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AIM. PREPARE. ACHIEVE

DAY 9

English Notes

Topics 81 to 90

Full teaching notes, source references and 43 illustrated revision panels.

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IAS with Dr Ravi
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APPSC Group 1 Preparation Programme

Topics in Day 9

81 · Babur, Humayun and Sher Shah Suri

82 · Rajya Sabha: composition, Chairman and special powers

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Use the topic links above or the PDF bookmarks to move through the day.

Babur, Humayun and Sher Shah Suri

1. Concept in one line

Between 1526 and 1556 the throne of Delhi passed from the Lodis to Babur, from his son Humayun to the Afghan ruler Sher Shah Sur, and back to Humayun. The examination asks for the battles with their years and opponents, the books that tell the story, and the administrative measures of Sher Shah.

2. Revision notes

2.1 The setting, and Babur before India

- **The setting in 1526:** Delhi and Agra were under the Afghan sultan Ibrahim Lodi. The strongest Rajput ruler was Rana Sanga of Mewar. The Lodis themselves are taken up in Topic 711.
- **Descent:** on the mother's side the Mughals descended from Genghis Khan (died 1227), the Mongol ruler. On the father's side they were successors of Timur, the ruler of Iran, Iraq and modern-day Turkey. They were proud of the Timurid line and did not like to be called Mughal or Mongol. This is why they are also called Timurids.
- **Babur:** his original name was Zahir al-Din Muhammad. He was born in 1483 in Farghana (Fergana), now in Uzbekistan. He became ruler of Farghana in 1494, at the age of twelve.
- He took Samarkand in 1497 but could not hold it, and he lost Farghana to the Uzbegs. After years of wandering he seized Kabul in 1504 (NCERT).
- **The invitations from India:** Daulat Khan Lodi, the governor of the Punjab, and Ala-ud-din, an uncle of Ibrahim Lodi, invited him against the sultan. Rana Sanga also sought his intervention against Ibrahim Lodi.

2.2 Babur's four battles in India

Battle	Date	Whom Babur defeated	Points to remember
First battle of Panipat	21 April 1526	Ibrahim Lodi, sultan of Delhi, who died on the field	Babur's army had about 12,000 men. Ibrahim Lodi's army had about 100,000. Delhi and Agra passed to Babur
Khanwa, near Fatehpur Sikri	16 March 1527	Rana Sanga of Mewar	Before the battle Babur declared a holy war (jihad), gave up wine for good and had his gold and silver drinking vessels broken. After the victory he took the title Ghazi

Battle	Date	Whom Babur defeated	Points to remember
Chanderi	January 1528	Medini Rai, the Rajput chief who held the fort	Babur offered another place in exchange for Chanderi, and Medini Rai refused. When the fort was taken, a jauhar was held inside
Ghaghra (Ghagra)	6 May 1529	The eastern Afghans, led by Mahmud Lodi, a brother of Ibrahim Lodi, together with the army of Nusrat Shah, the sultan of Bengal	Fought near the place where the Ghaghra meets the Ganga. Nusrat Shah then accepted peace

- **How Panipat was won:** about 700 carts were tied to one another with rawhide ropes and set in a line. This was the Ottoman (Rumi) method. Gaps were left for the cavalry to charge through. The matchlock-men and the field guns stood behind the line of carts. Babur's horsemen went round both flanks of the enemy and encircled him: this encircling move is the tulughma.
- The guns were served by two Ottoman master gunners, Ustad Ali Quli and Mustafa Rumi. Britannica notes that the Afghans had never faced the new artillery. NCERT says Babur used cannons effectively.
- **Alternative spelling:** Khanwa is also written as Khanua.

2.3 Babur's death, his memoirs and his buildings

- Babur died at Agra on 26 December 1530 (Britannica). He was buried first at Agra. Between 1539 and 1544 his body was moved to Kabul; the garden there is now called Bagh-e Babur.
- **The Baburnama:** these are his memoirs. He wrote them in Chagatai Turkic, his first language. In Akbar's reign Abdul Rahim Khan-i-Khanan translated the book into Persian (1589).
- **What it says of India (extract in NCERT Class XII):** most of Hindustan lies on level land. It has many towns and cultivated lands, but Babur writes that it nowhere has running waters. He adds that crops there do not need to be watered: autumn crops grow by the rains alone, and spring crops grow even when no rain falls.
- **Buildings linked with him:** the congregational mosque at Sambhal (1526), the Kabuli Bagh mosque at Panipat (1528 to 1529) and a mosque at Ayodhya built by his officer Mir Baqi belong to his time. The Ram Bagh (Aram Bagh) garden at Agra has long been linked with him.

2.4 Humayun (1530 to 1540, and 1555 to 1556)

- Humayun was born at Kabul in 1508. He succeeded Babur in December 1530.

- **The division among the brothers:** NCERT explains that the Mughals did not follow primogeniture, the rule by which the eldest son inherits everything. They followed the Timurid custom of coparcenary inheritance, a division among all the sons. Kamran held Kabul and Kandahar, and the Punjab as well. The other two brothers were Askari and Hindal. Hindal later declared himself independent.
- **Bahadur Shah, the sultan of Gujarat,** occupied Raisen, Ujjain and some other places, and attacked Chittor in 1534. Humayun took Mandu and Champaner in 1535. But Bahadur Shah escaped and won Gujarat back in 1536.

Stage of the struggle with Sher Khan	Year	What happened
Chunar and Gaur	1538 (the year Sher Khan took Gaur)	The fort of Chunar had come to Sher Khan by marriage. Humayun lost time at this fort. Meanwhile Sher Khan took Gaur, the capital of Bengal
Chausa, near Buxar	26 June 1539	Sher Khan attacked the Mughal camp. Humayun escaped by swimming across the Ganga. Sher Khan now took the royal title Sher Shah
Kannauj	May 1540	Humayun was defeated again and had to leave Hindustan

- **The exile:** Humayun went to Sind. He married Hamida Banu Begum in 1541. Their son Akbar was born on 15 October 1542 at Amarkot (Umarkot), where the Rana of the place gave them shelter. Humayun then went to Persia. Its Safavid ruler, Shah Tahmasp, helped him. In 1545 Humayun took Kandahar and Kabul.
- **The return:** on 22 June 1555 he defeated Sikandar Shah Sur at Sirhind. On 23 July 1555 he was back in Delhi.
- **Death:** in January 1556 he died after falling on the stairs of his library, the Sher Mandal in the Purana Qila at Delhi.
- **The Humayun-nama** was written by Gulbadan Begum, Akbar's paternal aunt, at Akbar's request. It also holds her memories of Babur.
- **Humayun's Tomb** at Delhi was commissioned after his death by his wife Bega Begum, who is also known as Haji Begum. Its details are in Topic 611.

2.5 Sher Shah Sur: rise and conquests

- **Early life:** his name was Farid. He was born at Sasaram in Bihar. His father, Hasan Khan Sur, held the jagir of Sasaram.
- Farid managed this jagir and learned revenue work there. He assessed the land revenue and fixed the commissions of the collectors.

- He served Bahar Khan Lohani, the ruler of Bihar, who gave him the title Sher Khan for his bravery. Later he became regent for Bahar Khan's minor son. By about 1530 the real power in Bihar was his.
- In 1534 he defeated the army of Bengal at Surajgarh. In 1538 he took Gaur. About the same time he took the fort of Rohtas (Rohtasgarh) in Bihar by a trick.
- After the battles of Chausa (1539) and Kannauj (1540) he ruled north India from 1540 to 1545.

Year	Campaign as ruler	What happened
1542	Malwa	He annexed it to his kingdom
1543	Raisen	Puran Mal and his Rajputs surrendered on a promise of safety. They were then killed. It is counted the darkest mark on Sher Shah's reign
1544	Marwar: the battle of Sammel	Forged letters made Rao Maldeo suspect his own commanders and withdraw. His commanders Jaita and Kumpa fought on and were killed. Sher Shah is reported to have said that for a handful of millet he had almost lost the empire of Hindustan
1545	Kalinjar	During the siege a gunpowder explosion wounded him badly. He died on 22 May 1545

- **After him:** his son Islam Shah succeeded him in 1545. Islam Shah's son Firuz Shah held the throne only briefly after his father's death. Then, in 1555, the Sur princes Muhammad Adil Shah, Ibrahim Shah and Sikandar Shah held or claimed the throne as rivals.
- Hemu started as a market officer at Delhi and rose to be wazir under Muhammad Adil Shah, one of the Sur rulers who came after Islam Shah. This ruler was also called Adali. In the second battle of Panipat (1556) Akbar's army, led by the regent Bairam Khan, defeated Hemu. That battle comes in Topic 91.
- **Sur rule and the Mughal restoration:** Sur rule displaced Humayun in 1540; Humayun recovered Delhi in 1555. Hemu’s defeat in 1556 helped secure Akbar’s rule.

2.6 Sher Shah's administration

Field	What Sher Shah did
Units and officers	The kingdom was divided into sarkars, and each sarkar into parganas. In a pargana the shiqdar kept law and order. The amin or munsif saw to the measurement of land and the assessment of revenue. With them were a treasurer (fotadar) and two clerks (karkuns); the clerks kept the records in Hindi and in Persian. Over all the parganas of a sarkar stood the chief shiqdar (shiqdar-i-shiqdaran) and the chief munsif (munsif-i-munsifan)
Land revenue	The land was measured. It was graded as good, middling or bad, and the average produce was worked out. A schedule of crop rates (ray) was used to turn the State's share into cash at local prices. The peasant could pay in cash or in kind
Patta and qabuliyat	Each peasant was given a patta. It stated how much he had to pay. In return the peasant gave a qabuliyat. The qabuliyat was his deed of agreement to pay that amount
Share of the State	The standard assessment was one-third of the average produce. Multan was an exception: crop-sharing continued there at one-fourth.
Coins	A silver coin called the rupiya; the Reserve Bank of India (RBI) Monetary Museum gives its weight as 178 grains. A copper coin called the dam
Roads	There were four highways: (1) from the Indus to Sonargaon in Bengal; (2) from Agra to Jodhpur and Chittor; (3) from Lahore to Multan; (4) from Agra to Burhanpur. The first was an old imperial road, which Sher Shah restored. In later times it came to be called the Grand Trunk Road
Sarais	A sarai was built at every two kos along the highways; about 1,700 sarais are credited to him. They had separate lodgings for Hindus and for Muslims. Two horses were kept at each sarai. So the sarais also served as stages of the news service (dak chowki). Many sarais later grew into market towns (qasbas)
Trade	Customs duty on goods was taken at two points. The first was where the goods entered the kingdom: at Sikrigali for goods from Bengal, and at the frontier for goods from the north-west. The second was the place where the goods were sold

Field	What Sher Shah did
Justice and local responsibility for crime	The qazis heard cases, and the king himself was the highest court of appeal. The village headmen (muqaddams) and the zamindars had to catch the thieves of their area; if they did not, they had to make good the loss themselves. If a murderer was not found, the muqaddams themselves were punished
Army	He brought back two practices that had fallen into disuse: the branding of horses (dagh) and the keeping of a descriptive roll of each soldier (chehra)
Buildings	His own tomb at Sasaram: it stands in the middle of an artificial lake and was completed in August 1545. The Purana Qila at Delhi: inside it are the Qila-i-Kuhna mosque (about 1542) and the Sher Mandal. Rohtas fort: it is now in Pakistan
Chief source	The chief source is the Tarikh-i-Sher Shahi. Abbas Khan Sarwani wrote it in Persian about 1580, in Akbar's time

- Humayun's city at Delhi was Dinpanah. Sher Shah renamed it Shergarh.
- **Why he is called a forerunner of Akbar:** NCERT says that his administration borrowed elements from Alauddin Khalji, and that Akbar followed it as his model when he consolidated the Mughal Empire. Britannica says Akbar carried on the experiments that the Sur dynasty had begun. The RBI Monetary Museum says his rupiya is the precursor of the modern rupee.
- Alauddin Khalji's measures come in Topic 181, Akbar in Topic 91, and the Mughal administration and land revenue in Topic 101.

