47	Nutrition, standard of living, public health	These are "among its primary duties"; in particular, prohibition of intoxicating drinks and of drugs injurious to health, except for medicinal purposes
48	Agriculture and animal husbandry	Organise them on modern and scientific lines; preserve and improve breeds; prohibit the slaughter of cows and calves and other milch and draught cattle
48A	Environment, forests and wild life	Protect and improve the environment and safeguard the forests and wild life of the country
49	Monuments	It "shall be the obligation of the State" to protect monuments, places and objects of artistic or historic interest declared by or under law made by Parliament to be of national importance
50	Separation of judiciary from executive	Take steps to separate the judiciary from the executive in the public services of the State
51	International peace and security	Promote international peace and security; just and honourable relations between nations; respect for international law and treaty obligations; settlement of international disputes by arbitration

2.5 The amendments that added or changed them

Amendment	What it did in Part IV	Section, and in force from
42nd Amendment Act, 1976	Substituted clause (f) of Article 39	Section 7; 3 January 1977
42nd Amendment Act, 1976	Inserted Article 39A	Section 8; 3 January 1977
42nd Amendment Act, 1976	Inserted Article 43A	Section 9; 3 January 1977
42nd Amendment Act, 1976	Inserted Article 48A	Section 10; 3 January 1977
44th Amendment Act, 1978	Renumbered Article 38 as clause (1) and inserted clause (2)	Section 9; 20 June 1979
86th Amendment Act, 2002	Substituted a new Article 45	Section 3; 1 April 2010

Amendment	What it did in Part IV	Section, and in force from
97th Amendment Act, 2011	Inserted Article 43B	Section 3; 15 February 2012

- The 86th Amendment also inserted Article 21A in Part III: free and compulsory education for children aged six to fourteen (Topic 642). It added Article 51A(k): the parent's or guardian's duty to provide educational opportunities to a child or ward aged six to fourteen. Article 45 concerns children until they complete six; these age ranges must not be interchanged.

2.6 Directive Principles and Fundamental Rights: the cases

Case or Act	Date	What it held or did
State of Madras v. Champakam Dorairajan	9 April 1951; seven judges; judgment by Das, J.	The Communal G.O. (Government Order) on college seats was void under Article 13 for violating Article 29(2) (Topic 73). Article 46 could not override Article 29(2): "The directive principles of State policy have to conform to and run as subsidiary to the Chapter of Fundamental Rights." They "cannot override the provisions found in Part III"
25th Amendment Act, 1971	In force from 20 April 1972	Inserted Article 31C: a law giving effect to "the principles specified in clause (b) or clause (c) of article 39" was not to be void for being inconsistent with Articles 14, 19 or 31; and a law declaring that it gave effect to that policy could not be questioned in court on the ground that it did not. It also put the word "amount" in place of "compensation" in Article 31(2)
Kesavananda Bharati	24 April 1973; 13 judges	The first part of Article 31C was upheld and the second part, the declaration clause, was struck down. By 7 to 6 Parliament cannot alter the basic structure (Topic 123)
42nd Amendment Act, 1976, section 4	In force from 3 January 1977	Widened Article 31C to laws for securing "all or any of the principles laid down in Part IV"
Minerva Mills	31 July 1980; five judges; Chandrachud, C.J.	Sections 4 and 55 of the 42nd Amendment were void. "Parts III and IV together constitute the core of our Constitution". The "harmony and balance between fundamental rights and directive principles is an essential feature of the basic structure"

- **Current Article 31C position:** Property Owners Association v. State of Maharashtra (5 November 2024, 2024 INSC 835) confirmed that Article 31C, to the extent upheld in Kesavananda Bharati, remains in force. The surviving protection is for laws genuinely giving effect to Article 39(b) or (c), against Articles 14 and 19; it is not a blanket shield for every Directive Principle. The Court also rejected treating every privately owned resource automatically as a "material resource of the community"; some private resources can qualify, depending on their nature and context.
- The right to property: the 44th Amendment (1978) removed it from the Fundamental Rights. Article 300A protects it as a constitutional legal right; deprivation must be by authority of law.

2.7 Directives outside Part IV

- Three Articles outside Part IV also give directions: Article 335 (Part XVI: the claims of the Scheduled Castes and the Scheduled Tribes "shall be taken into consideration, consistently with the maintenance of efficiency of administration", in appointments to services and posts); Article 350A (Part XVII: adequate facilities for mother-tongue instruction at the primary stage for children belonging to linguistic minority groups; inserted by the 7th Amendment, 1956); and Article 351 (Part XVII: "Directive for development of the Hindi language"). They are not in Part IV, so Article 37 does not speak of them (Topic 954).

3. Extra section: Directive Principles in public policy

Directive	Article	Implementation or connection
Land reforms	39(b) and (c)	States abolished zamindari and enacted land-reform laws. Conflicts with property rights led to constitutional amendments supporting these reforms
Village panchayats	40	The 73rd Amendment, passed in 1992 and effective from 24 April 1993, added Part IX on Panchayats (Topic 33)
Education	45 and 21A	The 86th Amendment, 2002 inserted the right to education in Article 21A and recast Article 45 for children below six. School-meal programmes support access to education and nutrition
Free legal aid	39A	The Legal Services Authorities Act, 1987 came into force on 9 November 1995. NALSA, constituted in 1995, provides free legal services to weaker sections and organises Lok Adalats for amicable settlement
Separation of judiciary and executive	50	The constitutional direction is to take steps towards separation in the public services of the State

Other policy connections: bank nationalisation; factory regulation and minimum wages; cottage industries; reservations and other measures supporting Scheduled Castes and Scheduled Tribes; and a partial right to work through employment-guarantee programmes.

Remember: a Directive Principle sets a constitutional goal. An amendment, law or programme is a means of pursuing that goal; the two are not the same thing.

4. Three common exam traps

1. **"The Constitution divides the Directive Principles into socialistic, Gandhian and liberal-intellectual principles."** It does not. Part IV has no such headings; the three groups are a study aid. Different provisions in Articles 43, 47 and 48 serve different themes. Identify the precise provision before assigning a group.

2. **"Non-justiciable means the principles have no legal value."** Article 37 says the opposite in its second half: the principles are fundamental in the governance of the country, and applying them in making laws is a duty of the State. Only the first half is about courts: no court can enforce them. A statement that drops either half is incomplete.
3. **"The Constitution gives no directions to the State outside Part IV."** Part IV contains the DPSPs governed by Article 37, but other constitutional directions also stand outside it, in Parts XVI and XVII. Remember the three numbers, 335, 350A and 351, and remember that Article 351 carries the word "Directive" in its own heading.

DAY 16 | TOPIC 155

Industrial Policy 1991: liberalisation measures and industrial-policy changes

Indian & AP Economy and Planning | Unit C-3

1. Concept in one line

The industrial policy of 24 July 1991 expanded firms' freedom to enter, invest and compete by reducing licensing and public-sector reservation, ending MRTP asset-based pre-entry scrutiny, and opening specified routes for foreign capital and technology.

2. Revision notes

2.1 Background: the 1991 crisis (Topic 114)

A balance of payments crisis threatens the ability to pay for imports when foreign exchange is scarce. Stabilisation addressed the immediate shortage; industrial reforms changed the rules under which firms could invest and produce.

- In 1990-91 India faced a balance of payments crisis. The foreign exchange reserves were not sufficient even for a fortnight of imports, and the prices of essential goods were rising. India received US$ 7 billion as a loan from the World Bank and the International Monetary Fund (IMF), which expected liberalisation and fewer restrictions in return.
- The Budget speech of 24 July 1991 put the reserves at about Rs 2,500 crore, enough for imports for "a mere fortnight". It put the Centre's fiscal deficit at more than 8 per cent of GDP in 1990-91, and the rise in the consumer price index at 13.6 per cent in the year that ended on 31 March 1991.

2.2 The earlier resolutions and statements

Industrial policy allocates responsibility between the State and private enterprise and decides which activities need special controls. The earlier policies show changes in ownership priorities, the scale of enterprise and competition.

Policy	Date	Main features
Industrial Policy Resolution of 1948	6 April 1948	Set out the policy the Government proposed to follow in the industrial field. It established an early framework for the State's industrial role

Policy	Date	Main features
Industrial Policy Resolution of 1956	30 April 1956	Three categories. Schedule A: 17 industries, from arms and ammunition to the generation and distribution of electricity, whose future development would be the exclusive responsibility of the State. Schedule B: a second category of industries which would be progressively State-owned; in them the State would generally take the initiative in establishing new undertakings, and private enterprise would be expected to supplement the efforts of the State. The third category: all the remaining industries, to be developed ordinarily through the initiative and enterprise of the private sector. The State was to take on, step by step, a predominant and direct responsibility for setting up new industrial undertakings
Industrial policy statement of 1973	2 February 1973	Identified high-priority industries in which investment from large industrial houses and foreign companies would be permitted. The 1973 decisions spoke of large industrial houses as those with assets exceeding Rs 20 crore
Industrial policy statement of 1977	23 December 1977	Laid emphasis on decentralisation and on the role of small-scale, tiny and cottage industries. A District Industries Centre was to give services under a single roof. The list of items reserved for the small-scale sector grew from 180 to more than 500
Industrial Policy Statement of 1980	23 July 1980	Focused on the need for promoting competition in the domestic market. It also spoke of economic federalism through a few nucleus plants

- The 1991 statement recalls that in the 1950s and 1960s the public sector was seen as the main instrument for controlling the commanding heights of the economy, and that the 1956 Resolution gave primacy to the role of the State.
- Industrial policy resolutions of 1948 and 1956 in detail come on Day 71 (Topic 705).

2.3 Licensing, location and the public sector in 1991

A licence controls entry into an activity; reservation controls which category of producer may undertake it. Reducing these controls widened the space for private investment while retaining selected safeguards.

The statement was issued by the Ministry of Industry on 24 July 1991.

- **Industrial licensing** was abolished for all industries except those specified. Annex II listed 18 industries that still needed a compulsory licence: coal and lignite; petroleum (other than crude) and its distillation products; distillation and brewing of alcoholic drinks; sugar; animal fats and oils; cigars and cigarettes; asbestos products; plywood and other wood-based products; raw hides, skins and leather; tanned or dressed fur skins; motor cars; paper and newsprint (except bagasse-based units); electronic aerospace and defence equipment; industrial explosives; hazardous chemicals; drugs and pharmaceuticals; entertainment electronics; white goods.
- The short list was kept for reasons of security and strategy, social reasons, hazardous chemicals, the environment and elitist consumption. Items reserved for small-scale units stayed reserved.

- **Licensing after subsequent reforms (2025–26):** four industrial-licensing categories remain in DPIIT's dated list: cigars/cigarettes and manufactured tobacco substitutes; electronic aerospace and defence equipment; industrial explosives; and specified hazardous chemicals. "Electronics" alone is not a separate blanket category. Delicensing does not remove applicable sectoral, safety or state-law permissions.
- **Location:** central approval was no longer needed, except in cities with a population of more than 1 million (10 lakh). There, industries other than non-polluting ones had to be located outside 25 km of the periphery, except in industrial areas designated earlier.
- **Public sector:** areas where security and strategic concerns predominate would continue to be reserved for the public sector. The 1991 reserved list had eight entries, reduced from Schedule A's 17 in 1956. Annex I, reproduced in official Press Note 9 of 2 August 1991, lists: arms and ammunition and allied defence equipment, defence aircraft and warships; atomic energy; coal and lignite; mineral oils; mining of iron ore, manganese ore, chrome ore, gypsum, sulphur, gold and diamond; mining of copper, lead, zinc, tin, molybdenum and wolfram; minerals in the Schedule to the Atomic Energy (Control of Production and Use) Order, 1953; railway transport. The public sector was not barred from other areas.
- The public sector was to focus on essential infrastructure, oil and mineral exploration, strategic manufacturing such as defence equipment, and technology development. Strong enterprises would get more autonomy through memoranda of understanding, and part of the Government's holdings in their equity would be disinvested.
- **Later changes:** reservation was narrowed to specified atomic-energy activities and core railway operations, with private participation in other railway activities. By the Department of Atomic Energy's 29 January 2026 update, the SHANTI Act allows licensed private nuclear facilities while reserving sensitive activities such as enrichment, spent-fuel management and heavy-water production to the Centre. Keep this later position separate from the original eight-entry reservation list of 1991.

2.4 MRTP Act and the Competition Act

The central change was from checking investment because a firm was large to regulating harmful market conduct. Removing a size-based entry restriction did not remove the need for competition law.

- The Monopolies and Restrictive Trade Practices (MRTP) Act, 1969 was intended to curb the concentration of wealth in a few hands and monopolistic practices.
- The 1991 statement removed the threshold limits of assets for MRTP companies and dominant undertakings. The pre-entry scrutiny of their investment decisions was no longer required.
- The emphasis moved to controlling unfair and restrictive practices, rather than making the monopoly houses take the Central Government's prior approval for expansion.
- The Competition Act, 2002 provided the new competition-law framework and the Competition Commission of India (CCI). The MRTP Act was repealed with effect from 1 September 2009; do not date its repeal to 2002.

2.5 Foreign investment, foreign technology and phased manufacturing

Foreign capital supplies investment funds; foreign technology agreements give access to production knowledge under payment conditions. The policy used automatic approvals for specified proposals and negotiation for major investment proposals.

- **Foreign direct investment (FDI):** approval would be given for direct foreign investment up to 51 per cent foreign equity in high-priority industries. Annex III listed 34 such categories, under the title "List of industries for automatic approval of foreign technology agreements and for 51% foreign equity approvals".
- **Investment facilitation:** the 1991 policy provided for a special Empowered Board to negotiate with a number of large international firms. This was a route for negotiating major investment proposals, alongside the policy's automatic-approval provisions. Separately, the Foreign Investment Promotion Board (FIPB) was abolished in 2017-18 following the Budget decision of 1 February 2017.
- **Foreign technology agreements:** in the Annex III industries they got automatic permission up to a lump sum payment of Rs 1 crore, a royalty of 5 per cent on domestic sales and 8 per cent on exports. Total payments were limited to 8 per cent of sales over 10 years from the agreement date or 7 years from commencement of production, under the policy's payment conditions.
- **Phased manufacturing programmes:** the system of phased manufacturing programmes, run case by case by administrative order to raise local content, would not apply to new projects.
- **Later FDI, dated:** the 51 per cent rule belongs to the 1991 high-priority-industry policy. Subsequent DPIIT policy amendments and applicable law govern later caps. Under the 2025 insurance-law amendment, as confirmed in the Government's 23 April 2026 update, the limit for Indian insurance companies rose from 74 to 100 per cent. This is a later sector-specific change, not a 1991 measure (Topic 90; detailed FDI policy: Topic 543).

2.6 Small-scale reservation and its end

Product reservation protected a field of production for small units. Dereservation changed eligibility to manufacture those goods; it did not mean that support for small enterprises or their existence ended.

- Reservation meant that certain items could be made only by small-scale units. The 1977 statement had raised the list from 180 items to more than 500.
- Separate policy measures for small, tiny and village enterprises followed on 6 August 1991. They raised the investment limit for tiny enterprises from Rs 2 lakh to Rs 5 lakh, and shifted the emphasis away from subsidised or cheap credit, except for specified target groups.
- Dereservation progressively opened formerly reserved products to larger producers.
- The then Department of Industrial Policy and Promotion (DIPP, now DPIIT) de-reserved the remaining 20 items by notification S.O. 998(E) dated 10 April 2015. All the items reserved earlier for exclusive manufacture in the small-scale sector have now been de-reserved (Ministry of MSME, Lok Sabha, 28 July 2022). The MSME sector comes on Day 39 (Topic 385).

2.7 The Budget, the rupee and the outcomes

Read the policy changes and the later indicators separately. Growth rates, investment flows and reserve stocks measure different things; a before-and-after comparison alone does not establish that one policy caused every change.

- **The 1991 Budget:** presented by the Finance Minister, Manmohan Singh, on 24 July 1991, the same day as the statement. It accompanied the industrial-policy changes announced that day.
- **The rupee:** the Budget speech refers to the exchange rate adjustments of 1 and 3 July 1991. In 1991 the rupee was devalued as an immediate measure to resolve the balance of payments crisis, and this led to an increase in the inflow of foreign exchange.

Outcome	Before the reforms	After the reforms
Reduced licensing	Licensing over most industry	18 industries in Annex II in 1991; four licensing categories in the 2025–26 list
GDP growth (per cent a year)	5.6 in 1980-91	6.4 in 1992-2001; 7.8 in 2002-07; 8.2 in 2007-12
Industry growth (per cent a year)	7.1 in 1980-91	6.5 in 1992-2001; 9.4 in 2002-07; 7.4 in 2007-12
Foreign investment (FDI and FII)	About US$ 100 million in 1990-91	About US$ 30 billion in 2017-18
FDI inflows	Not given for 1991	US$ 45.14 billion in 2014-15; US$ 84.83 billion in 2021-22, described as a record in the September 2024 government summary; US$ 70.95 billion in 2023-24
Foreign exchange reserves	About US$ 6 billion in 1990-91	About US$ 413 billion in 2018-19 (later figures: Topic 114)

- Services contributed most strongly to the growth described here. Over the periods shown, agriculture grew by 3.6 per cent a year in 1980-91 and by 2.3 per cent in 2002-07.

2.8 Criticisms and the later steps

Evaluate reform outcomes through productivity, sectoral development, employment and the distribution of gains. A rise in total output does not by itself show that every sector or household benefited.

Debate about the reform period: the following criticisms concern the distribution of gains, sectoral performance and employment in the periods discussed. They are arguments to assess, not an undated verdict on every later year.

- **Agriculture:** critics argued that agriculture benefited less, citing slower growth, falling public investment in farm infrastructure and higher costs for small and marginal farmers after cuts in fertiliser subsidies.

- **Industry:** critics linked weaker demand for domestic goods to cheaper competing imports and inadequate investment in infrastructure.
- **Employment:** a major criticism was that output growth did not create sufficient employment opportunities. The key question is whether rising production also creates enough productive jobs.
- **Social spending:** critics argued that limits on the growth of public expenditure constrained spending, especially in the social sectors.

Later policy responses and initiatives:

- **National Manufacturing Policy:** announced on 4 November 2011. Its goals were to raise the share of manufacturing in GDP to 25 per cent and to create 100 million additional jobs by 2022. These were policy targets, not statements that the targets had been achieved.
- **Make in India:** launched by Prime Minister Narendra Modi on 25 September 2014 (Topic 293).
- **Production Linked Incentive (PLI) schemes:** on 11 November 2020 the Union Cabinet approved PLI schemes for 10 key sectors, with an outlay of Rs 1,45,980 crore over five years. These came on top of the PLI schemes already notified for mobile and electronic components, pharmaceutical ingredients and medical devices. By 2023 the schemes covered 14 key sectors, with an outlay of Rs 1.97 lakh crore.
- Disinvestment in detail (Topic 784), reforms after 1991 (Topic 624) and privatisation and globalisation (Topic 993) come on other days.

3. Extra section: a chronology of industrial policy, 1948 to 2020

Date	Event
6 April 1948	Industrial Policy Resolution
30 April 1956	Industrial Policy Resolution with Schedules A and B
2 February 1973	Government decisions on industrial policy (high-priority industries)
23 December 1977	Industrial policy statement (small-scale, tiny and cottage industries; District Industries Centres)
23 July 1980	Industrial Policy Statement (competition; nucleus plants)
1 and 3 July 1991	Exchange rate adjustments of the rupee
24 July 1991	Statement on Industrial Policy, and the Budget speech for 1991-92
6 August 1991	Policy measures for small, tiny and village enterprises
2002	Competition Act; MRTP repeal took effect on 1 September 2009
4 November 2011	National Manufacturing Policy announced

Date	Event
25 September 2014	Make in India launched
10 April 2015	The last 20 items reserved for small-scale units de-reserved
1 February 2017	Budget speech decides to abolish the FIPB in 2017-18
11 November 2020	Cabinet approves PLI schemes for 10 key sectors

What the chronology shows:

- The devaluation came first, in the first week of July 1991. The industrial policy and the Budget followed three weeks later, on the same day.
- Controls were loosened in stages before 1991 too: the 1973 statement opened some industries to large houses and foreign companies, and the 1980 statement spoke of competition. The 1991 statement made freedom from industrial licensing the general rule, with specified exceptions.
- Small-scale reservation, which the 1977 statement had widened, outlived the 1991 reforms by almost 24 years.

4. Three common exam traps

1. **"The 1956 Resolution had three schedules, A, B and C."** It printed two schedules, A and B. The third category was not a schedule: it was simply all the remaining industries, left ordinarily to private initiative. Three categories do not mean three schedules.
2. **"The 1991 policy abolished industrial licensing and public sector reservation altogether."** Both were cut down, not ended. A short list of industries still needed a compulsory licence, and some areas stayed reserved for the public sector. The four-category licensing list for 2025–26 and later nuclear-sector changes belong to later stages of reform, separate from the original 1991 lists.
3. **"The 1991 policy capped all foreign investment at 51 per cent."** Automatic approval up to 51 per cent foreign equity applied to the high-priority industries of Annex III; it was not a ceiling for all FDI. Major investments by large international firms could also be negotiated through a special Empowered Board. These are different routes: automatic approval for the specified industries, and negotiation for major projects. Later sector-specific limits are separate from the original 1991 rule, including the later 100 per cent limit for insurance companies.

DAY 16 | TOPIC 156

Temperature and salinity of ocean waters

Geography | Unit D-1

1. Concept in one line

Heat gain and loss change ocean temperature; freshwater gain and loss change salinity; temperature, salinity and pressure together determine density, helping explain the ocean's surface patterns, vertical layers and circulation.