3. Extra section: chronology, 1483 to 1556

Year	Event
1483	Babur is born in Farghana
1494	Babur becomes ruler of Farghana at the age of twelve
1504	Babur seizes Kabul
1508	Humayun is born at Kabul
21 April 1526	First battle of Panipat is fought
16 March 1527	Battle of Khanwa is fought
January 1528	Babur takes Chanderi

Year	Event
6 May 1529	Battle of the Ghaghra is fought
26 December 1530	Babur dies at Agra; Humayun succeeds him
1534	Sher Khan wins at Surajgarh
1535 and 1536	Humayun takes Mandu and Champaner in 1535; Bahadur Shah wins Gujarat back in 1536
1538	Sher Khan takes Gaur
26 June 1539	Battle of Chausa: Sher Khan becomes Sher Shah
May 1540	Battle of Kannauj: Humayun leaves Hindustan
15 October 1542	Akbar is born at Amarkot
1542, 1543 and 1544	Sher Shah takes Malwa in 1542 and Raisen in 1543, and fights at Sammel in Marwar in 1544
22 May 1545	Sher Shah dies at Kalinjar; Islam Shah succeeds him
1545	Humayun takes Kandahar and Kabul
22 June 1555	Humayun defeats Sikandar Shah Sur at Sirhind
23 July 1555	Humayun returns to Delhi
January 1556	Humayun dies at Delhi
1556	Second battle of Panipat is fought: this topic ends here

What the table shows:

- Babur ruled in India for less than five years (1526 to 1530). Sher Shah ruled for five years (1540 to 1545).
- Humayun's reign has two parts: about ten years (1530 to 1540) and about six months (July 1555 to January 1556). Between them he spent about fifteen years away.
- Akbar was born during the exile, between the battle of Kannauj (1540) and the death of Sher Shah (1545).

4. Three common exam traps

1. **Who wrote which book, and in which language.** Babur wrote his memoirs in Chagatai Turkic, not in Persian. The Persian version came in Akbar's reign, from Abdul Rahim Khan-i-Khanan. The Humayun-nama was not written by Humayun: Gulbadan Begum wrote it. The Tarikh-i-Sher Shahi was not written in Sher Shah's time: Abbas Khan Sarwani wrote it about 1580, in Akbar's time.

2. **The order of events between 1539 and 1556.** Chausa (1539) comes before Kannauj (1540). Sher Khan took the title Sher Shah after Chausa; Humayun left Hindustan only after Kannauj. Akbar was born at Amarkot in 1542, not at Kabul and not in Persia. When Humayun came back in 1555, Sher Shah had been dead for ten years: the Sur prince whom Humayun defeated at Sirhind was Sikandar Shah.
3. **The places and dates of Sher Shah.** He died at Kalinjar, but his tomb is at Sasaram. The Rohtas fort that he built is now in Pakistan; Rohtas (Rohtasgarh) in Bihar is a fort that he captured. The rupiya was a silver coin and the dam a copper coin. The road from the Indus to Sonargaon was an old imperial road that he restored.

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Babur: four battles, one new empire

Chronological sequence · schematic locations



Babur founded Mughal rule in 1526.

Four victories in four years established Babur's power in North India.

Panipat 1526 — Ibrahim Lodi

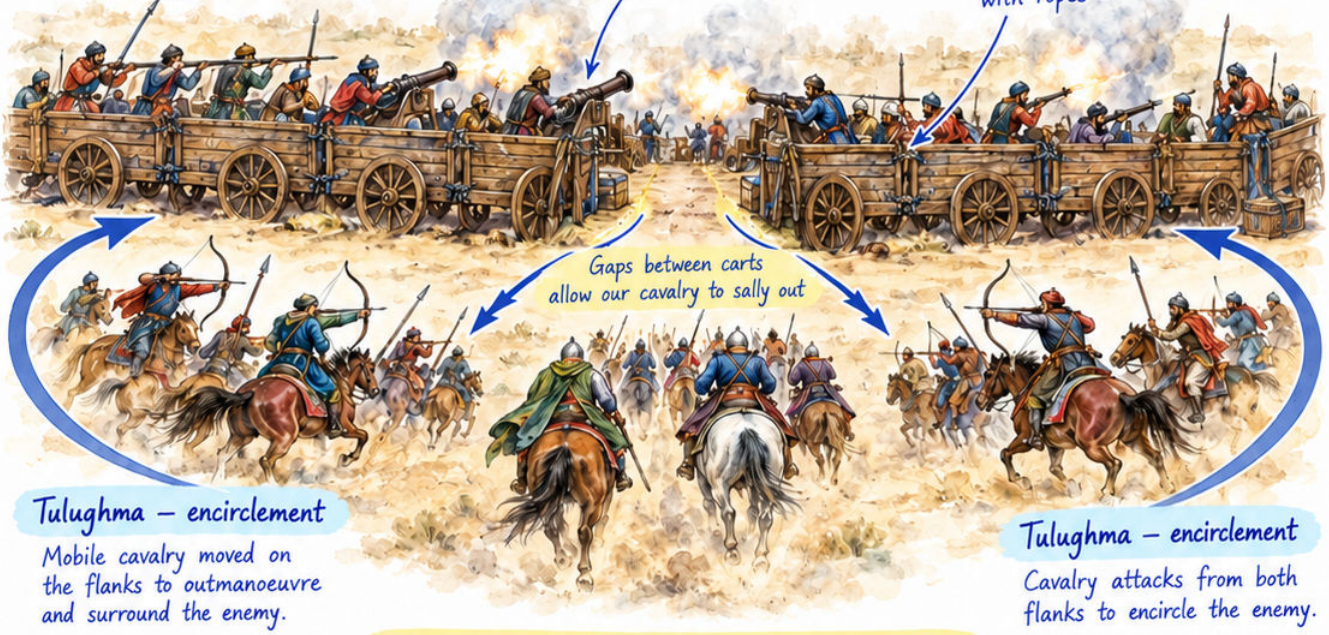
Khanwa 1527 — Rana Sanga

Chanderi 1528 — Medini Rai

Ghaghra 1529 — eastern Afghans

The Ottoman cart line

Babur used carts linked with ropes, with guns and matchlocks sheltered behind them.



Tulughma – encirclement

Mobile cavalry moved on the flanks to outmanoeuvre and surround the enemy.

Tulughma – encirclement

Cavalry attacks from both flanks to encircle the enemy.

Victory depended on tactics as well as artillery.

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Humayun: loss, exile and return

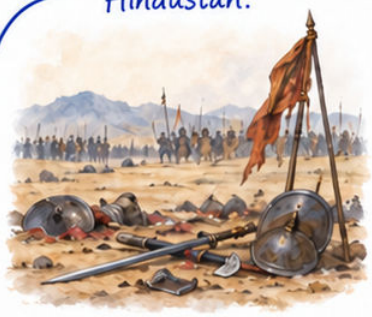
1530
Succeeds Babur as Mughal emperor.



1539
Chausa — defeated by Sher Shah.



1540
Kannauj — loses Hindustan.



Exile in Sind and Persia.



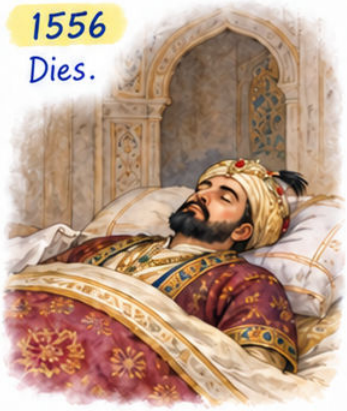
1545
Recovers Kabul and Kandahar.

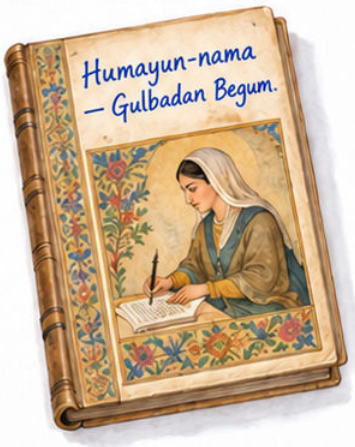


1555
Returns to Delhi.



1556
Dies.





Key points:

- Persian support helped recovery.
- Restored rule was brief.

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Sher Shah: the revenue agreement

1. Measurement
Land was carefully measured to find the area of each holding.

2. Assessment
Revenue was assessed on the basis of the average produce of the land.

Standard assessment: one-third of the average produce.

Exception in Multan: one-fourth of the produce under crop-sharing.

3. Written agreement
The terms and revenue demand were recorded in writing.

Patta
Gave the cultivator the terms of the agreement and the revenue demand to be paid.

Qabuliyat
Recorded the cultivator's acceptance of the terms and his promise to pay the revenue demand.

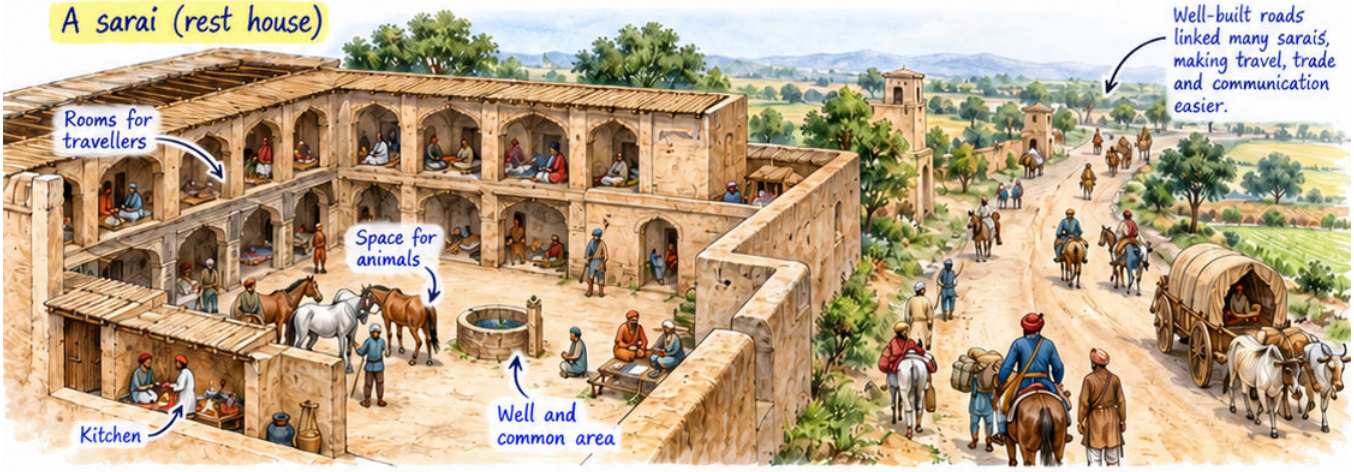
Land revenue is separate from customs duties.

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Sher Shah: roads that connect government

A sarai (rest house)



Sarais: rest, trade and communication



- Gave rest and safety to travellers.
- Helped trade by bringing merchants together.
- Served as points for communication, where news and state orders could be received and sent.

Relay horses: faster news



- Fresh horses kept at sarais for royal couriers.
- Messages could travel faster to carry news and orders.

Silver rupiya: standard coinage



- Introduced a standard silver rupiya for easier and fairer trade.
- Helped in collecting and paying revenue across the empire.

Administrative hierarchy

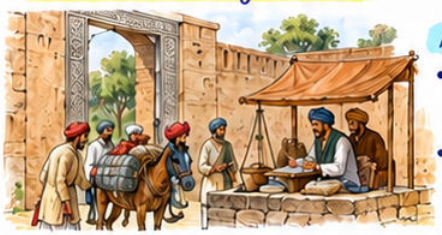


Sarkar
- Larger administrative unit.
- Headed by a chief shiqdar.