2. Revision notes

2.1 Ocean water: heat, salt and density

- Temperature tells us how hot or cold seawater is. Salinity is the concentration of its dissolved salts. These are different properties: warming a covered seawater sample does not add salt; evaporating some of its water leaves the remaining sample saltier.
- Follow two balances: the **heat balance** explains warming and cooling; the **freshwater balance** helps explain concentration and dilution of salt. Currents and mixing redistribute both heat and salt.
- Density is mass per unit volume. Temperature and salinity help determine it, and pressure also matters. Differences in density affect layering, mixing and circulation.
- Study these properties in two directions: **across the surface**, comparing latitudes, coasts and basins; and **down the water column**, comparing surface, transition and deeper water.
- Topic 116 covered ocean areas and Topic 144 the relief of the ocean floor. Here the focus is on the water occupying those basins.

2.2 Why does the ocean warm slowly?

- Sunlight supplies most heat to the upper ocean. Some incoming energy is reflected; absorbed energy warms the water.
- **High heat capacity:** water needs much energy for a small temperature rise.
- **Mixing:** wind and waves distribute heat through a layer instead of leaving it in a very thin surface skin.
- **Evaporation:** escaping water carries heat away from the surface.
- Temperature rises when heat gain exceeds heat loss and falls when loss exceeds gain. The ocean exchanges heat with the atmosphere through radiation, evaporation and direct contact; currents transfer heat between regions.
- **Application:** ocean water generally heats and cools more slowly than land. Its gradual storage and release of heat often moderate coastal climates.

2.3 Why surface temperatures differ

Influence	Mechanism and resulting pattern
Latitude	Low latitudes receive more concentrated sunlight over the year. Poleward, the rays spread over a larger area, so the surface is generally cooler
Currents	Warm currents transfer heat towards cooler regions; cold currents bring cooler water into warmer regions. The Gulf Stream is warm and the Labrador Current is cold
Winds and mixing	Winds move surface water and mix it with water below. Upwelling can cool a coast even at a low latitude
Land and basin shape	Land heats and cools faster than water. Nearby land, seasonal winds and restricted exchange can alter a marginal sea's temperature
Season and clouds	Seasonal heating, cloud cover and changing circulation modify the temperature at any given latitude

- The broad equator-to-pole pattern is not a fixed mathematical decline for each degree of latitude. A place's temperature reflects several interacting influences.
- A restricted sea can respond differently from the adjacent open ocean because both its heat exchange and its water exchange differ. Latitude alone cannot determine its temperature.
- Insolation is covered in Topic 25; ocean currents follow in Topic 165, Day 17.

2.4 How winds bring cold water upward

1. Wind drives transport of surface water.
2. Where this transport moves water away from a coast, water from below rises to replace it. This is **upwelling**.
3. The replacement water has been below the strongly sun-heated surface. It is usually colder and often nutrient-rich, so upwelling can cool coastal surface water.
4. Nutrients reaching the sunlit layer support phytoplankton growth and can sustain productive fishing grounds.

- **Downwelling** is the reverse movement: surface-water transport piles water against a coast and pushes water downward.
- Wind direction and water-transport direction are not always the same. Earth's rotation helps determine transport; winds blowing along a coast can cause coastal upwelling. First identify where the surface water moves, then predict the vertical movement.

2.5 Temperature with depth: a common three-zone profile

Zone	Process and temperature pattern
Mixed layer	Sunlight warms the upper ocean; wind and waves mix the water. Temperature changes relatively little within this layer
Thermocline	A transition zone below the warm mixed layer where temperature falls rapidly with increasing depth
Deep water	Beneath the main thermocline the water is cold, and temperature usually changes much more slowly with depth

- Sunlight is absorbed mainly in the upper ocean. A warm, less-dense surface layer resists mixing with colder, denser water below, helping maintain the contrast.
- A **thermocline** is a layer of rapid temperature change with depth; the common warm-surface profile has a rapid decrease. It is a transition, not the deep layer itself.
- Read the rate of change: a large temperature change over a short vertical distance marks a strong thermocline.
- These zones describe a common low-latitude pattern. Layer depths and thicknesses vary with place, season and mixing; they are not three fixed-depth compartments for every ocean.

2.6 Layers change with latitude and season

- **Tropics:** strong year-round surface heating commonly maintains a warm upper layer above cold deep water, with a persistent thermocline between them.
- **Temperate seas:** summer heating creates a shallow warm layer and a seasonal thermocline. Winter cooling and stronger mixing can weaken the seasonal contrast and deepen the mixed layer.
- **Polar seas:** a warm-surface thermocline may be weak or absent. This does not make the whole water column uniform.
- **Arctic example:** relatively fresh, near-freezing surface water can overlie saltier water and a warmer Atlantic-origin layer. A strong salinity gradient can restrict vertical mixing even where the temperature structure differs from the tropical pattern.
- Temperature layering and salinity layering describe different properties. A weak thermocline does not prove the absence of stratification. For every profile, ask: **which region, which season and which property?**

2.7 Salinity: salt in a seawater sample

- Salinity is the concentration of dissolved salts. In the mass-based parts-per-thousand convention, **35‰** means about 35 g of salts in 1,000 g of seawater: approximately 35 g of salts plus 965 g of water. This is about **3.5% by mass**.

- The denominator is the mass of the seawater solution, not 1,000 g of pure water to which salt is then added.
- Average ocean salinity is about 35‰. Much normal open-ocean water lies around 33–37‰; coastal waters and restricted seas can differ greatly.
- **Brackish water** is water of intermediate salinity between freshwater and seawater. Numerical class boundaries depend on the classification being used.
- **Where the ions come from:** weathering releases ions from rocks on land, and rivers carry them to the sea. Seafloor hydrothermal fluids, underwater volcanic activity and salt domes also supply dissolved substances.
- **What is dissolved:** sodium and chloride are the dominant ions, together about 85% of dissolved ions. Magnesium and sulfate account for roughly another 10%; the other ions occur in smaller proportions. Seawater therefore contains many dissolved salts, not only sodium chloride.

2.8 What makes seawater saltier or fresher?

Process	What happens to water and salt	Effect on surface salinity
Evaporation	Water escapes as vapour; most dissolved salt remains	Rises because salt becomes more concentrated
Rainfall	Freshwater is added to the existing seawater	Falls through dilution
River inflow	Freshwater is supplied, especially near coasts and river mouths	Falls through dilution
Sea-ice formation	Growing ice excludes much of the salt into the surrounding liquid water	Remaining seawater becomes saltier
Ice melting	Meltwater adds freshwater	Falls through dilution
Winds, currents and mixing	Water is moved between places and layers	Depends on the salinity of the water transported and mixed

- **Memory rule:** remove freshwater and concentrate the salts; add freshwater and dilute them.
- Several processes act together. Observed salinity reflects their combined balance and water movement, rather than temperature alone.

2.9 Why the saltiest belt is not the equator

- **Equatorial belt:** strong heating encourages evaporation, but frequent heavy rain adds freshwater. This dilution generally keeps surface salinity lower than in the dry subtropics.
- **Subtropical belts:** around 20°–30° north and south, descending dry air often brings little rain. Strong evaporation and limited freshwater supply favour high surface salinity.

- **Higher latitudes:** relatively low evaporation, together with freshwater additions from precipitation and seasonal ice melt, can freshen the surface. Sea-ice formation locally increases the salinity of the liquid water left behind.
- Rivers, currents, seasonal ice changes and enclosed basins modify these broad belts. Ocean basin shape and extent influence the distribution of climatic zones and water exchange, but do not replace the need to examine the freshwater balance.
- **Application:** "hottest water must be saltiest" is false. Compare evaporation with rainfall, runoff and ice processes before predicting salinity.

2.10 Arabian Sea and Bay of Bengal: explain the contrast

Arabian Sea	Bay of Bengal
Evaporation removes much water; freshwater supply is smaller relative to the loss	Heavy rainfall and major rivers supply large quantities of freshwater
Salt becomes more concentrated, so the surface is generally saltier	Dilution produces a relatively fresh upper layer

- At the same temperature and pressure, fresher water is less dense than saltier water. The Bay's fresh surface layer can help maintain stable stratification and restrict mixing with water below.
- Saltier water can occur beneath this fresh layer. A surface comparison does not describe every depth; monsoons, river discharge and circulation change the pattern through the year.
- **Dated field-study example:** Gordon and colleagues' 2016 study estimated annual river runoff into the Bay at about 2,950 km^3, more than half the runoff entering the tropical Indian Ocean. It described a surface salinity contrast of about 5 units along 9° N, and salinity generally below 28 in the north-eastern Bay in November–December 2013. These are a particular study's spatial and seasonal observations, not fixed values for both seas in every year. The study also describes salty Arabian Sea water spreading beneath the Bay's fresher surface layer.

2.11 Why nearby seas can have different salinity

Water body	Water-and-salt budget and resulting pattern
Red Sea	High evaporation and limited freshwater input make it saltier than many open-ocean waters; salinity can reach about 41‰ in parts of the sea
Mediterranean Sea	Strong evaporation and limited freshwater supply favour relatively high salinity
Baltic Sea	Large freshwater inputs from its drainage basin help maintain low salinity
Black Sea	Major river inputs help keep the surface relatively low in salinity; the surface need not represent deeper water

Water body	Water-and-salt budget and resulting pattern
North Sea	Inflow of saline Atlantic water, associated with the North Atlantic Drift, helps explain why local salinity cannot be predicted from latitude alone

- Restricted exchange can amplify the local freshwater balance. A narrow connection does not automatically make a sea salty: a wet drainage basin may instead freshen it.
- The Red Sea is **semi-enclosed**, not landlocked. It exchanges water with the Gulf of Aden through Bab el-Mandeb.
- **Application:** two semi-enclosed seas can have opposite salinity patterns if one loses freshwater overall and the other receives it. In estuaries, the balance of river water and marine inflow also creates strong spatial and seasonal variation.

2.12 Halocline: salinity changes sharply with depth

- A **halocline** is a layer where salinity changes rapidly with depth. The numerical value can increase or decrease as one descends.
- **Fresh surface case:** rain, rivers or ice melt freshen the top. Salinity increases sharply beneath this cap.
- **Salty surface case:** strong evaporation can make surface water saltier than the water below. Salinity may decrease sharply through the transition.
- Surface processes act most directly near the top. Deeper salinity is less directly affected by daily surface changes, but circulation and mixing continue to redistribute water masses; deep salinity is not immutable.
- Read the axes first: depth increases downward and salinity increases to the right. The two cases are possible profiles, not universal patterns.

Term	Property changing rapidly with depth
Thermocline	Temperature
Halocline	Salinity
Pycnocline	Density

2.13 Density connects heat, salt and circulation

- **Compare one factor at a time:** at the same salinity and pressure, cooling ordinary seawater usually increases its density; warming reduces it. At the same temperature and pressure, increasing dissolved salt raises density and adding freshwater lowers it. Pressure also affects density.
- **Stable layering:** lighter water lies above denser water, resisting overturning. Winds and tides can still mix the water.