Pargana
- Smaller unit within a sarkar.
- Headed by a shiqdar.

Village
- Local level of administration.

Customs: at entry and sale



At entry / border
- Customs collected on goods entering the empire.
- Helped increase state revenue.

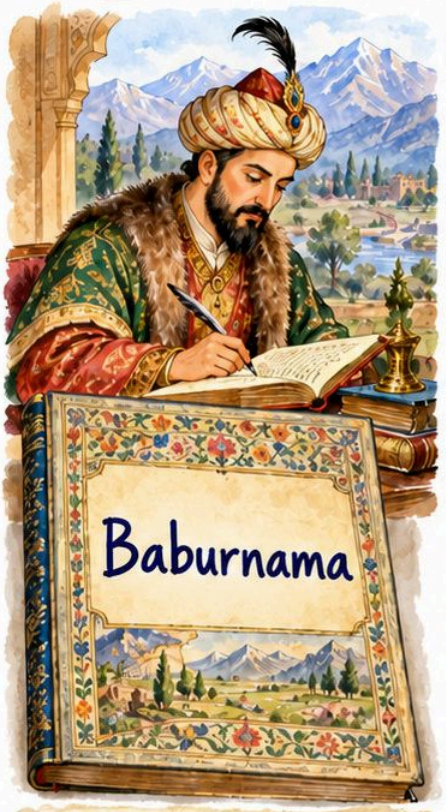


At sale
- Customs also collected at the time of sale in markets.
- Supported trade and added to state revenue.

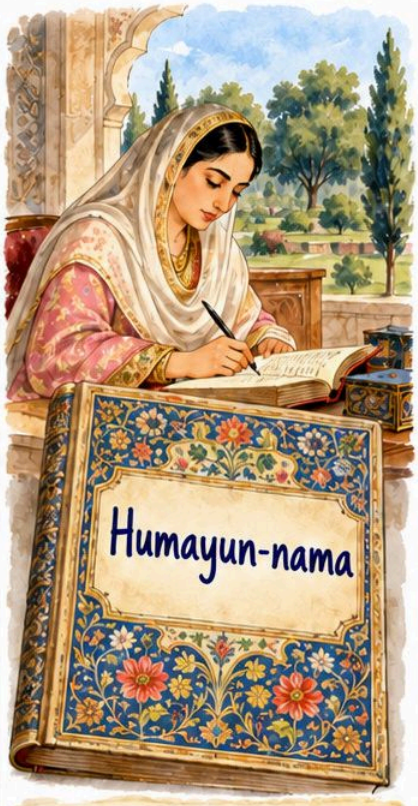
Transport, currency and administration reinforced one another.

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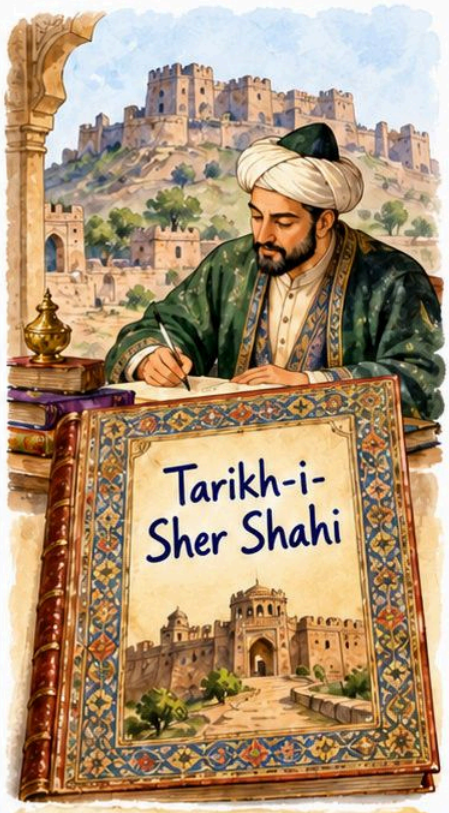
Three books, three different authors



- Babur's memoirs
- Written in Chagatai Turkic
- Persian translation in Akbar's reign by Abdul Rahim Khan-i-Khanan.



- Written by Gulbadan Begum, at Akbar's request
- Includes her memories of Babur and Humayun
- Not an autobiography written by Humayun.



- Abbas Khan Sarwani
- Written in Persian, about 1580, during Akbar's reign
- A later source on Sher Shah, not a text from his own reign.



Match author, language and period separately.

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Rajya Sabha: composition, Chairman and special powers

1. Concept in one line

The Rajya Sabha (Council of States) is the House of Parliament in which the States and the Union territories are represented; it is not subject to dissolution, and the Vice-President presides over it as its Chairman. The examination asks for the exact figures and words of the Constitution on its seats, its Chairman and Deputy Chairman, its special powers and the points where it is weaker than the Lok Sabha.

2. Revision notes

2.1 Composition: Article 80

- **Article 80(1).** The Council of States consists of (a) "twelve members to be nominated by the President in accordance with the provisions of clause (3)", and (b) "not more than two hundred and thirty-eight representatives of the States and of the Union territories". Twelve is a fixed number; 238 is only a ceiling.

Part of the House	Maximum in the Constitution (Article 80(1))	Allocated/full strength (vacancies may reduce the sitting membership)
Representatives of the States and of the Union territories	Not more than 238	233: 225 from 28 States and 8 from 3 Union territories
Members nominated by the President	12	12
Total	250	245

- These are seats, not a count of members currently in office. The allocated/full strength (233 + 12 = 245) is given on the Rajya Sabha's website.
- **Nominated members (Article 80(3)).** They are persons having "special knowledge or practical experience" in four fields: literature, science, art and social service.
- **Nominated members in two elections.** The President is elected by an electoral college consisting of the elected members of both Houses of Parliament and the elected members of the Legislative Assemblies of the States (Article 54). This means that, among the members of Parliament, only the elected ones vote in that election; nominated members of the Rajya Sabha do not. All the members of the two Houses vote in the election of the Vice-President (Article 66). So the nominated members vote only in the second.
- The one-third of seats for women under the 106th Amendment does not cover the Rajya Sabha (Topic 54).

2.2 Seats: the Fourth Schedule

- Article 80(2) says that the seats are allotted to the States and the Union territories as laid down in the Fourth Schedule. The allocation is made on the basis of the population of each State, so the States do not have equal seats.

Seats in the Rajya Sabha	States and Union territories
31 (the most)	Uttar Pradesh. Next come Maharashtra with 19 and Tamil Nadu with 18
11	Andhra Pradesh
7	Telangana
1 each (the fewest)	Eight States: Arunachal Pradesh, Goa, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. One Union territory: Puducherry
Union territories that have seats	Delhi 3, Jammu and Kashmir 4, Puducherry 1

- **Andhra Pradesh.** The undivided State had 18 seats. After the bifurcation of 2014 (Topic 14), Andhra Pradesh has 11 and Telangana has 7.
- **Union territories.** Only three of the 8 Union territories have seats. Jammu and Kashmir has been represented as a Union territory with effect from 31 October 2019. The other five Union territories have no seat.

2.3 How the members are elected

- **States (Article 80(4)).** The representatives of each State "shall be elected by the elected members of the Legislative Assembly of the State in accordance with the system of proportional representation by means of the single transferable vote". It is an indirect election, and nominated members of an Assembly have no vote in it.
- **Union territories (Article 80(5)).** Their representatives "shall be chosen in such manner as Parliament may by law prescribe". Parliament's law (section 27A of the Representation of the People Act, 1950) sets up an electoral college for each such territory. For Delhi and for Puducherry it consists of the elected members of the Legislative Assembly.
- **Open ballot.** The Representation of the People (Amendment) Act, 2003 replaced the secret ballot with the open ballot in Rajya Sabha elections. An elector who belongs to a political party lets the authorised agent of that party see how he has voted, before the ballot paper goes into the box. The aim is to check cross-voting.
- **Kuldip Nayar v. Union of India (22 August 2006).** A Constitution Bench of the Supreme Court upheld the open ballot: the right to vote is a statutory right, and the Constitution does not protect the secret ballot in this election. The Court also upheld the other change of 2003, which removed the residence (domicile) requirement. Until then section 3 of the 1951 Act required a candidate to be an elector for a Parliamentary constituency in the State he was to represent; now it is enough to be an elector for a Parliamentary constituency anywhere in India. The Court held that residence in the State is not a requirement of Article 80(4), and that the federal principle does not require a State's representatives to belong to that State.

- **'None of the above' (NOTA).** The Election Commission introduced NOTA in Rajya Sabha elections in 2014. On 21 August 2018 a three-judge Bench of the Supreme Court allowed a challenge to the Commission's circulars and held that NOTA cannot be used in Rajya Sabha elections, which are indirect elections (Shailesh Manubhai Parmar's case).

2.4 A permanent House: term, qualifications and dates

- **Article 83(1).** "The Council of States shall not be subject to dissolution". Instead, "as nearly as possible one-third of the members thereof shall retire" on the expiration of every second year, under provisions made by Parliament by law. Books therefore call the Rajya Sabha a permanent or continuing House.
- **Six years.** Article 83 does not mention six years for the Rajya Sabha. The term of a member is fixed by section 154 of the Representation of the People Act, 1951: it "shall be six years". A member chosen to fill a casual vacancy serves only the remainder of his predecessor's term. For the Lok Sabha, Article 83(2) itself gives the five years (Topic 54).
- **Qualifications (Article 84).** A member must be not less than 30 years of age (25 years for the Lok Sabha). The other conditions, citizenship and the oath or affirmation, are the same for both Houses (Topic 54).
- **Dates.** The Council of States was first constituted on 3 April 1952 and held its first sitting on 13 May 1952. On 23 August 1954 the Chairman announced in the House that the Council of States would be called the Rajya Sabha.

2.5 The Chairman and the Deputy Chairman

Point	Chairman	Deputy Chairman
Who holds the office	The Vice-President of India, ex officio (Articles 64 and 89(1))	A member of the Rajya Sabha, chosen by the House "as soon as may be" (Article 89(2))
Is he a member of the House?	No. The Vice-President is not a member of either House (Article 66(2))	Yes. He vacates office if he ceases to be a member (Article 90(a))
Resignation	As Vice-President, by writing addressed to the President (Article 67)	By writing addressed to the Chairman (Article 90(b))
Removal	Only by removing him as Vice-President: a resolution of the Rajya Sabha passed by a majority of all the then members and agreed to by the Lok Sabha, after at least 14 days' notice (Article 67)	A resolution of the Rajya Sabha passed by a majority of all the then members, after at least 14 days' notice (Article 90)

Point	Chairman	Deputy Chairman
While a resolution for his removal is under consideration (Article 92)	He shall not preside, though he is present. He may speak and take part in the proceedings. He "shall not be entitled to vote at all on such resolution or on any other matter during such proceedings"	He shall not preside, though he is present
Salary	Fixed by Parliament by law (Article 97). The Vice-President is paid as Chairman. While he acts as President he is not entitled to the Chairman's salary (Article 64)	Fixed by Parliament by law (Article 97)
Office holders (official sources checked on 11 October 2026; recheck before the examination)	C.P. Radhakrishnan, Vice-President since 12 September 2025	Harivansh, elected unopposed on 17 April 2026 for a third term in the office

- **The Chairman's vote.** On an ordinary question the Chairman does not vote in the first instance, but has a casting vote when the votes are equal (Article 100). While a resolution for his own removal is under consideration he may not vote at all, whereas the Speaker in the same position may vote in the first instance (Topic 54). The Speaker is a member of his House; the Chairman is not.
- "A majority of all the then members" is the effective majority explained in Topic 54.
- **When the Chairman is not there (Article 91).** If the Chairman's office is vacant, or the Vice-President is acting as President, the Deputy Chairman performs the duties. If the Chairman is absent from a sitting, the Deputy Chairman acts as Chairman.
- **Panel of Vice-Chairmen.** The Chairman nominates members of the Rajya Sabha to this panel. When both the Chairman and the Deputy Chairman are absent from a sitting, a person determined by the rules of procedure of the House acts as Chairman (Article 91(2)); a member of this panel then presides. When both offices are vacant, a member of the Rajya Sabha appointed by the President performs the duties of the Chairman (Article 91(1)).
- **Leader of the House.** Normally the Prime Minister, if he is a member of the Rajya Sabha; otherwise a Minister who is a member of the House and is nominated by the Prime Minister.
- **Leader of the Opposition.** A member who leads the Opposition party with the greatest numerical strength and is recognised as such by the Chairman. The office got statutory recognition, with salary and allowances, by an Act of 1977.