- **Sinking:** surface water can sink beneath surrounding water after cooling and salinity changes make it sufficiently dense. This contributes to deep-water formation in some high-latitude regions; every patch of salty surface water does not automatically sink to the ocean floor.
- **Thermohaline circulation:** “thermo” refers to temperature and “haline” to salinity. Their effects on density contribute to deep-ocean circulation; winds and mixing also help drive the wider circulation (Topic 165).
- A salinity profile alone is not a density profile. Warm salty water can remain above colder, fresher water if their combined temperature–salinity–pressure conditions give a stable density arrangement.

3. Extra section: apply the concepts

Situation	Predict, then explain
Heavy rain falls on a warm ocean surface	Surface salinity tends to fall: freshwater dilutes seawater even though the surface remains warm
Wind-driven transport moves coastal surface water offshore	Water from below can rise to replace it; upwelling may cool the surface and supply nutrients
A sample loses water by evaporation, with no salt removed	Salt concentration rises although the amount of salt has not increased
A profile shows little temperature change but a sharp salinity increase with depth	It has a halocline; the temperature profile alone cannot reveal the full density structure
A salty surface layer overlies fresher water	This is not automatically impossible. Temperature and pressure must also be considered before judging density and stability

One reasoning route: identify the process → track heat or freshwater → predict the temperature or salinity response → consider density and mixing.

Useful quantities with their meaning: about 35‰ is about 35 g of salt per 1,000 g of seawater, or 3.5% by mass; 33–37‰ is a useful open-ocean range, not a bound for every coast or sea. Layer depths require a specified region and season, and local measurements require a place and date.

Interpreting lake measurements: salinity also varies among saline lakes and over time within a lake. Great Salt Lake values differ between arms and with water level. Primary studies of Lake Van published in 2009 and 2010 reported about 22 g/kg and about 21 g/kg respectively; these are study-based values, not a permanent ranking of the world’s saltiest lakes. A concentration in g/L measures mass per volume, whereas g/kg measures mass per mass. Converting between them requires the solution’s density.

4. Three common exam traps

1. **“The hottest water must have the highest salinity.”** Heat balance and freshwater balance are different. Heavy equatorial rain can dilute warm water, while dry subtropical conditions favour higher surface salinity.
2. **“Every ocean has the same fixed-depth layers, and polar seas have no stratification.”** Temperature profiles vary with latitude, season and mixing. A weak or absent warm-surface thermocline does not exclude a halocline, a temperature inversion or distinct water masses.
3. **“Halocline means salinity must increase with depth, so saltier water always lies below.”** A halocline can involve an increase or a decrease. Thermocline, halocline and pycnocline describe different variables; density and stability require temperature, salinity and pressure together.

DAY 16 | TOPIC 157

Environment (Protection) Act 1986: powers, rules and notifications

Science & Technology | Item 22

1. Concept in one line

The Environment (Protection) Act, 1986 is an umbrella law that lets the Central Government take measures, set up authorities, give directions and make rules to protect and improve the environment; the examination asks for its background, its key sections, its 2023 penalty changes and the main rules and notifications made under it.

2. Revision notes

2.1 Background and constitutional basis

- **Stockholm, 1972:** the Act's preamble records that decisions were taken at the United Nations Conference on the Human Environment, held at Stockholm in June 1972, in which India took part. It says the Act is needed to implement those decisions on protecting and improving the environment and preventing hazards to human beings, other living creatures, plants and property.
- **Bhopal, 3 December 1984:** about 45 tons of methyl isocyanate escaped from the Union Carbide insecticide plant at Bhopal, Madhya Pradesh. The Act is widely seen as a response to the disaster.
- **Article 253:** the Act was passed under Article 253, which empowers Parliament to implement treaties, agreements and conventions, and decisions made at international conferences, associations or other bodies. The Stockholm decisions are the relevant link here.
- **Article 48A** (a Directive Principle): it directs the State to protect the environment and to safeguard the forests and wild life of the country.
- **Article 51A(g)** (a Fundamental Duty): every citizen is to protect and improve the natural environment, including forests, lakes, rivers and wild life, and to have compassion for living creatures. The Fundamental Duties were added by the 42nd Amendment in 1976.
- **Umbrella law:** the Act gives a framework under which the Central Government coordinates the authorities set up under other laws, such as the Water and Air Acts (taught on other days), and regulates industrial activity and coastal and other sensitive areas.

2.2 The Act at a glance

Point	Detail
Number	Act No. 29 of 1986

Point	Detail
Long title	An Act to provide for the protection and improvement of environment and for matters connected therewith
Enacted	23 May 1986
Came into force	19 November 1986, by notification G.S.R. 1198(E) dated 12 November 1986
Extent	The whole of India
Ministry	Ministry of Environment, Forest and Climate Change (MoEF&CC)
Major amendment	Jan Vishwas (Amendment of Provisions) Act, 2023 (Act No. 18 of 2023), assent 11 August 2023

Definition (section 2):

- **Environment** includes water, air and land, and the inter-relationship among them and human beings, other living creatures, plants, micro-organisms and property.
- **Handling (section 2(d))** is broader than use: it includes manufacture, processing, treatment, packaging, storage, transportation, use, collection, destruction, conversion, offering for sale and transfer. Read section 8 in this full sense.

2.3 The Act section by section

How the framework works: sections 3, 5 and 6 provide powers and regulatory tools; sections 7 to 11 set duties and support enforcement; the revised penalty and appeal provisions determine the consequences of contravention. Read the rules and notifications in 2.5 as applications of this framework.

Section	What it provides
3(1)	The Central Government may take all such measures as it deems necessary or expedient to protect and improve the quality of the environment and to prevent, control and abate environmental pollution
3(2)	The measures may include, among others: coordinating the States; a nationwide programme against pollution; standards for environmental quality and for emission or discharge; restricting the areas in which industries, operations or processes may or may not be carried on; safeguards against accidents and for handling hazardous substances; inspection of premises; setting up or recognising laboratories; research; manuals and codes
3(3)	The Central Government may, by order in the Official Gazette, constitute an authority or authorities to exercise its powers and functions, including the power to give directions under section 5, under its supervision and control. Example: the National Ganga River Basin Authority (NGRBA), set up on 20 February 2009 under section 3

Section	What it provides
5	The Central Government may issue written directions to any person, officer or authority, notwithstanding anything in any other law, and they are bound to comply. The power includes the closure, prohibition or regulation of any industry, operation or process, and the stoppage or regulation of the supply of electricity or water or any other service
6	The Central Government may make rules on the matters in section 3: quality standards for air, water or soil; maximum allowable limits of pollutants; procedures and safeguards for handling hazardous substances; prohibitions on their handling, and on the location of industries, in different areas; procedures to prevent accidents
7	No person carrying on an industry, operation or process shall discharge or emit any environmental pollutant in excess of the prescribed standards
8	No person shall handle a hazardous substance except in accordance with the prescribed procedure and safeguards
9	Where an accident or other unforeseen event causes, or may cause, a discharge above the standards, the person responsible must prevent or mitigate the pollution, inform the authorities and help them
10	Power of entry and inspection by a person empowered by the Central Government; from 1 April 2024, failure to assist without reasonable cause, or wilful delay or obstruction, attracts a penalty under section 14B
11	The Central Government or an officer it empowers may take samples of air, water, soil or other substance from any factory, premises or other place, in the prescribed manner
14A to 16B	Penalties, the adjudicating officer, appeals and the Environmental Protection Fund, as rewritten in 2023 (see 2.4)
19	No court shall take cognizance of an offence under the Act except on a complaint by (a) the Central Government or an authority or officer it authorises, or (b) any person who has given at least sixty days' notice, in the prescribed manner, of the alleged offence and of the intention to complain, to the Central Government or the authorised authority or officer. From 1 April 2024 an adjudicating officer, or an officer he authorises, may also complain
24	The Act and its rules and orders have effect notwithstanding anything inconsistent in any other law (the section was substituted in 2023)

2.4 Penalties before and after the Jan Vishwas Act, 2023

The 2023 Act replaced imprisonment with monetary penalties for most contraventions, with these changes commencing on 1 April 2024. The enactment year and commencement date are different. The penalty is decided by an adjudicating officer, not by a criminal court.

Point	Before 1 April 2024 (old section 15)	From 1 April 2024 (2023 amendment in operation)
General contravention of the Act, rules, orders or directions (new section 15 applies where no other penalty is provided)	Imprisonment up to five years, or fine up to one lakh rupees, or both; up to five thousand rupees a day if it continued after conviction; imprisonment up to seven years if it continued beyond one year after conviction	Section 15: penalty of not less than ten thousand rupees, which may extend to fifteen lakh rupees; ten thousand rupees a day while the contravention continues
Excess discharge (section 7) or unsafe handling of hazardous substances (section 8)	Covered by section 15	Section 14A: not less than one lakh rupees, up to fifteen lakh rupees; fifty thousand rupees a day while it continues
Contravention of sections 9, 10 or 11	Covered by section 15	Section 14B: not less than ten thousand rupees, up to five lakh rupees; ten thousand rupees a day while it continues
Who decides	A criminal court	Adjudicating officer appointed by the Central Government (section 15C): not below the rank of Joint Secretary to the Government of India, or a Secretary to a State Government
Appeal	Ordinary criminal appeal	To the National Green Tribunal within sixty days of receiving the order (section 15D); the appellant must first deposit ten per cent of the penalty

- **Companies (section 15A):** not less than one lakh rupees and up to fifteen lakh rupees, and one lakh rupees a day while the contravention continues. **Government departments (section 15B):** the Head of the Department is liable to a penalty equal to one month's basic salary, unless he proves that it occurred without his knowledge or instructions, or that he exercised all due diligence. An officer other than the Head whose neglect caused the contravention is also liable to one month’s basic salary, subject to the due-diligence defence.
- **Imprisonment has not gone completely:** under section 15F, a person who does not pay the penalty within ninety days of its imposition may be punished with imprisonment up to three years, or a fine up to twice the penalty, or both.
- **Environmental Protection Fund (section 16):** the Central Government may set it up by notification. The penalties are credited to it (section 15E), and seventy-five per cent of the penalty amounts credited to the Fund are allocated by the Centre to State Governments or Union territory administrations. It pays for education, awareness and research on environmental protection, and for implementing the Act.

- The 2023 Act comes into force for each enactment on the date the Central Government notifies. For this Act, the amended penalty provisions took effect from 1 April 2024.

2.5 Rules and notifications made under the Act

Instrument	Date	Point to remember
Rules on hazardous micro-organisms, genetically engineered organisms or cells (the Rules of 1989, Topic 146)	5 December 1989	The Genetic Engineering Appraisal Committee (GEAC) in the MoEF&CC works under them (named Approval Committee until 2010)
Hazardous waste rules	First in 1989 (Hazardous Waste Management Rules); replaced in 2008; now 2016	The 2016 rules are the Hazardous and Other Wastes (Management and Transboundary Movement) Rules. Each set superseded the one before
Coastal Regulation Zone (CRZ) Notification	First in February 1991; then 2011; now 2019	The 1991 notification was issued under section 3. The 2019 notification cut the No Development Zone in densely populated rural areas (CRZ-IIIA, above 2,161 persons per sq km on the 2011 Census base) from 200 m to 50 m from the High Tide Line; it is 200 m in CRZ-IIIB. The 50 m relaxation is subject to approval of the revised Coastal Zone Management Plan (CZMP); pending approval the 200 m limit continues
Environment Impact Assessment (EIA) Notification	14 September 2006	Replaced the EIA Notification of 1994. Prior environmental clearance is needed for new projects in its Schedule, and for expansion or modernisation where the notification's conditions and thresholds apply. Category A: cleared by the Central Ministry. Category B: cleared by the State Environment Impact Assessment Authority (SEIAA); where a State has none, by the Central Ministry
Solid Waste Management Rules	2016 (PIB release of 5 April 2016); superseded by the Solid Waste Management Rules, 2026	The 2016 Rules revised the municipal solid waste rules of 2000 after 16 years and were made applicable beyond municipal areas. The Solid Waste Management Rules, 2026 (PIB release of 28 January 2026) supersede them and came into full effect on 1 April 2026. Construction and demolition waste has separate rules, now the Environment (Construction and Demolition) Waste Management Rules, 2025

The maximum four stages of environmental clearance under the EIA Notification, 2006:

Not every stage applies to every project; the notification and amendments contain exemptions. Screening is for Category B projects, dividing them into B1 (EIA report required) and B2 (EIA report not required). Category A is appraised at the Centre; Category B normally at State level, subject to the General Condition and the absence of a duly constituted SEIAA or SEAC.

1. **Screening (Category B only):** deciding whether the project requires further environmental studies and an EIA report (B1), or falls in B2.
2. **Scoping:** fixing the detailed Terms of Reference that the EIA report must address.
3. **Public consultation:** taking the views of the people affected.
4. **Appraisal:** examining the project on the basis of the final EIA report and the outcome of the public consultation.

The Ganga authorities: the NGRBA of 2009 was dissolved with effect from 7 October 2016 by the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016. Under that Order the National Ganga Council was set up in October 2016, with the National Mission for Clean Ganga (NMCG) as its implementation wing.

2.6 The National Green Tribunal and the Act

- The National Green Tribunal (NGT) was set up on 18 October 2010 under the National Green Tribunal Act, 2010. The Environment (Protection) Act, 1986 is one of the seven Acts in Schedule I of the NGT Act, along with the Water Act of 1974, the Water Cess Act of 1977, the Forest (Conservation) Act of 1980, the Air Act of 1981, the Public Liability Insurance Act of 1991 and the Biological Diversity Act of 2002. A Schedule I entry and the current legal status of the listed Act must be distinguished. The Water Cess Act, 1977 was repealed in 2017 (subject to statutory savings); the Forest (Conservation) Act, 1980 is now titled the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.
- From 1 April 2024 the NGT is also the appellate body for penalties imposed by the adjudicating officer under this Act.

3. Extra section: chronology of the Act, its rules and notifications

Date	Event
June 1972	United Nations Conference on the Human Environment, Stockholm
1976	The 42nd Amendment adds the Fundamental Duties, including Article 51A(g)
3 December 1984	Bhopal gas disaster
23 May 1986	The Environment (Protection) Act enacted, as Act No. 29 of 1986
12 November 1986	Notification G.S.R. 1198(E) fixes the date of commencement

Date	Event
19 November 1986	The Act comes into force
1989	Hazardous Waste Management Rules
5 December 1989	Rules on hazardous micro-organisms and genetically engineered organisms notified
February 1991	First Coastal Regulation Zone Notification, under section 3
1994	First EIA Notification
2000	Municipal solid waste rules
14 September 2006	EIA Notification, 2006 replaces that of 1994
2008	Hazardous waste rules replaced
20 February 2009	NGRBA constituted under section 3
18 October 2010	National Green Tribunal set up
2011	CRZ Notification, 2011
2016	Solid Waste Management Rules (PIB, 5 April 2016) and Hazardous and Other Wastes Rules
October 2016	National Ganga Council set up under the Authorities Order, 2016
2019	CRZ Notification, 2019 replaces that of 2011
11 August 2023	Jan Vishwas (Amendment of Provisions) Act, 2023 receives assent
1 April 2024	The amended penalty provisions of this Act take effect
28 January 2026	PIB announces the Solid Waste Management Rules, 2026, which supersede the 2016 Rules and come into full effect on 1 April 2026

4. Three common exam traps

1. **"The Act was made under Article 48A or Article 51A(g)."** Those two lay down the State's directive and the citizen's duty. The legislative power used was Article 253, which lets Parliament make laws giving effect to international agreements; the Act's preamble ties it to the decisions of the Stockholm Conference.
2. **"Enactment and commencement fell on the same day."** The Act was enacted on 23 May 1986 but came into force only on 19 November 1986, under a notification of 12 November 1986. It is Act No. 29 of 1986.

3. **"Under the revised regime nobody can be jailed under the Act, and anyone may file a case in court at once."** Most contraventions now carry a monetary penalty, but a person who does not pay it within ninety days may be imprisoned for up to three years. A citizen may complain to a court only after giving at least sixty days' notice to the Central Government or the authorised officer.

DAY 16 | TOPIC 158

Ages: ratio-based problems

General Mental Ability: Reasoning & Psychological | Item 5

1. Concept in one line

Problems on ages give the ratio, sum, difference or average of ages at one or more time points and ask for an age or a number of years. They rest on one fact: every person grows older by the same number of years, so the difference between two ages never changes, while the ratio of two unequal ages does.

2. Revision notes

2.1 What we need from Topic 59

- A ratio does not give the actual quantities. If two ages are in the ratio a : b, they are ak and bk for some positive number k.
- When the two terms are unequal, adding the same non-zero number to both changes the ratio: 2 : 3 is not equal to 3 : 4. This is why the ratio of two ages changes with time.

2.2 The basic facts

- Fix "now" as the reference point. "n years ago" means present age - n; "n years hence" means present age + n. Do this for every person.
- **The difference of two ages never changes.** Anu is 12 and her father is 40 now. The difference is 28. In 8 years they will be 20 and 48; the difference is still 28. Her father was 28 when Anu was born: at the birth of the younger person, the elder's age equals the difference.
- **The ratio of two unequal ages changes.** Father to Anu: 8 years ago 32 : 4 = 8 : 1; now 40 : 12 = 10 : 3; in 8 years 48 : 20 = 12 : 5. The ratio of the elder's age to the younger's keeps falling towards 1 (8, then 3.33..., then 2.4), but it never reaches 1.
- **A sum grows by n for each person.** In n years the sum of two ages grows by 2n, and the total age of a group of p persons grows by p × n. The average age of a group whose members do not change grows by n.
- Ages in these problems usually come out in whole years: re-check any fractional answer; a negative age always shows a slip.

Time point	Elder	Younger	Difference	Sum	Ratio
8 years ago	32	4	28	36	8 : 1
Now	40	12	28	52	10 : 3
8 years hence	48	20	28	68	12 : 5

2.3 The ratio-parts method

- Write the present ages as ak and bk. After n years they are (ak + n) and (bk + n); n years ago they were (ak - n) and (bk - n). Set the new pair equal to the given ratio c : d, cross-multiply and solve for k. This is a linear equation in one unknown.
- **Example.** The present ages of P and Q are in the ratio 7 : 5. After 8 years the ratio will be 9 : 7. Ages now: 7k and 5k. Then (7k + 8) : (5k + 8) = 9 : 7, so 7(7k + 8) = 9(5k + 8), that is, 49k + 56 = 45k + 72, so 4k = 16 and k = 4. P is 28 and Q is 20. Check: after 8 years, 36 : 28 = 9 : 7.

2.4 The difference-of-ages method

- The difference of the ages is the same at both time points, so it can be measured in parts. If the two ratios have the same difference of parts, one part means the same number of years in both, and the change in one person's parts is the number of years that passed.
- **Same difference.** In 2.3, 7 : 5 and 9 : 7 both have a difference of 2 parts. P goes from 7 parts to 9 parts, that is, 2 parts = 8 years, so 1 part = 4 years. P = 7 × 4 = 28 and Q = 5 × 4 = 20.
- **Different differences: make them equal first.** The present ages of R and S are in the ratio 3 : 2, and 8 years ago they were in the ratio 7 : 4. The differences of parts are 1 and 3. Multiply 3 : 2 by 3 to get 9 : 6 (difference 3). Now R goes from 7 parts (8 years ago) to 9 parts (now): 2 parts = 8 years, so 1 part = 4 years. R = 9 × 4 = 36 and S = 6 × 4 = 24. Check: 8 years ago 28 : 16 = 7 : 4.

2.5 The sum-of-ages and difference-of-ages data

- **Sum given.** If the ratio is a : b and the sum at the same time point is S, then k = S ÷ (a + b). If the sum is given at another time point, first move it to the time of the ratio (2n for two persons).
- Example: the ages of two sisters are in the ratio 4 : 3 now, and 7 years hence the sum of their ages will be 63. The present sum is 63 - 2 × 7 = 49. Then 7 parts = 49, so k = 7: the ages are 28 and 21. Check: 35 + 28 = 63.
- **Difference given.** If the ratio is a : b and the elder is D years older, then (a - b) parts = D years. Example: ratio 7 : 3 and a difference of 20 years. 4 parts = 20, so k = 5: the ages are 35 and 15.

2.6 The average-of-ages method

- Total age = average × number of members.
- After n years, add (number of members × n) to the old total.
- **A member joins.** Three years ago the average age of a family of 5 was 17 years. A baby has been born since then, and today the average age of the 6 members is 17 years. Total 3 years ago = 5 × 17 = 85. The same 5 persons today = 85 + 5 × 3 = 100. Total of the 6 today = 6 × 17 = 102. The baby is 102 - 100 = 2 years old. The average is the same as before, yet the baby is not 17: the old members have grown older.
- **A member leaves.** The average age of 7 members of a group is 26 years. One member leaves today, and the average of the other 6 is 24 years. The member who left is 7 × 26 - 6 × 24 = 182 - 144 = 38 years old.
- Day 62 (Topic 618) takes up averages and sums of ages in more detail.