2.6 Special powers of the Rajya Sabha

Article	What the Rajya Sabha does	What follows
249	By a resolution supported by at least two-thirds of the members present and voting, it declares that national interest requires or justifies Parliament making laws on GST under Article 246A or on a specified matter in the State List.	Parliament may make laws on that matter. The resolution remains in force for the period it specifies, not exceeding one year. Each fresh resolution passed in the same manner continues it for a further period of one year. Six months after the resolution ceases to operate, the law ceases to have effect to the extent that Parliament would otherwise lack legislative competence; things already done or omitted remain unaffected.
312	It declares by a resolution, supported by the same majority, that it is "necessary or expedient in the national interest" to do so	Parliament may by law create one or more all-India services common to the Union and the States. The words "including an all-India judicial service" were added by the 42nd Amendment. The Indian Administrative Service and the Indian Police Service are deemed to be services created under this Article
352, 356 and 360	It approves a Proclamation at a time when the Lok Sabha stands dissolved	Both Houses must approve a Proclamation: within one month under Article 352, and within two months under Articles 356 and 360. If the Lok Sabha is dissolved, the Rajya Sabha's approval keeps the Proclamation in operation until 30 days after the new Lok Sabha first sits. By then that House must also approve it, or the Proclamation ceases to operate
67	It passes the resolution to remove the Vice-President	The resolution must be passed by the Rajya Sabha and then agreed to by the Lok Sabha. It cannot begin in the Lok Sabha

- In both Article 249 and Article 312 the two-thirds is counted on the members present and voting.

2.7 The Rajya Sabha and the Lok Sabha compared

Matter	Lok Sabha (Topic 54)	Rajya Sabha
Money Bills (Articles 109 and 110)	A Money Bill is introduced only here. The Speaker's decision on whether a Bill is a Money Bill is final. This House may accept or reject any recommendation of the Rajya Sabha	It cannot introduce or amend a Money Bill. It must return the Bill within 14 days with its recommendations. If it does not, the Bill is deemed to have been passed by both Houses in the form in which the Lok Sabha passed it
Council of Ministers (Article 75(3))	The Council of Ministers is collectively responsible to this House. A motion of no confidence therefore belongs here (Topic 454)	It cannot make or unmake the Government
Joint sitting (Article 108)	The Speaker presides. With an allocated strength of 543 seats against 245, this House has the larger membership	The decision is by a majority of the total number of members of both Houses present and voting. There is no joint sitting on a Money Bill
Demands for grants (Article 113)	They are submitted to this House, which may assent to a demand, refuse it or reduce it	They are not submitted to the Rajya Sabha
Ending a national emergency (Article 352)	If this House passes a resolution disapproving a Proclamation or its continuance, the President shall revoke it	It has no such power

- **Where the two Houses are equal.** (a) Ordinary Bills: a Bill may originate in either House, and must be agreed to by both (Article 107). (b) Constitution Amendment Bills: each House must pass the Bill by a special majority (Article 368; Topic 42). (c) The President: elected members of both Houses vote in his election (Article 54), and either House may prefer the charge for his impeachment, which the other House then investigates (Article 61). (d) Removal of a Judge of the Supreme Court: each House must support the address by a majority of its total membership and by not less than two-thirds of its members present and voting (Article 124(4)).
- The two Houses have met in a joint sitting on three occasions (Topic 432).

3. Extra section: the Rajya Sabha in dates

Date	What happened
3 April 1952	The Council of States was first constituted
13 May 1952	Its first sitting was held

Date	What happened
23 August 1954	The Chairman announced that the Council of States would be called the Rajya Sabha
1956	The 7th Amendment substituted the Fourth Schedule and brought the Union territories into Article 80
3 January 1977	The words "including an all-India judicial service" came into Article 312 (42nd Amendment)
1977	The Leader of the Opposition got statutory recognition, with salary and allowances
30 May 1987	The total of the Fourth Schedule rose from 232 to 233, when Goa became a State
2003	The Representation of the People (Amendment) Act brought the open ballot into Rajya Sabha elections
22 August 2006	Kuldip Nayar v. Union of India: the Supreme Court upheld the open ballot
21 August 2018	The Supreme Court held that NOTA cannot be used in Rajya Sabha elections
31 October 2019	Jammu and Kashmir began to be represented as a Union territory
12 September 2025	C.P. Radhakrishnan entered office as Vice-President, and so as Chairman
17 April 2026	Harivansh was elected Deputy Chairman, unopposed

- The total of 233 has not changed since 1987. The bifurcation of Andhra Pradesh only divided 18 seats into 11 and 7.
- The motion for Harivansh’s election as Deputy Chairman was moved by the Leader of the House, J.P. Nadda.

4. Three common exam traps

1. **250, 245, 238 and 233 are four different figures.** 250 is the maximum strength of the House under Article 80 (238 + 12), and 245 is its full strength (233 + 12), with vacancies potentially reducing the sitting membership. 238 is the maximum number of representatives of the States and of the Union territories, a ceiling ("not more than"); 233 is the number of seats that these representatives, the elected members, have at present. The number of seats for nominated members is fixed at twelve. The fields for nomination are four: literature, science, art and social service. Remember also where the nominated members vote: they vote in the election of the Vice-President, but not in the election of the President.

2. **The Chairman is not a member, and this decides his vote.** On an ordinary question he does not vote in the first instance and has only a casting vote, like the Speaker. The difference comes when a resolution for his removal is under consideration. The Speaker may then vote in the first instance. The Chairman may speak and take part, but may not vote at all, and he does not preside though he is present. The Deputy Chairman, unlike the Chairman, is a member of the House and resigns to the Chairman.
3. **Two kinds of majority, and three time limits.** The two special-power resolutions (on GST under Article 246A or a State List matter, and on a new all-India service) need two-thirds of the members present and voting, not two-thirds of the total membership. The two removal resolutions (against the Vice-President and against the Deputy Chairman) need a majority of all the then members, after 14 days' notice. Do not mix the time limits either: an Article 249 resolution runs for not more than one year at a time; six months after it expires, the law ceases to operate only to the extent that Parliament would otherwise lack competence, while earlier things done or omitted are preserved, and the 14 days for returning a Money Bill have nothing to do with the 14 days' notice.

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Rajya Sabha: seats and representation

Council of States of Parliament.

Represents the States and Union Territories.



A permanent House (not subject to dissolution).

Members have staggered 6 year terms, with elections held biennially.

Constitutional maximum strength

250

- **Up to 238** representatives of the States and Union Territories
- **12** nominated by the President (eminent persons in the fields of art, literature, science and social service)

Allocated (full) strength

245

- **233** representatives of the States and Union Territories
- **12** nominated by the President (eminent persons in the fields of art, literature, science and social service)

Vacancies (due to retirement, resignation, etc.) can reduce the actual sitting membership below the full strength of 245.

How State representatives are elected

- Elected by the elected Members of the Legislative Assembly (MLAs) of the concerned State.
- Method: Proportional representation by means of the single transferable vote (STV).
- Ensures proportionality, so different parties can get representation according to their strength in the State Assembly.

Single transferable vote (ballot transfer)

1. First preferences
2. Candidate A elected
3. Transfer of excess votes



MLAs rank candidates in order of preference (1, 2, 3, ...).

When a candidate reaches the required quota, they are elected.

If A has surplus votes, the excess is transferred to the next preferences on those ballots.

Examples (number of Rajya Sabha seats)



Andhra Pradesh — **11** seats



Telangana — **7** seats

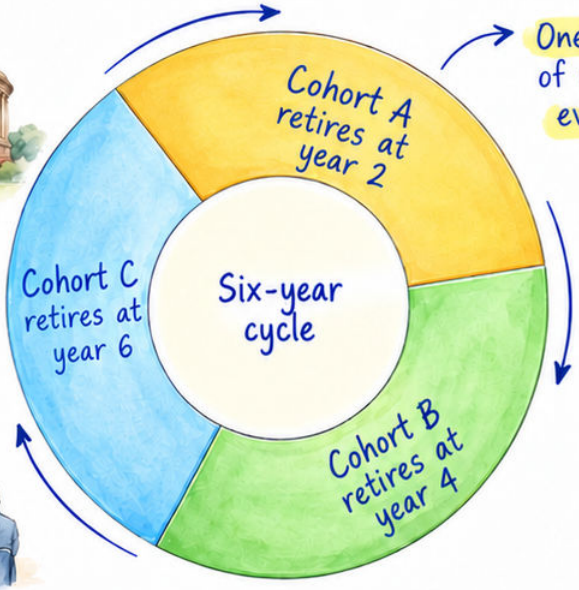
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A permanent House, rotating members



Rajya Sabha is **not dissolved.** It continues in existence at all times.



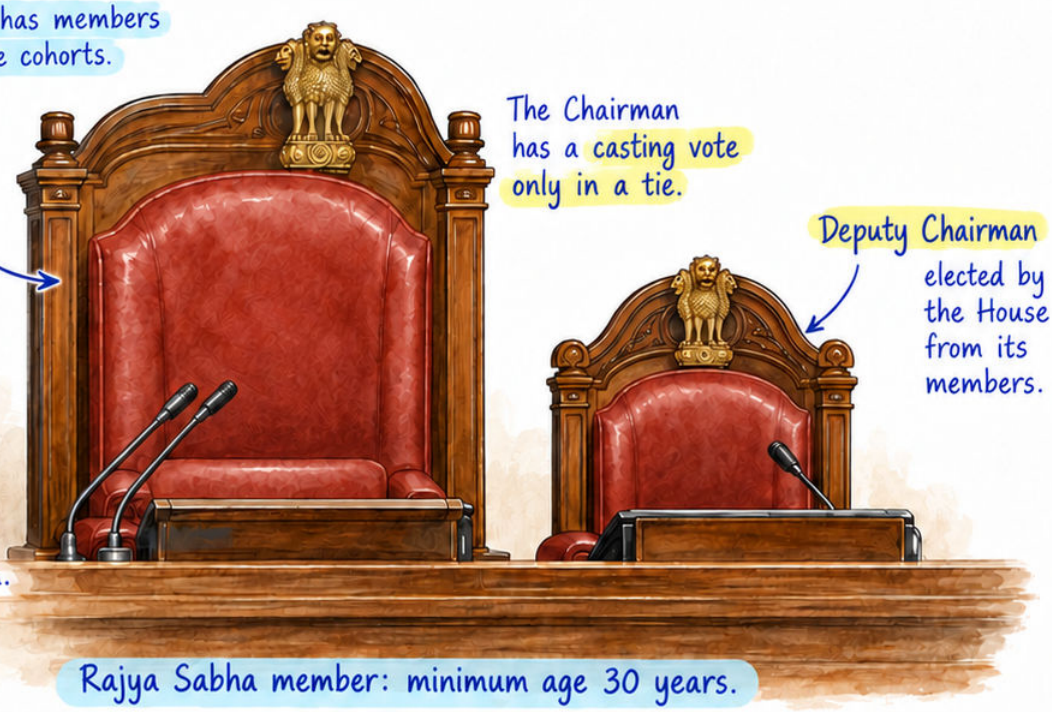
One-third of members retire **every two years.**

Member term: **Six years.**

Casual vacancy: Member holds office for the remainder of the predecessor's term.