2.7 The "n years ago, m years hence" method

- When one ratio is given for n years ago and another for m years hence, the two time points are n + m years apart. Write the ages n years ago as ak and bk, add n + m to both, and solve. Then add n to get the present ages.
- **Worked example: two ratios ten years apart.** Five years hence, Jacob's age will be three times his son's age; five years ago, it was seven times his son's age. So 5 years ago the ratio was 7 : 1, and 5 years hence it will be 3 : 1; the gap is 10 years. Differences of parts: 6 and 2. Multiply 3 : 1 by 3 to get 9 : 3 (difference 6). The son goes from 1 part to 3 parts: 2 parts = 10 years, so 1 part = 5 years. Five years ago the son was 5 and Jacob 35; now they are 10 and 40. Check: 5 years hence, 45 = 3 × 15. The same conditions can also be written as a pair of linear equations in two unknowns; that method comes in Topic 388 (Day 39).

2.8 Checking the options by substitution

- If the ratio a : b is in its simplest form and the ages are whole numbers, each age at the time of that ratio is a multiple of its part: k = age ÷ part is a whole number.
- Then take each remaining option as the age, find the other age from the first condition, and test the second condition.
- Example: in the problem of 2.3, let the options for P's age be 21, 24, 28 and 35. 24 is not a multiple of 7, so it goes. For 21, Q is 15, and after 8 years 29 : 23 is not 9 : 7. For 35, Q is 25, and 43 : 33 is not 9 : 7. For 28, Q is 20, and 36 : 28 = 9 : 7. The answer is 28.

2.9 Three-person problems

- Three ages in the ratio a : b : c are ak, bk and ck. In n years the sum of three ages grows by 3n.
- If the ratios come in two pieces, join them first by making the common person's number equal (Topic 59). Example: A : B = 2 : 3 and B : C = 4 : 5 give A : B : C = 8 : 12 : 15. Five years hence the sum of their ages will be 120. The present sum is 120 - 3 × 5 = 105, the parts are 8 + 12 + 15 = 35, so k = 3. The ages are 24, 36 and 45. Check: 29 + 41 + 50 = 120.
- Family problems with three or more persons come in Topic 838 (Day 84).

2.10 Which method to use

What the question gives	Method	First step
A ratio now and a ratio n years ago or hence	Ratio parts	Ages ak and bk; add or subtract n for both; cross-multiply
Two ratios at two time points	Difference of ages	Make the differences of the parts equal; the change in one person's parts equals the years between
A ratio and the sum of the ages	Sum of ages	Bring the sum to the time of the ratio; divide it by the total of the parts

What the question gives	Method	First step
A ratio and the difference of the ages	Difference of ages	Difference of parts = the difference in years; no time adjustment
An average, with a member joining or leaving	Average of ages	Total = average × number; age the total by (number × years)
One ratio n years ago, another m years hence	n years ago, m years hence	Unknowns at n years ago; the gap is n + m years
Four numerical options	Substitution	Keep the multiples of the part; test every condition

3. Extra section: a drill of eight problems with full working

1. **The present ages of Hari and Gopi are in the ratio 3 : 4. After 7 years the ratio will be 4 : 5. Find their present ages.** (3k + 7) : (4k + 7) = 4 : 5, so 15k + 35 = 16k + 28 and k = 7. Hari is 21 and Gopi is 28. Check: 28 : 35 = 4 : 5. By differences: both ratios have a difference of 1 part; Hari goes from 3 parts to 4 parts, so 1 part = 7 years.
2. **The present ages of two colleagues are in the ratio 9 : 5. Six years ago the ratio was 7 : 3. Find their present ages.** Both differences of parts are 4. The elder goes from 7 parts to 9 parts: 2 parts = 6 years, so 1 part = 3 years. Ages now: 27 and 15. Check: six years ago, 21 : 9 = 7 : 3.
3. **The ages of two friends are in the ratio 5 : 4 now. Three years ago the sum of their ages was 66. Find their present ages.** Present sum = 66 + 2 × 3 = 72. 9 parts = 72, so k = 8. Ages: 40 and 32. Check: three years ago, 37 + 29 = 66.
4. **The ages of a mother and her daughter are in the ratio 11 : 4, and the mother is 28 years older. Find their ages.** 11 - 4 = 7 parts = 28 years, so k = 4. Mother 44, daughter 16. Check: 44 - 16 = 28.
5. **The average age of 4 friends is 24 years. A fifth friend joins them, and the average becomes 26 years. How old is the fifth friend?** Old total = 4 × 24 = 96. New total = 5 × 26 = 130. The fifth friend is 130 - 96 = 34.
6. **Seven years ago the ages of K and L were in the ratio 4 : 3. Seven years hence the ratio will be 6 : 5. Find their present ages.** The gap is 7 + 7 = 14 years. Ages 7 years ago: 4k and 3k. Then (4k + 14) : (3k + 14) = 6 : 5, so 20k + 70 = 18k + 84 and k = 7. Seven years ago: 28 and 21. Now: 35 and 28. Check: seven years hence, 42 : 35 = 6 : 5.
7. **The present ages of A, B and C are in the ratio 3 : 4 : 5. Six years ago the sum of their ages was 78. Find their present ages.** Present sum = 78 + 3 × 6 = 96. 12 parts = 96, so k = 8. Ages: 24, 32 and 40. Check: six years ago, 18 + 26 + 34 = 78.
8. **A mother is 32 and her daughter is 8. After how many years will the mother's age be twice the daughter's?** The difference, 24 years, never changes. At the ratio 2 : 1 the difference is 1 part, so the daughter will then be 24. She is 8 now, so the answer is 24 - 8 = 16 years. Check: (32 + 16) : (8 + 16) = 48 : 24 = 2 : 1. In the same way, the ratio was 5 : 1 two years ago: 30 : 6.

4. Three common exam traps

1. **Every person grows older by the same number of years.** Add (or subtract) the years for each person, not for one of them. The sum of two ages grows by twice the years: two ages that add up to 44 now will add up to 58 after 7 years, not 51. The total of a family grows by (number of members × years).
2. **Ratio parts are not ages, and a ratio belongs to its own time point.** "Ages in the ratio 8 : 3" means 8k and 3k years, not 8 and 3 years. "Seven years hence the ratio will be 3 : 2, and the difference is 8 years" gives the ages seven years hence, 24 and 16; the present ages are 17 and 9, found by subtracting 7 from each.
3. **Answer for the person and the time point that the question asks.** A problem may be solved through one person's age at one time and then ask about the other person, or about another time. If you find that B is 21 now, "B's age 9 years ago" is 12, not 21. Read the last line of the question again before you choose an option.

DAY 16 | TOPIC 159

Percentage change: forward, reverse and successive changes

General Mental Ability: Quantitative & Data | Item 10

1. Concept in one line

A percentage change measures a change against the old value, and every rise or fall can be written as a multiplying factor: going forward you multiply by the factor, going back you divide by it, and successive changes combine by multiplying their factors. The exam tests whether you keep the right base and multiply where a hurried candidate adds.

2. Revision notes

2.1 Percentage change and percentage points

- Recall from Topic 29: 1/2 = 50%, 1/4 = 25%, 1/8 = 12½%, 1/3 = 33 1/3%, 1/6 = 16 2/3%, 1/5 = 20% and 1/10 = 10%. These fractions make most factors in this topic easy to use.
- **Percentage change = (new value - old value) ÷ old value × 100** (Topic 119). The old value is the base and must be non-zero. For the positive starting quantities in this topic, a positive answer is a rise; a negative answer is a fall.
- Example: ration cards in a mandal go from 4,000 to 4,600. The rise is 600/4,000 × 100 = 15%. If they go back from 4,600 to 4,000, the fall is 600/4,600 × 100 = 13.04% (approximately). The gap is the same; the base is not.
- Twice a number is a rise of 100%. A fall of 100% leaves zero, so a quantity that cannot be negative cannot fall by more than 100%.
- **Percentage points.** When the two figures are themselves percentages, their plain difference is in percentage points (Topics 29 and 119). The share of households with an LPG connection goes from 72% to 81%: a rise of 9 percentage points, which is 9/72 × 100 = 12.5 per cent of the old share.

2.2 The multiplying factor

- A rise of r per cent multiplies a value by **(1 + r/100)**; a fall of r per cent multiplies it by **(1 - r/100)**. A rise of 10% on ₹200 gives ₹220, that is, 110% of the old price. The factor for a rise is the growth factor of Topic 99.
- To read a factor back as a change: change = (factor - 1) × 100 per cent. A factor of 0.96 is a fall of 4%; a factor of 1.32 is a rise of 32%.

Change	Factor as a decimal	Factor as a fraction
Rise of 10%	1.1	11/10

Change	Factor as a decimal	Factor as a fraction
Rise of 12½%	1.125	9/8
Rise of 20%	1.2	6/5
Rise of 25%	1.25	5/4
Rise of 33 1/3%	1.333...	4/3
Rise of 50%	1.5	3/2
Fall of 10%	0.9	9/10
Fall of 20%	0.8	4/5
Fall of 25%	0.75	3/4

- **Forward change (old to new): new value = old value × factor.** A household's monthly milk bill of ₹1,800 rises by 12½%: 1,800 × 9/8 = ₹2,025.

2.3 Reverse change: from the new value back to the old

- **Old value = new value ÷ factor**, provided the factor is non-zero. The percentage was a percentage of the old value, so it must not be taken of the new value.
- Example: after a rise of 20%, a family's monthly electricity bill is ₹1,560. The old bill = 1,560 ÷ 1.2 = ₹1,300. Taking 20% off ₹1,560 gives ₹1,248, which is wrong: the 20% was of ₹1,300, not of ₹1,560.
- A price after a discount works the same way, because a discount is a fall in price. A pressure cooker sold for ₹2,550 after a discount of 15% had a price of 2,550 ÷ 0.85 = ₹3,000 before the discount. A price that includes a tax of 10% is undone in the same way: ₹3,300 with the tax is 100/110 × 3,300 = ₹3,000 without it. (Discounts in detail: Topic 459.)
- **Why a rise of 25% is undone by a fall of 20%.** The factor of the rise is 5/4. To undo it, multiply by 4/5, which is a fall of 1/5 = 20%. In figures: 100 becomes 125, and 20% of 125 is 25, so 125 comes back to 100.
- In general, a rise of r% is undone by a fall of **r/(100 + r) × 100 per cent**, and a fall of r% is undone by a rise of **r/(100 - r) × 100 per cent** (for 0 ≤ r < 100). A 100% fall leaves zero and cannot be reversed by a finite percentage rise.

r	A rise of r% is undone by a fall of	A fall of r% is undone by a rise of
10	9 1/11%	11 1/9%
12½	11 1/9%	14 2/7%
20	16 2/3%	25%
25	20%	33 1/3%

r	A rise of r% is undone by a fall of	A fall of r% is undone by a rise of
33 1/3	25%	50%
50	33 1/3%	100%

2.4 "More than" and "less than"

- "A is r% more than B" takes B as the base. Then B is less than A by **r/(100 + r) × 100 per cent**, because now A is the base. This is the rule of 2.3 in other words.
- "A is r% less than B" gives: B is more than A by **r/(100 - r) × 100 per cent** (for $0 \le r < 100$). If A is 100% less than B, A is zero and a percentage comparison using A as the base is undefined.
- Example: household A earns ₹30,000 a month and household B ₹24,000. A earns 6,000/24,000 × 100 = 25% more than B; B earns 6,000/30,000 × 100 = 20% less than A. By the rule: 25/125 × 100 = 20.