The House always has members from all three cohorts.



Vice-President of India ex officio Chairman of the Rajya Sabha.

The Chairman has a casting vote only in a tie.

Deputy Chairman elected by the House from its members.

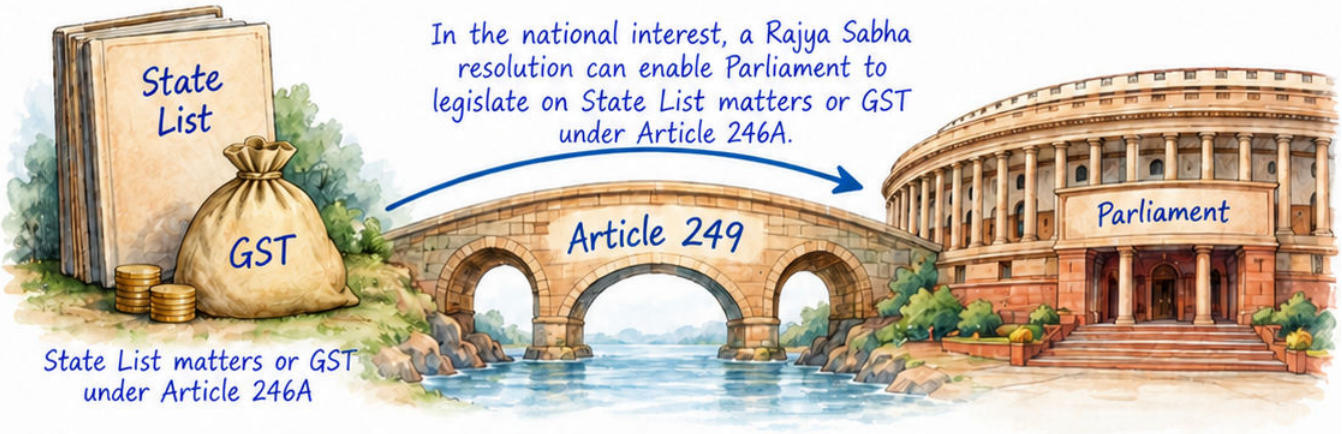
The Chairman is **not a member** of the Rajya Sabha.

Rajya Sabha member: minimum age 30 years.

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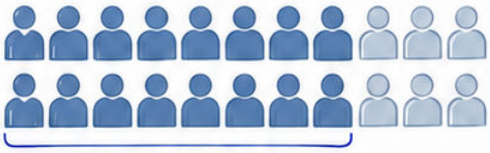
Article 249: a national-interest bridge



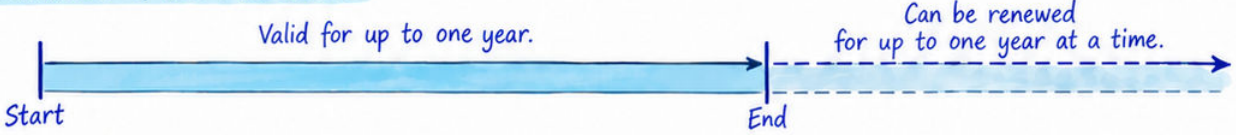


The resolution

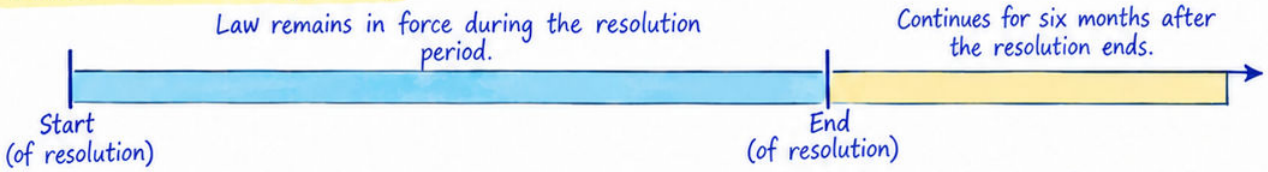
Must be passed in the Rajya Sabha by at least two-thirds of the members present and voting.



Duration of the resolution



Effect of the law (sunset)



- Applies only to the extent Parliament otherwise lacks competence.
- Does not affect any act or omission done before the law ceases to be in force.

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Special powers and financial limits

Article 249

If Rajya Sabha passes a resolution in the national interest by a two-thirds majority of the members present and voting, Parliament can make laws on a matter in the State List.



Article 312

Parliament may provide for the creation of All India Services if the Rajya Sabha passes a resolution in the national interest by a two-thirds majority of the members present and voting.

Article 67(b)

A resolution for the removal of the Vice-President begins in the Rajya Sabha and must be passed by a majority of all the then members, with the agreement of the Lok Sabha.



Money Bill



Passed by Lok Sabha → Sent to Rajya Sabha



Rajya Sabha may make recommendations within 14 days.



Lok Sabha may accept or reject the recommendations.

No joint sitting

There shall be no joint sitting of the two Houses for a Money Bill or a constitutional amendment.

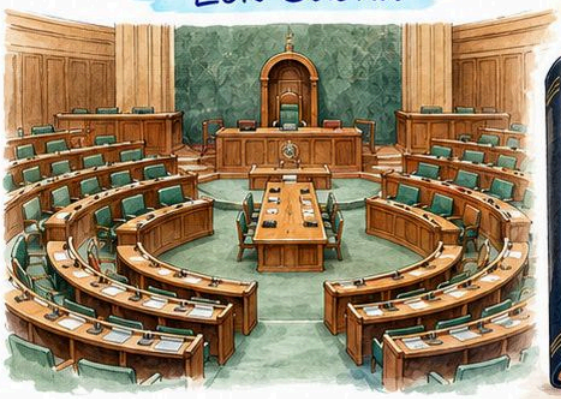


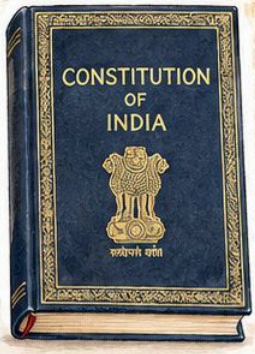
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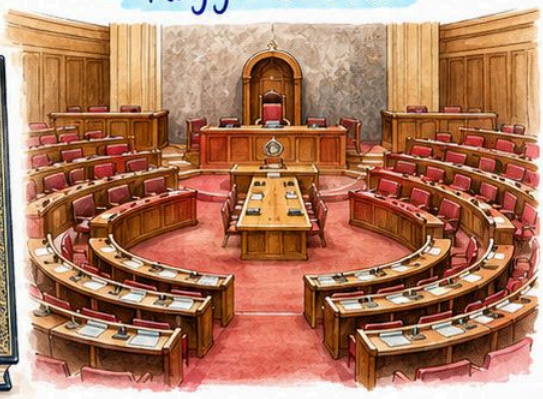
Two Houses: where powers are equal

Lok Sabha



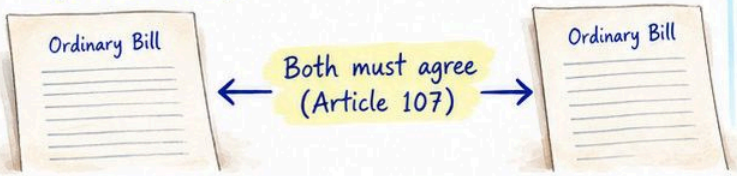


Rajya Sabha



Ordinary Bills

- Either House may introduce an ordinary bill.
- Both Houses must agree for it to be passed (Article 107).



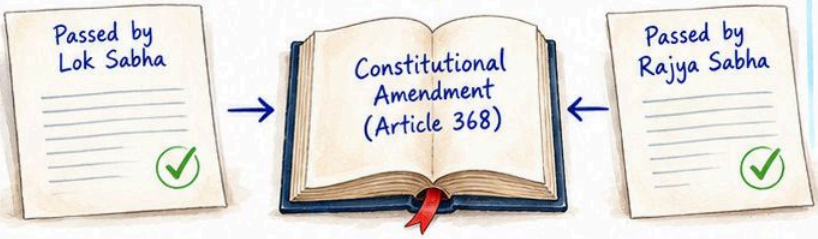
If an ordinary-bill deadlock

- If the two Houses do not agree on an ordinary bill, Article 108 may allow a joint sitting.



Constitutional amendment (Article 368)

- EACH House separately must pass by a majority of its total membership AND at least two-thirds of members present and voting.



No joint sitting for constitutional amendments

- There is no joint sitting for constitutional amendments.



Do not confuse Article 368 special majority with Articles 249 and 312: their resolutions use at least two-thirds present and voting.

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State Public Service Commission and the APPSC

1. Concept in one line

A State Public Service Commission is the body that the Constitution (Articles 315 to 323) sets up to conduct examinations for the State services and to advise the State Government on recruitment and disciplinary matters; for Andhra Pradesh it is the Andhra Pradesh Public Service Commission (APPSC). The examination asks who appoints, suspends and removes its members, how long they serve, what they may become afterwards, and how a State Commission differs from the Union Public Service Commission (UPSC) and a Joint Commission.

2. Revision notes

2.1 How a Commission comes into being: Article 315

- Part XIV of the Constitution, "Services under the Union and the States", has two Chapters: Chapter I, "Services" (Articles 308 to 314), and Chapter II, "Public Service Commissions" (Articles 315 to 323).
- **Article 315(1):** there shall be a Public Service Commission for the Union and a Public Service Commission for each State. So a State Commission is set up by the Constitution itself. The Commission for the Union is the UPSC (Topic 192).
- **Joint Commission, Article 315(2):** two or more States may agree to have one Commission for the group. The Legislature of each of those States must pass a resolution to that effect; where a Legislature has two Houses, each House must pass it. Parliament may then by law provide for a Joint State Public Service Commission (JSPSC), which the Constitution calls a "Joint Commission".
- The State Legislatures only pass resolutions. The law is made by Parliament. A Joint Commission is created by a parliamentary statute under Article 315(2); the UPSC and each State Commission are provided for directly by Article 315(1).
- **Article 315(4):** the UPSC may agree to serve all or any of the needs of a State, if the Governor of that State requests it and the President approves.

2.2 Appointment, strength and term: Articles 316 and 318

- **Appointment:** the Governor appoints the Chairman and the other members of a State Commission.
- **Strength:** the Constitution fixes no number. Under Article 318 the Governor makes regulations that determine the number of members and their conditions of service, and also the number of the Commission's staff and their conditions of service. A member's conditions of service "shall not be varied to his disadvantage after his appointment".

- **Who can be a member:** the Constitution lays down one rule only. As nearly as may be one-half of the members of every Commission must be persons who, at the time of appointment, have held office for at least ten years under the Government of India or the Government of a State. It prescribes no educational qualification and no minimum age.
- **Term:** six years from the date of entering office, or until the age of 62, whichever is earlier. The age was 60 until the 41st Amendment Act of 1976 made it 62. For the UPSC it is 65.
- **Resignation:** in writing, addressed to the Governor.
- **No second term:** when the term ends, a member is "ineligible for re-appointment to that office".
- **When the Chairman's office is vacant, or the Chairman cannot perform his duties:** one of the other members, appointed by the Governor for the purpose, performs those duties until a new Chairman takes charge or the Chairman resumes. This is Article 316(1A), inserted by the 15th Amendment Act of 1963. Such a member is commonly described as the acting Chairman.

2.3 Removal and suspension: Article 317

- A Chairman or member "shall only be removed from his office by order of the President", whatever the ground. The Governor appoints but cannot remove (Topic 4).

Ground of removal	Is a reference to the Supreme Court needed?
Misbehaviour, Article 317(1)	Yes. The President refers the matter to the Supreme Court. The Court holds an inquiry, by the procedure prescribed under Article 145. The President can pass the order only after the Court has reported that the member ought to be removed
Adjudged an insolvent, Article 317(3)(a)	No
Engages, during the term of office, in paid employment outside the duties of the office, Article 317(3)(b)	No
Unfit to continue in office, in the President's opinion, by reason of infirmity of mind or body, Article 317(3)(c)	No

- **Suspension, Article 317(2):** when a reference has been made about a member of a State Commission, the Governor may suspend that member until the President passes orders on the Supreme Court's report. For the UPSC and a Joint Commission, the President suspends.
- **One case deemed to be misbehaviour, Article 317(4):** a member is deemed guilty of misbehaviour if he is or becomes in any way concerned or interested in a contract or agreement made by or on behalf of the Government of India or the Government of a State, or shares in its profit or benefit. A benefit that reaches him only as a member of an incorporated company, in common with its other members, is the exception.

- Removal for misbehaviour requires a reference by the President and a Supreme Court inquiry under Article 317(1). The President may remove the Chairman or member on this ground only after the Court reports that the person ought to be removed. The separate grounds in Article 317(3) do not require that inquiry. This removal process is distinct from the Commission's recruitment and disciplinary advice to the Government, which is advisory.

2.4 After leaving office: Article 319

Person who has ceased to hold office	Offices still open
Chairman of the UPSC	None is listed: he is "ineligible for further employment either under the Government of India or under the Government of a State"
Chairman of a State Commission	Chairman or any other member of the UPSC; Chairman of any other State Commission
Member, other than the Chairman, of the UPSC	Chairman of the UPSC; Chairman of a State Commission
Member, other than the Chairman, of a State Commission	Chairman or any other member of the UPSC; Chairman of that or any other State Commission

- **What is barred:** in every row, any other employment under the Government of India or the Government of a State. For the Chairman of the UPSC this means all further employment under either Government.
- **How this fits with "no second term":** Article 316(3) bars re-appointment "to that office". A member of a State Commission who becomes its Chairman takes a different office, and Article 319 expressly allows it. For a former Chairman of a State Commission, Article 319 lists neither the chair of the same Commission nor membership of any State Commission.

2.5 Functions: Articles 320 and 321

- **Examinations, Article 320(1):** it is the duty of a State Commission to conduct examinations for appointments to the services of the State.
- **Consultation, Article 320(3):** the Commission "shall be consulted" on these five matters:
  - methods of recruitment to civil services and civil posts;
  - the principles to be followed in appointments, promotions and transfers from one service to another, and the suitability of candidates for them;
  - all disciplinary matters affecting a person serving the Government in a civil capacity, including memorials and petitions;
  - a claim by such a person for the costs of defending legal proceedings brought against him for acts done in the execution of his duty;
  - a claim for a pension for injuries sustained while serving, and the amount of the award.
- The Commission must also advise on any other matter that the Governor refers to it.

- **Limit 1, the Governor's regulations:** the Governor may make regulations specifying matters on which the Commission need not be consulted (proviso to Article 320(3)). The Governor does this for the services and posts of the State; the President does it for the all-India services and the services and posts of the Union. The regulations are laid before the House, or each House, of the State Legislature for not less than fourteen days, and the Legislature may amend or repeal them (Article 320(5)).
- **Limit 2, reservations (Article 320(4)):** the Commission need not be consulted on the manner in which a provision for reservation under Article 16(4) is made (Topic 73), or on the manner in which effect is given to Article 335. Article 335 is about the claims of the Scheduled Castes and the Scheduled Tribes to services and posts.
- **Limit 3, the advice is not binding:** no Article in the Chapter says that it is, and Article 323 itself provides for cases "where the advice of the Commission was not accepted". In State of U.P. v. Manbodhan Lal Srivastava (20 September 1957), five judges of the Supreme Court held that, although the Article says "shall be consulted", the provisions of Article 320(3)(c) "are not mandatory", and that non-compliance with them gives the public servant no cause of action in a court of law.
- **Additional functions, Article 321:** an Act made by the Legislature of the State may give the Commission additional functions. They may concern the services of the State, and also the services of a local authority, a body corporate constituted by law or a public institution. For the UPSC the Act is Parliament's.

2.6 Money and the annual report: Articles 322 and 323

- **Expenses:** the expenses of a State Commission, including the salaries, allowances and pensions of its members and staff, are charged on the Consolidated Fund of the State. Charged expenditure is not submitted to the vote of the Legislative Assembly, though the Legislature may discuss it (Article 203; Topic 54 explained the same rule for the Union).
- **UPSC expenses:** the expenses of the Union Commission are charged on the Consolidated Fund of India under Article 322.
- **Annual report:** every year the Commission presents a report on its work to the Governor. The Governor then causes a copy to be laid before the Legislature of the State, with a memorandum explaining the cases, if any, where the Commission's advice was not accepted, and the reasons.

2.7 The three kinds of Commission compared

Point	UPSC	State Commission	Joint Commission
How it is created	By Article 315(1)	By Article 315(1)	By a law of Parliament, after resolutions of the State Legislatures concerned
Who appoints the Chairman and members	President	Governor	President
Term	Six years or the age of 65, whichever is earlier	Six years or the age of 62, whichever is earlier	Six years or the age of 62, whichever is earlier

Point	UPSC	State Commission	Joint Commission
Who removes	President	President	President
Who may suspend, once a reference has been made	President	Governor	President
Annual report is presented to	President	Governor	Governor of each State it serves
Report is laid before	Each House of Parliament	Legislature of the State	Legislature of each State it serves

2.8 The APPSC

Date	What happened
1953	The composite Madras State was divided into Andhra and Madras States, and a Commission for Andhra State came into existence. It was the Andhra Public Service Commission
1 November 1956	The State of Andhra Pradesh was formed and the APPSC came into existence, with a Chairman and 3 members. The Andhra Commission then had a Chairman and 2 members, and the Hyderabad Public Service Commission of Hyderabad State had 1 member
23 April 1963	The Andhra Pradesh Public Service Commission Regulations, 1963 were issued by a Government Order (G.O.Ms.No.489, General Administration Department)
1981 to 1994	The strength was raised three times: to a Chairman and 5 members in 1981, 7 members in 1983 and 9 members in 1994. The Commission's website gives a Chairman and 9 members as the present strength
2 June 2014	The State was bifurcated. The existing Commission continued as the Commission for Andhra Pradesh

- **The Regulations** deal with the composition of the Commission, the conditions of service of the Chairman, members and staff, and the matters on which the Commission is or is not to be consulted. These are the subjects of Article 318 and of the proviso to Article 320(3).
- **Bifurcation:** Section 83 of the Andhra Pradesh Reorganisation Act, 2014 provided as follows.
    - The Commission of the existing (undivided) State became, on and from the appointed day, 2 June 2014, the Commission for the State of Andhra Pradesh. Its Chairman and members continued in office.

- Telangana was to constitute its own Commission under Article 315. Until then the UPSC could, with the approval of the President, agree to serve the needs of Telangana. This is Article 315(4) put to use.
- Telangana constituted its own Commission, the Telangana State Public Service Commission (TSPSC), in 2014 under Article 315. Its office is at Hyderabad, and its website now uses the name Telangana Public Service Commission (TGPSC). So the APPSC is the continuing body, and the new Commission of 2014 is Telangana's.

- **Seat:** the APPSC sits at Vijayawada. Its headquarters moved there after the bifurcation.
- **Chairman and members, as the Commission's portal showed them on 11 October 2026:**
  - The Chairman's office: the portal lists Prof. C. Sashidhar as Chairman (FAC), with 10 October 2025 as the date of assuming charge, and also as a member from 23 June 2025. A member holding charge of the Chairman's office is the kind of arrangement that Article 316(1A) provides for.
  - The other members, with the dates on which they assumed charge: P. Sudhir (3 May 2021), N. Sony Wood (22 April 2021), Dr B.S. Selina (26 June 2023), Dr C.V. Shankar Reddy (20 July 2023) and S. Sivaram (8 February 2024).
  - The Commission’s portal lists three member posts, Member-VII, Member-VIII and Member-IX, as vacant. It lists Prof. C. Sashidhar as Member-VI and as Chairman (FAC).
  - The portal carries no date of updating, and office holders change. Read the names again on the Commission's website before the examination.

3. Extra section: who does what for a State Public Service Commission

Authority	What it does	Articles
Governor	Appoints the Chairman and members. Appoints a member to perform the Chairman's duties when the office is vacant. Makes the regulations on the number of members and their conditions of service. Receives resignations. May suspend a member once a reference has been made. Refers matters for advice, and makes regulations on the matters where consultation is not necessary. Receives the annual report and causes it to be laid before the Legislature. May request the UPSC to serve the needs of the State	316, 318, 317(2), 320(3), 323(2), 315(4)

Authority	What it does	Articles
President	Refers a charge of misbehaviour to the Supreme Court. Removes the Chairman or a member by order. Approves the UPSC serving the needs of a State. Appoints the Chairman and members of a Joint Commission	317, 315(4), 316(1)
Supreme Court	Holds the inquiry on the President's reference and reports whether the member ought to be removed	317(1)
Legislature of the State	Passes the resolution for a Joint Commission. May amend or repeal the Governor's regulations on consultation. May give the Commission additional functions by an Act. Has the annual report and the memorandum laid before it	315(2), 320(5), 321, 323(2)
Parliament	Provides by law for a Joint Commission, after the resolutions of the State Legislatures	315(2)

How to read the table:

- Almost everything about a State Commission lies with the Governor. Removal is the exception: both the reference to the Supreme Court and the order of removal lie with the President. The power to suspend the member, once a reference has been made, is still the Governor's.
- The Supreme Court comes in on one ground only, misbehaviour.
- The Legislature of the State never appoints or removes anyone. It acts by resolution, by amending the regulations, by an Act, and by receiving the report.

4. Three common exam traps

1. **"The authority that appoints also removes."** It does not. The Governor appoints the Chairman and members of a State Commission, but removal is by order of the President alone. A second slip sits beside it: not every removal needs the Supreme Court. Only misbehaviour does. Insolvency, paid employment outside the office and infirmity of mind or body do not.
2. **Carrying the UPSC's figures over to the State.** The age limit is 62 for a State Commission and 65 for the UPSC, and in both the term is six years or the age limit, whichever is earlier, not whichever is later. The Constitution does not fix the number of members, and it sets no educational qualification. The "one-half" rule is about ten years in office under a Government, and its words are "as nearly as may be one-half", which is not the same as at least one-half.

3. **"Shall be consulted" read as "must be obeyed".** Article 320(3) says the Commission "shall be consulted", yet its advice does not bind the Government, and the Supreme Court has held Article 320(3)(c) to be not mandatory. In the same way, the annual report is presented to the Governor and not straight to the Legislature. And although the President removes the members, the expenses of a State Commission are charged on the Consolidated Fund of the State, not on that of India.