2.5 Successive changes

- Each change acts on the value left by the change before it, so **the factors are multiplied**.
- **Two changes of a% and b%** (write a fall with a minus sign): net change = **a + b + ab/100 per cent**.
- Paddy procured in a district rises by 10% and then by 20%: 10 + 20 + 200/100 = 32% (check: 1.1 × 1.2 = 1.32). Adding the two gives 30%, which leaves out the second rise acting on the first.
- A rise of 20% followed by a fall of 10%: 20 - 10 - 200/100 = 8% (1.2 × 0.9 = 1.08).
- Two falls of 10% and 20%: -10 - 20 + 200/100 = -28%, a fall of 28% (0.9 × 0.8 = 0.72). Written as the size of the fall, it is a + b - ab/100. This minus form is for two falls only; two rises always add the product term.
- The order of the changes does not alter the result.
- **Three or more changes:** multiply all the factors. A rise of 10%, a rise of 20% and a fall of 25%: 1.1 × 1.2 × 0.75 = 0.99, a fall of 1%.
- **Do not replace two different rates by their average.** Rises of 10% and 20% give 1.32, a rise of 32%; two rises of 15% give 1.15 × 1.15 = 1.3225, a rise of 32.25%.
- **Equal rise and fall.** A rise of r% and a fall of r%, in either order, always give a **net fall of $r^2/100$ per cent**, because $(1 + r/100)(1 - r/100) = 1 - r^2/10{,}000$. A rise and a fall of 10% leave a fall of 1%; of 20%, a fall of 4%; of 50%, a fall of 25%.

2.6 Price, consumption and spending

- Spending = price × consumption. So the factor for spending = the factor for price × the factor for consumption.

- **To keep spending fixed after a price rise of r%,** the consumption factor must be 1 ÷ (1 + r/100), so consumption must fall by **r/(100 + r) × 100 per cent**. A rise of 25% in the price of cooking oil needs a cut of 25/125 × 100 = 20% in consumption, not 25%.
- After a price fall of r% (0 ≤ r < 100), consumption can rise by r/(100 - r) × 100 per cent with spending unchanged. A fall of 20% in price allows 25% more consumption.
- When both change freely, multiply: price up 20% and consumption down 10% give 1.2 × 0.9 = 1.08, so spending rises by 8%.

2.7 Compound growth and decline over n periods

- The same rate in every period: **value after n periods = V × (1 + r/100)^n** for growth and **V × (1 - r/100)^n** for decline. This is the formula A = P(1 + R/100)^n of Topic 99 used for any quantity.
- A city of 20,000 people growing at 5% a year has 20,000 × 1.157625 = 23,152.5, about 23,153 people, after 3 years.
- A village of 6,400 people growing at 12½% a year has 6,400 × 9/8 × 9/8 = 8,100 people after 2 years.
- A two-wheeler bought for ₹80,000 loses 10% of its value every year. After 2 years it is worth 80,000 × 0.9 × 0.9 = ₹64,800: a fall of 19%, not 20%.
- Different rates in different periods: multiply their factors (2.5).

2.8 Common traps

Trap	Wrong working	Right working
New value taken as the base	₹1,560 after a rise of 20%: 1,560 - 312 = ₹1,248	1,560 ÷ 1.2 = ₹1,300
Successive changes added	Rises of 10% and 20%: 30%	1.1 × 1.2 = 1.32: 32%
Minus form used for two rises	Rises of 10% and 20%: 10 + 20 - 2 = 28%	Two rises add the product term: 32%
Two rates replaced by their average	Rises of 10% and 20% as 15% twice: 32.25%	32%
Equal rise and fall read as no change	Up 20%, then down 20%: no change	1.2 × 0.8 = 0.96: a fall of 4%
Consumption cut by the same per cent	Price up 25%: cut consumption by 25%	Cut by 25/125 × 100 = 20%
A fraction percentage rounded	A rise of 16 2/3% taken as 17%	Use the factor 7/6

Other days cover profit and loss (Topic 259), price, consumption and expenditure problems (Topic 319), marked price and discount (Topic 459), compound interest (Topic 529), successive discounts (Topic 739) and population growth and depreciation (Topic 869).

3. Extra section: a drill of eight questions with full working

1. **Forward change.** A mandal has 2,400 members in self-help groups, and the number rises by 15%. What is the new number? 10% of 2,400 is 240 and 5% is 120, so the rise is 360. New number = 2,400 + 360 = 2,760. With the factor: 2,400 × 1.15 = 2,760.
2. **Percentage change.** Households with a toilet in a village go from 3,600 to 4,050. By what per cent did they rise? Rise = 450. Base = 3,600, the old value. 450/3,600 = 1/8 = 12½%.
3. **Reverse change after a fall.** After a fall of 16 2/3% caused by poor rain, a farmer's cotton output is 1,500 kg. What was it before? 16 2/3% = 1/6, so the factor is 5/6. Old output = 1,500 ÷ (5/6) = 1,500 × 6/5 = 1,800 kg. Adding 16 2/3% of 1,500 (that is, 250) gives 1,750 kg, which uses the wrong base.
4. **"More than" and "less than".** Rainfall in Mandal X is 60% more than in Mandal Y. By what per cent is the rainfall in Y less than in X? Take Y as 100; then X is 160. Y is less by 60/160 × 100 = 37 1/2%. By the rule: 60/(100 + 60) × 100 = 37 1/2%.
5. **A rise and then a fall.** A household's monthly grocery bill rises by 30% and then falls by 20%. What is the net change? 30 - 20 - 600/100 = 4%, a rise of 4%. Check: 1.3 × 0.8 = 1.04.
6. **Price and consumption.** The price of rice rises by 20%. A household that still spends ₹1,800 a month on rice now gets 5 kg less. What was the old price per kg? Consumption must fall by 20/120 = 1/6. So 1/6 of the old quantity is 5 kg, and the old quantity is 30 kg. Old price = 1,800 ÷ 30 = ₹60 per kg. Check: the new price is ₹72, and 1,800 ÷ 72 = 25 kg, which is 5 kg less.
7. **Compound growth.** A village of 15,625 people grows at 4% a year. What is its population after 3 years? Factor = 1.04 = 26/25. Population = 15,625 × 26/25 × 26/25 × 26/25 = 17,576 (15,625 is 25 × 25 × 25).
8. **Equal rise and fall, then reverse.** The price of a kilogram of onions rises by 20% in one week and falls by 20% the next week. It is now ₹48. What was it at the start? Net factor = 1.2 × 0.8 = 0.96, a fall of $20^2/100$ = 4%. Start price = 48 ÷ 0.96 = ₹50.

4. Three common exam traps

1. **In a reverse change, divide by the factor.** The given percentage is a percentage of the old value. A figure that stands at 600 after a rise of 20% was 600 ÷ 1.2 = 500, not 600 - 120 = 480. For the same reason a rise of 25% is undone by a fall of 20%, not of 25%.
2. **Successive changes are multiplied, not added.** A rise of 10% followed by a fall of 10% leaves 1.1 × 0.9 = 0.99 of the value, a fall of 1%, not "no change". Two rises of 10% give 21%, not 20%.
3. **A price rise is offset by a smaller cut in consumption.** To keep spending fixed after a price rise of 50%, consumption must fall by 50/150 × 100 = 33 1/3%, not by 50%.

DAY 16 | TOPIC 160

Current affairs: the BBNJ Agreement (High Seas Treaty) enters into force

Current Affairs | CA-ENV

1. Concept in one line

The BBNJ Agreement, adopted under the United Nations Convention on the Law of the Sea on 19 June 2023, entered into force on 17 January 2026 and deals with the conservation and sustainable use of marine biological diversity in the high seas and the Area, that is, in areas beyond national jurisdiction. The examination asks about its dates, its four elements, its bodies and India's position.

2. Revision notes

2.1 What the Agreement is

- **Full name:** Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction. Short names: the BBNJ Agreement (Biodiversity Beyond National Jurisdiction); in the press, the High Seas Treaty.
- **Parent treaty:** the United Nations Convention on the Law of the Sea (UNCLOS), opened for signature at Montego Bay, Jamaica, on 10 December 1982 and in force since 16 November 1994.
- **Objective (Article 2):** to ensure the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, for the present and in the long term.
- **Scope (Articles 1 and 3):** it applies to "areas beyond national jurisdiction", which Article 1 defines as "the high seas and the Area".
- **What it leaves out (Article 4):** it does not apply to any warship, military aircraft or naval auxiliary. Except for Part II, it also does not apply to other State-owned or State-operated ships or aircraft used only on government non-commercial service. Parties must ensure consistency with the Agreement so far as reasonable and practicable without impairing their operations or operational capabilities.
- **No reservations (Article 70):** no reservations or exceptions may be made, unless other articles of the Agreement expressly permit them.

A vast shared ocean: the BBNJ Agreement covers marine biodiversity in areas beyond national jurisdiction, across roughly two-thirds of the world’s ocean.

Two connected spaces:

- The high seas are waters outside the maritime areas excluded by UNCLOS Article 86.
- The Area is the seabed, ocean floor and subsoil beyond national jurisdiction.

Why collective rules matter: marine life and human activities cross national maritime boundaries. Conservation beyond national jurisdiction therefore requires international cooperation.

Do not merge water and seabed: the legal status of the water above a place can differ from that of the seabed below it. The next section explains the maritime zones.

2.2 Where it applies: the maritime zones of UNCLOS

The zones are measured from the baselines from which the breadth of the territorial sea is measured.

Zone	Article of UNCLOS	Limit and meaning
Territorial sea	Article 3	Up to a limit not exceeding 12 nautical miles. The coastal State exercises sovereignty over it
Contiguous zone	Article 33	May not extend beyond 24 nautical miles
Exclusive economic zone (EEZ)	Article 57	Shall not extend beyond 200 nautical miles (about 370 km). The coastal State has sovereign rights over its natural resources
Continental shelf (legal)	Article 76	Seabed and subsoil extend to the outer edge of the continental margin, or to 200 nautical miles where the margin does not reach that distance. Beyond 200 nautical miles, Article 76's formulae and constraints apply: generally the outer points may reach 350 nautical miles from the baselines OR 100 nautical miles from the 2,500-metre isobath (a depth contour). On submarine ridges the limit is 350 nautical miles; this ridge restriction does not apply to submarine elevations that are natural components of the continental margin (such as plateaux, rises, caps, banks and spurs). Thus 350 nautical miles is not an unconditional cap on every continental shelf
High seas	Articles 86 (scope) and 87 (freedoms)	All parts of the sea outside the EEZ, territorial sea, internal waters and archipelagic waters of an archipelagic State. All States enjoy high-seas freedoms under UNCLOS and other international law, with due regard for others' interests. Article 87 includes navigation, overflight, submarine cables and pipelines, permitted artificial islands and installations, fishing and scientific research; these are subject to the applicable legal conditions
The Area	Article 1	The seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction

Physical shelf versus legal shelf: the physical continental shelf is a shallow seabed landform (Topic 144; average width about 80 km). The legal continental shelf is the seabed-and-subsoil entitlement defined by UNCLOS Article 76. It can extend beyond 200 nautical miles where the Convention's conditions are met.