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S14 · Earlier topics of this programme, read for consistency: Topic 4, "Governor" (its sources include the official text of Part VI, https://www.mea.gov.in/Images/pdf1/Part6.pdf); Topic 14, "AP Reorganisation Act: economic provisions" (its sources include the Act, https://www.mha.gov.in/sites/default/files/APRegACT2014_0.pdf); Topic 42, "Salient features of the Constitution" (official text, https://cdnbbsr.s3waas.gov.in/

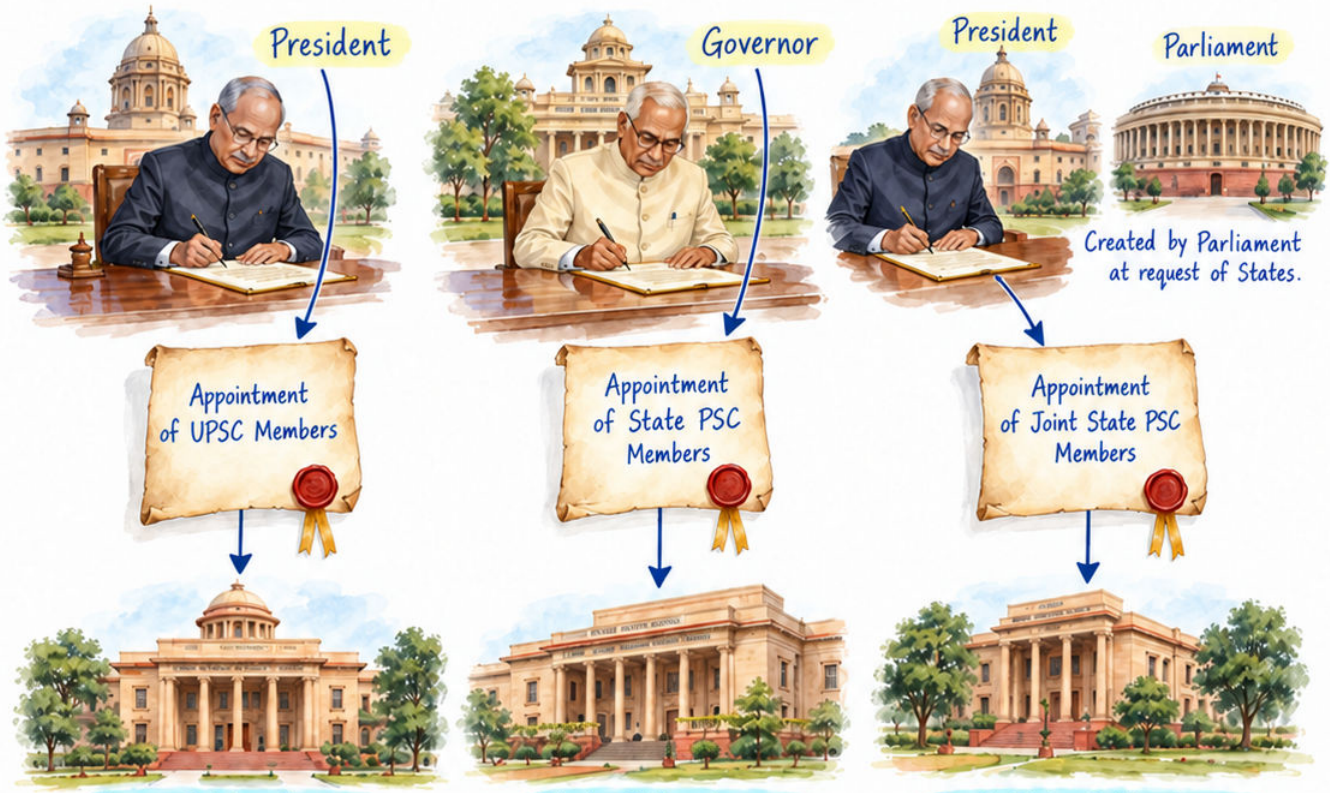
s380537a945c7aaa788ccfcdf1b99b5d8f/uploads/2024/07/20240716890312078.pdf); Topic 54, "Lok Sabha: composition, term and Speaker" (official text of Part V, https://www.mea.gov.in/Images/pdf1/Part5.pdf); Topic 73, "Right to Equality: Articles 14 to 18"

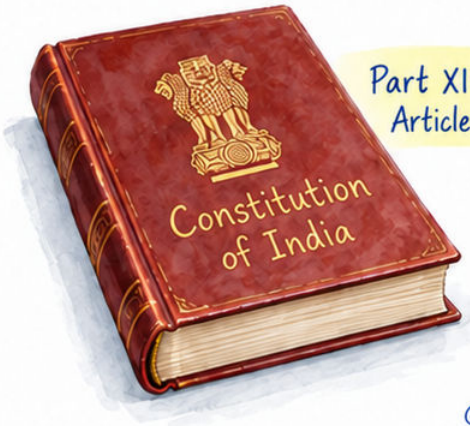
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Public Service Commissions: who appoints?





Part XIV, Articles 315 – 323.



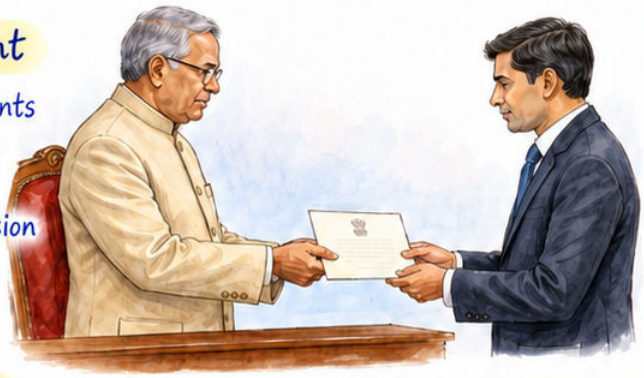
Roughly half of members must have held government office for at least ten years.

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Appointment is not removal

Appointment

Governor appoints members of the State Public Service Commission (State PSC).



Term of office

Six years or age 62, whichever earlier.



Resignation

A member of the State PSC can resign by writing to the Governor.



Suspension pending inquiry

For a State PSC, the Governor may suspend the member after the President refers the case to the Supreme Court, until the President passes orders on its report.



Removal

A member of the State PSC is removed by the President, not the Governor.



President (removal)

Grounds under Article 317

Misbehaviour (route: inquiry)



Supreme Court (inquiry)

The President may remove for misbehaviour after the Supreme Court, on inquiry, reports that the member ought to be removed.

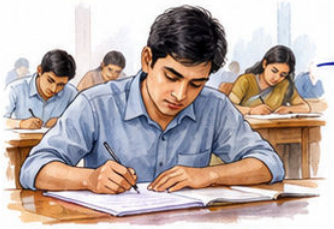
Other grounds (no inquiry mentioned)

- Insolvency
- Outside paid employment
- Infirmity

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Advice, recruitment and accountability

Examinations



Conducts examinations for recruitment to civil services and posts.

Recruitment advice



Tenders advice on recruitment to civil services and posts.

Promotion / transfer consultation



Consulted on promotion and transfer of civil servants.

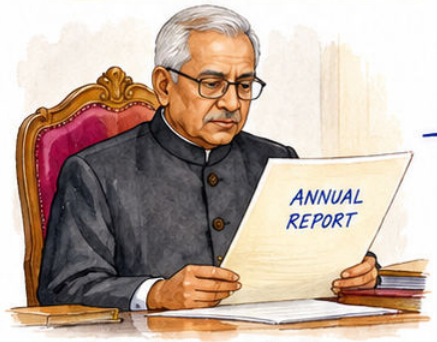
Disciplinary consultation



Consulted on disciplinary matters relating to civil servants.

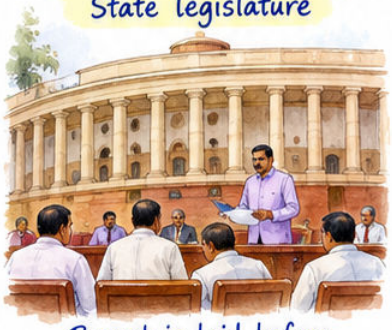
Advice is not automatically binding on the Government.

Annual report to Governor



Commission submits an annual report to the Governor.

Report laid before State legislature



Report is laid before the State legislature with reasons for rejected advice.

Commission expenses



Expenses of the Commission are charged on the State Consolidated Fund.

Article 320
Provides for the functions of the Public Service Commission.

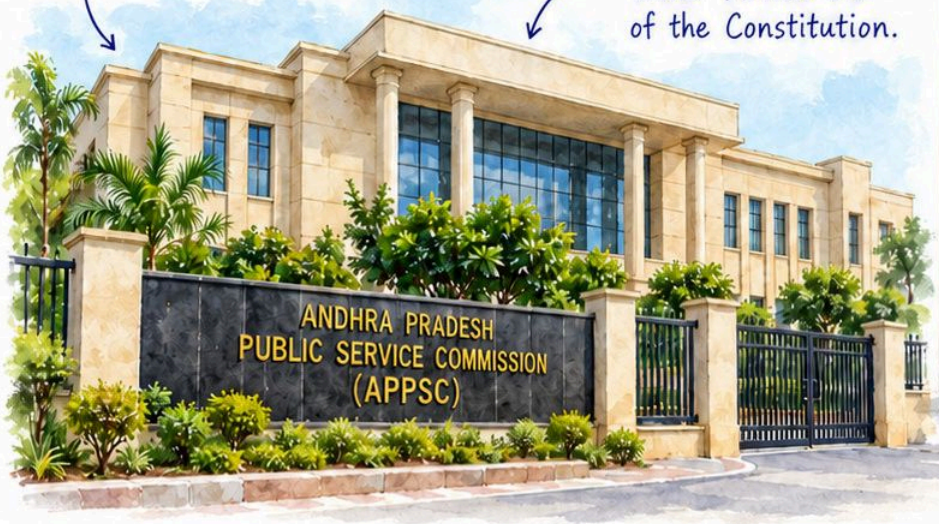
Article 323
Provides for the submission of the Commission's report to the Governor.

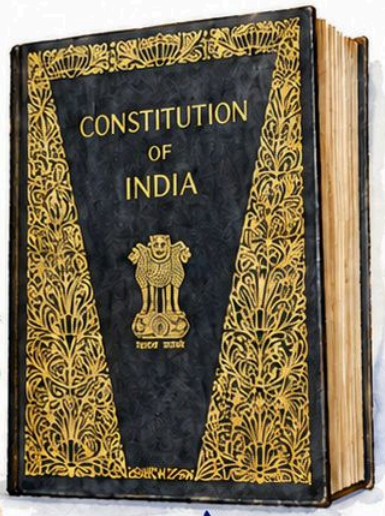
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APPSC: institution and safeguards

Established
1 November 1956

What is APPSC?
APPSC is a State PSC under Article 315 of the Constitution.





Article 315

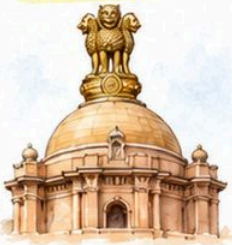
Core safeguards for a State PSC

Tenure



Members hold office for a fixed tenure.

Removal by President



Members can be removed by the President.

Expenses charged



Commission's expenses are charged on the Consolidated Fund of the State.

Limits on later government employment



There are limits on later government employment of members.

APPSC composition
As of 11 October 2026



Vacancies	
Member VII	1
Member VIII	1
Member IX	1

Three vacancies: Member VII–IX. Prof. C. Sashidhar was Member VI and Chairman FAC.

Appointments and vacancies can change.

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Minimum Support Price: how it is fixed and crops covered

1. Concept in one line

A minimum support price (MSP) is the price that the Central Government announces for each marketing season for 22 mandated crops, and at which its agencies buy when they procure. The exam asks who recommends and who decides it, which cost the "1.5 times" rule uses, which crops are covered, and how it differs from the Fair and Remunerative Price (FRP) of sugarcane.

2. Revision notes

2.1 What an MSP is, and what it is not

- An MSP is the assured price that the Central Government announces for a crop, and at which the crop is procured from farmers. It gives the farmer a floor price even if market prices fall.
- A farmer is not bound to sell at the MSP. The Ministry of Agriculture and Farmers Welfare said on 3 March 2020 that farmers are free to sell to the Government's procurement agencies at the MSP or in the open market, whichever is more advantageous to them.
- The MSP is decided by a committee of the Cabinet and then announced. It is not a legally binding price. The demand to make it one is noted in 2.8.
- Sugarcane has no MSP. Its price is the Fair and Remunerative Price (FRP), and it is the sugar mills that pay it. The Central Government fixes the FRP under the Sugarcane (Control) Order, 1966, and no sugar mill can buy cane from farmers below it. In 2009 the FRP took the place of the Statutory Minimum Price (SMP).