Water and seabed may have different legal status: seabed beyond 200 nautical miles is not automatically the Area. Where it forms part of a coastal State's extended continental shelf, the overlying waters can still be high seas if they are outside every State's EEZ and the other Article 86 exclusions.

2.3 How it was negotiated and how it enters into force

- **The process began in 2004:** the UN General Assembly established an informal working group. Later stages led to a Preparatory Committee and an Intergovernmental Conference (see the chronology in Section 3).
- The text was agreed on 4 March 2023. The Intergovernmental Conference adopted the Agreement by consensus on 19 June 2023.
- **Signature (Article 65):** open at UN Headquarters, New York, from 20 September 2023 to 20 September 2025.
- **Ratification (Article 66):** States ratify, approve or accept it, and deposit the instrument with the Secretary-General of the United Nations.
- **Entry into force (Article 68):** 120 days after the date of deposit of the sixtieth instrument of ratification, approval, acceptance or accession. For a State or regional economic integration organisation depositing after the sixtieth instrument, it enters into force on the thirtieth day after that deposit, subject to paragraph 1: it cannot precede the Agreement's general entry into force. A regional organisation's instrument is not counted in addition to its member States' instruments for the threshold.
- **The sixtieth:** Morocco deposited the 60th qualifying instrument (acceptance) and Sierra Leone the 61st (ratification) on 19 September 2025. These deposits triggered commencement; the Agreement was not yet in force that day. The Agreement entered into force 120 days later, on 17 January 2026.

2.4 The four elements

Element	Part	What the Agreement provides
Marine genetic resources, including the fair and equitable sharing of benefits	Part II	Marine genetic resources are material of marine plant, animal, microbial or other origin containing functional units of heredity of actual or potential value. No State shall claim or exercise sovereignty or sovereign rights over those of areas beyond national jurisdiction. Activities with respect to them are in the interests of all States and for the benefit of all humanity. Benefits are non-monetary (such as access to samples and capacity-building) and monetary. Monetary benefits from the utilisation of these resources and of digital sequence information on them are shared through the financial mechanism. Part II excludes fishing regulated under relevant international law and fishing-related activities. It also excludes fish or other living marine resources known to have been taken in fishing or fishing-related activities, except where regulated as utilization under Part II. This is a qualified Part II exclusion, not a blanket exclusion of fisheries from the entire Agreement

Element	Part	What the Agreement provides
Area-based management tools, including marine protected areas	Part III	A marine protected area is a geographically defined marine area designated and managed to achieve specific long-term biological diversity conservation objectives. Parties, individually or collectively, submit proposals to the secretariat. The Conference of the Parties takes the decisions. It decides by consensus as a general rule; after a two-thirds majority of Parties present and voting determines that all efforts at consensus have been exhausted, it may decide by a three-fourths majority of Parties present and voting
Environmental impact assessments	Part IV	Parties ensure that the impacts of planned activities under their jurisdiction or control are assessed before authorisation. Article 30 requires screening when a planned activity may have more than a minor or transitory effect, OR its effects are unknown or poorly understood. A full EIA is required where there are reasonable grounds to believe that it may cause substantial pollution or significant and harmful changes to the marine environment. The Party with jurisdiction or control determines whether the activity may proceed
Capacity-building and the transfer of marine technology	Part V	This Part is the fourth element of the package. Capacity-building also appears in Part II as one of the non-monetary benefits of marine genetic resources

On money for genetic resources, Article 14(6) requires developed Parties to make annual contributions to the special fund at 50 per cent of their assessed contributions to the COP budget. This is an interim arrangement until the COP decides the monetary-benefit modalities under Article 14(7); it is not a permanent 50 per cent share of commercial revenue. Monetary and non-monetary benefit-sharing remain separate.

2.5 Bodies and money: the cross-cutting provisions

Body or mechanism	Article	Point to remember
Conference of the Parties (COP)	Article 47	Established by the Agreement. Its first meeting is to be convened by the Secretary-General of the United Nations no later than one year after the entry into force of the Agreement. The UN has announced the first meeting (COP1) for 11 to 22 January 2027 at UN Headquarters, New York
Scientific and Technical Body	Article 49	Composed of members serving in their expert capacity, with multidisciplinary expertise, gender balance and equitable geographical representation
Secretariat	Article 50	Established by the Agreement; receives proposals for area-based management tools
Clearing-House Mechanism	Article 51	Consists primarily of an open-access platform; managed by the secretariat
Funding	Article 52	Includes the Global Environment Facility trust fund, a special fund, and a voluntary trust fund set up by the COP to help participation

General Assembly resolution 78/272 set up a Preparatory Commission to prepare for the entry into force of the Agreement and for the convening of the first meeting of the COP. Its work went on after entry into force: its third session ran from 23 March to 2 April 2026.

2.6 The agreements under UNCLOS

Instrument	Adopted or opened for signature	Entered into force	What it deals with
UNCLOS	Opened for signature on 10 December 1982 at Montego Bay	16 November 1994	The legal order of the oceans: the zones, navigation, the settlement of disputes
Agreement relating to the implementation of Part XI	Adopted on 28 July 1994	28 July 1996	Certain difficulties with the seabed mining provisions of Part XI
United Nations Fish Stocks Agreement	Adopted on 4 August 1995; opened for signature on 4 December 1995	11 December 2001, 30 days after the thirtieth instrument	Conservation and management of straddling fish stocks and highly migratory fish stocks
BBNJ Agreement	Adopted on 19 June 2023; opened for signature on 20 September 2023	17 January 2026, 120 days after the sixtieth instrument	Marine biological diversity of areas beyond national jurisdiction

Four bodies to know:

Body	What it is	Seat or meeting place
International Tribunal for the Law of the Sea (ITLOS)	An independent judicial body established by UNCLOS	Seat in Hamburg, Germany
International Seabed Authority (ISA)	The organisation through which the States Parties to UNCLOS organise and control mineral resources activities in the Area; came into existence on 16 November 1994, when UNCLOS entered into force	Headquarters in Kingston, Jamaica
Commission on the Limits of the Continental Shelf (CLCS)	Set up under UNCLOS; makes recommendations to coastal States on the outer limits of their continental shelf	Meets at UN Headquarters, New York
International Court of Justice (ICJ)	The principal judicial organ of the United Nations	Seat at the Peace Palace, The Hague, Netherlands

2.7 The link to "30 by 30"

- The Kunming-Montreal Global Biodiversity Framework (December 2022), Target 3, is commonly shortened to “protect 30 per cent of land and sea by 2030” or “30 by 30”. More precisely, it calls for at least 30 per cent of terrestrial and inland-water areas, and of marine and coastal areas, to be effectively conserved and managed by 2030 through ecologically representative, well-connected and equitably governed protected areas and other effective area-based conservation measures, with the Target’s wider safeguards.
- That pledge is not an article of the BBNJ Agreement. The Agreement supplies a legal means: under Part III the COP can establish marine protected areas in areas beyond national jurisdiction, which cover roughly two-thirds of the ocean.

2.8 India's position

- **Cabinet approval:** the Union Cabinet, chaired by the Prime Minister, approved India's signing of the Agreement; the Press Information Bureau announced it on 8 July 2024. The Ministry of Earth Sciences is to lead India's implementation, and the Government said India would ratify through the necessary legislative processes.
- **Signature:** India signed the Agreement on 25 September 2024, at the UN General Assembly.
- **Ratification:** in 2026 the Ministry of Earth Sciences put a draft BBNJ Bill, 2026 out for public consultation (comments by 2 June 2026). It described India as a signatory since September 2024 and stated India's objective to ratify. **Status on 18 October 2026:** the UN Treaty Collection records India’s signature of 25 September 2024, with no ratification, approval, acceptance or accession. India is therefore a signatory, not yet a Party on that dated record.
- **Counts on record:** in June 2024, 91 countries had signed and eight had ratified (PIB). Palau was the first to deposit its instrument of ratification (UN press release of 23 January 2024). The 60th and 61st came on 19 September 2025. On 18 October 2026 the UN Treaty Collection lists 145 signatories and 104 Parties. **Read the categories correctly:** signatories and Parties are different totals. Participation can include regional organisations and different legal forms of consent; these counts are a dated snapshot.

3. Extra section: chronology of the Agreement

Date	Event
17 November 2004	General Assembly resolution 59/24 sets up the Ad Hoc Open-ended Informal Working Group (nine sessions, 2006 to 2015)
19 June 2015	Resolution 69/292: decision to develop an international legally binding instrument; Preparatory Committee set up (four sessions, 2016 to 2017)
24 December 2017	Resolution 72/249 convenes the Intergovernmental Conference (one organisational meeting and five substantive sessions, 2018 to 2023)
4 March 2023	Text of the Agreement agreed

Date	Event
19 June 2023	Agreement adopted by consensus
20 September 2023	Opened for signature
22 January 2024	Palau deposits the first instrument of ratification (UN announcement on 23 January)
8 July 2024	PIB announces the Union Cabinet's approval for India to sign
25 September 2024	India signs
19 September 2025	Morocco deposits the 60th qualifying instrument (acceptance); Sierra Leone the 61st (ratification)
20 September 2025	Signature period closes
17 January 2026	Agreement enters into force
23 March to 2 April 2026	Third session of the Preparatory Commission
2 June 2026	Last date for comments on India's draft BBNJ Bill, 2026
11 to 22 January 2027	First meeting of the COP, UN Headquarters, New York (as announced by the UN)

4. Three common exam traps

1. **"Areas beyond national jurisdiction" are two things, not one.** They are the high seas (waters outside the EEZ, territorial sea, internal waters and archipelagic waters) and the Area (the seabed beyond the limits of national jurisdiction). Do not equate "the seabed beyond 200 nautical miles" with the Area: a coastal State's legal continental shelf can extend beyond 200 nautical miles. The legal continental shelf and the physical continental shelf are different concepts.
2. **"30 by 30" is not a target written into the BBNJ Agreement.** It is the pledge of the Kunming-Montreal Global Biodiversity Framework. The Agreement provides tools, including marine protected areas, that can help meet the biodiversity framework's separate target.
3. **Agreed, adopted, signed and ratified are four different steps.** The text was agreed on 4 March 2023, but the Agreement was adopted on 19 June 2023 and opened for signature on 20 September 2023. Signing does not make a country a Party: India signed on 25 September 2024, and the depositary record as of 18 October 2026 shows no ratification.