Point	MSP	FRP of sugarcane
Crops	The 22 mandated crops	Sugarcane alone
Who recommends	Commission for Agricultural Costs and Prices (CACP)	CACP
Who approves	Cabinet Committee on Economic Affairs (CCEA)	CCEA
Period it is fixed for	A marketing season: the kharif marketing season (KMS) or the rabi marketing season (RMS); raw jute and copra have their own seasons	A sugar season, from October to September

Point	MSP	FRP of sugarcane
What it is tied to	The all-India weighted average cost of production of the crop: at least 1.5 times that cost	A basic recovery rate (10.25 per cent for 2026-27), with a premium above it and a cut below it. The recovery rate is the share of sugar got from the cane, as a percentage
Who pays	Government agencies, on what they procure	Sugar mills, on the cane they take from farmers

2.2 The Commission for Agricultural Costs and Prices (CACP)

- **August 1964:** the Government appointed a committee under the chairmanship of L.K. Jha (the Jha Committee).
- **January 1965:** the Agricultural Prices Commission (APC) was set up on the basis of the recommendations of the Jha Committee.
- **1985:** the APC was renamed the Commission for Agricultural Costs and Prices.
- **Standing:** an attached office of the Ministry of Agriculture and Farmers Welfare. It is an advisory body: it recommends, and the Government decides.
- **Composition, as its own page gives it:** a Chairman, a Member Secretary, one official member and two non-official members. The two non-official members represent the farming community.

2.3 How an MSP is fixed

- **Five reports a year.** The CACP sends the Government a separate price policy report for each of five groups of commodities: kharif crops, rabi crops, sugarcane, raw jute and copra.
- **Factors the CACP weighs** (list of the Press Information Bureau, PIB, 10 October 2025):
  1. the cost of production;
  2. demand and supply, at home and in the world;
  3. domestic and international prices;
  4. inter-crop price parity, that is, a fair balance between the prices of different crops;
  5. the terms of trade between agriculture and non-agriculture;
  6. the likely effect on the rest of the economy;
  7. a minimum of 50 per cent as the margin over the cost of production.
- **Views of others.** Before it writes a report, the CACP consults State Governments, Central Ministries, farmers and bodies such as the Food Corporation of India (FCI). After the report comes in, the Government asks the State Governments and the Central Ministries concerned for their comments.
- **Decision.** The Cabinet Committee on Economic Affairs takes the final decision on the level of the MSPs. The steps are set out in Section 3.

2.4 The three costs and the "1.5 times" rule

Cost	What it includes	How it is used
A2	The costs that the farmer actually pays out: hired human labour, bullock and machine labour, rent paid for leased-in land, seeds, fertilisers, manures, irrigation charges, depreciation on implements and farm buildings, interest on working capital, diesel or electricity for pump sets, and miscellaneous expenses	It is the base of the other two
A2+FL	A2 plus the imputed value of family labour (FL), that is, a value put on the unpaid work of the farmer's family	The margin of at least 50 per cent is counted on this cost
C2	A2+FL plus the rental value of the farmer's own land and the interest on the farmer's own fixed capital	The CACP uses it as a benchmark reference cost (an opportunity cost)

- Each cost contains the one before it. So, for the same crop, C2 is the highest of the three and A2 the lowest.
- **The rule of 2018-19.** The Union Budget of 2018-19 announced that the MSP would be kept at no less than one and a half times the cost of production. PIB's releases word it as at least 1.5 times the all-India weighted average cost of production.
- **Which cost?** A2+FL. The Ministry said on 3 March 2020 that the CACP reckons only the A2+FL cost for the return. It uses C2 mainly to see whether the MSP it recommends at least covers C2 in some of the major producing States.
- **The Swaminathan Commission.** The National Commission on Farmers (NCF), headed by M.S. Swaminathan, gave its report in 2006. Its words, as the Ministry gave them on 12 December 2018, are that the MSP "should be at least 50 percent more than the weighted average cost of production". The sentence names neither A2+FL nor C2. The same release says that the National Policy for Farmers, 2007 did not include this recommendation.
- **For the exam:** a statement that the present MSP is at least 1.5 times A2+FL is right. A statement that it is 1.5 times C2 is wrong.
- **Check with paddy (Common), 2026-27:** the cost is Rs 1,627 a quintal. 1.5 × 1,627 = 2,440.5. The MSP is Rs 2,441, a margin of 50 per cent.

2.5 The crops covered

Group	Number	Crops
Kharif crops	14	Paddy, jowar, bajra, ragi, maize; tur (arhar), moong, urad; groundnut, sunflower seed, soyabean (yellow), sesamum, nigerseed; cotton
Rabi crops	6	Wheat, barley; gram, lentil (masur); rapeseed and mustard, safflower
Commercial crops	2	Raw jute, copra
All mandated crops	22	The three groups above taken together

- **Sugarcane makes 23.** The CACP's own page speaks of 23 commodities: 7 cereals, 5 pulses, 7 oilseeds and 4 commercial crops (copra, sugarcane, cotton and raw jute). The two lists do not clash. The CACP groups by kind of crop and so puts cotton with the commercial crops; the PIB list groups by season and puts cotton under kharif. Take sugarcane out of the 23 and the 22 MSP crops remain.
- **Two more prices that follow from these.** The MSP of toria is fixed on the basis of the MSP of rapeseed and mustard. The MSP of de-husked coconut is fixed on the basis of the MSP of copra.
- **More than one price for some crops:** paddy (Common and Grade A), jowar (Hybrid and Maldandi), cotton (Medium Staple and Long Staple) and copra (Milling and Ball).
- Topic 55 listed jute among the kharif crops, following NCERT. In price policy, raw jute is kept apart as a commercial crop with a report of its own.

2.6 The prices as on 11 October 2026

All prices are in rupees per quintal.

Kharif marketing season 2026-27 (approved by the CCEA; PIB release of 13 May 2026)

Crop	MSP 2025-26	MSP 2026-27	Increase	Cost 2026-27	Margin over cost
Paddy (Common)	2,369	2,441	72	1,627	50 per cent
Paddy (Grade A)	2,389	2,461	72	Not worked out separately	Not given
Sunflower seed	7,721	8,343	622, the highest increase	5,562	50 per cent

Crop	MSP 2025-26	MSP 2026-27	Increase	Cost 2026-27	Margin over cost
Cotton (Medium Staple)	7,710	8,267	557	5,511	50 per cent
Moong	8,768	8,780	12	5,438	61 per cent, the highest margin of all the kharif crops
Bajra	2,775	2,900	125	1,858	56 per cent
Maize	2,400	2,410	10, the lowest increase in the table of the release	1,544	56 per cent

Rabi crops: two marketing seasons

Crop	RMS 2026-27 (approved on 1 October 2025)	RMS 2027-28 (PIB release of 30 September 2026)	Increase	Margin over cost, RMS 2027-28
Wheat	2,585	2,610	25	106 per cent
Barley	2,150	2,286	136	58 per cent
Gram	5,875	5,958	83	59 per cent
Lentil (masur)	7,000	7,390	390	92 per cent
Rapeseed and mustard	6,200	6,613	413	96 per cent
Safflower	6,540	7,215	675	50 per cent

- For RMS 2027-28 the highest increase is for safflower and the lowest for wheat. The highest margin is for wheat.

Raw jute, copra and sugarcane

Commodity	Price	Season	Points to note
Raw jute (TD-3 grade)	5,925	2026-27 season	PIB release of 24 February 2026. It is Rs 275 more than for 2025-26, and gives a return of 61.8 per cent over cost

Commodity	Price	Season	Points to note
Copra	Milling copra 12,027; ball copra 12,500	2026 season	Approved by the CCEA on 12 December 2025. Milling copra is Rs 445 more, and ball copra Rs 400 more, than for the 2025 season
Sugarcane (FRP)	365, at a basic recovery rate of 10.25 per cent	Sugar season 2026-27 (October to September)	PIB release of 5 May 2026. It is 2.81 per cent more than for 2025-26

- **How the FRP moves with recovery:** the FRP of Rs 365 a quintal is for the basic recovery rate of 10.25 per cent. A premium of Rs 3.56 a quintal is added for every 0.1 percentage point of recovery above 10.25 per cent, and Rs 3.56 a quintal is cut for every 0.1 point below it. The cut stops at a recovery of 9.5 per cent, for which the price is Rs 338.30 a quintal. At mills where recovery is below 9.5 per cent no further cut is made: farmers there also get Rs 338.30 a quintal.

2.7 How the price is made real: procurement and PM-AASHA

- **Wheat, paddy and coarse cereals:** the Food Corporation of India and the designated State agencies. Under the decentralised procurement (DCP) scheme, the State Government itself procures the grain, stores it and issues it for the public distribution system; the FCI takes only the surplus and makes up any shortfall.
- **Pulses, oilseeds and copra:** the National Agricultural Cooperative Marketing Federation of India (NAFED) and the National Cooperative Consumers' Federation of India (NCCF), under the Price Support Scheme.
- **Cotton:** the Cotton Corporation of India (CCI). **Jute:** the Jute Corporation of India (JCI), the Central nodal agency for price support operations in jute; the Central Government makes good its losses in full, if any. PIB's note says there is no maximum quantity for either.
- **PM-AASHA** (Pradhan Mantri Annadata Aay Sanrakshan Abhiyan) was launched in September 2018. PIB's note of 21 August 2026 gives four components.

Component	What it does
Price Support Scheme (PSS)	It buys pulses, oilseeds and copra at the MSP when the market price falls below the MSP at harvest time. NAFED and NCCF buy, at the request of the State Government, from registered farmers with valid land records. From 2024-25, purchases are allowed at first up to 25 per cent of the production of the State or Union Territory; beyond that, the Committee of Secretaries may approve purchases up to 25 per cent of national production. For tur, urad and masur, purchases are allowed up to 100 per cent of the State's production

Component	What it does
Price Deficiency Payment Scheme (PDPS)	It is used mainly for oilseeds. Nothing is bought from the farmer. The farmer is paid the gap between the MSP and the market price in the notified market, up to 15 per cent of the MSP value, straight into the bank account
Price Stabilisation Fund (PSF)	It keeps buffer stocks of pulses, onions and potatoes: they are bought at harvest and released in the lean season to check a sharp rise in prices. The Department of Consumer Affairs manages it
Market Intervention Scheme (MIS)	It is for perishables such as tomato, onion and potato, which have no MSP. It comes into play when the market price falls at least 10 per cent below that of the previous normal season. The Centre and the States share the cost

2.8 The issues, in a line each

- **Few crops.** The MSP is announced for 22 crops, but purchases are mainly of wheat and rice. In 2024-25 the Government procured 23 per cent of the wheat and 49 per cent of the rice produced, as PRS gives it (PRS Legislative Research, analysis of the Budget of 2026-27).
- **Few States.** The same analysis says that Punjab, Madhya Pradesh, Haryana and Rajasthan alone gave 96 per cent of the wheat procured, and that Punjab, Chhattisgarh, Telangana and Odisha gave 59 per cent of the rice procured.
- **Few farmers.** The High Level Committee on the restructuring of the FCI, headed by Shanta Kumar, was set up on 20 August 2014 and gave its report on 21 January 2015. It found that the farmers who sold wheat and paddy directly to a procurement agency were "only 6 percent of total farmers in the country". It also asked for better price support for pulses and oilseeds.
- **Cropping pattern and groundwater.** The Standing Committee on Water Resources (2023) linked the over-extraction of groundwater in Punjab, Haryana, Rajasthan, Karnataka, Tamil Nadu and Uttar Pradesh mainly to paddy and sugarcane. Assured procurement of certain crops is one of the causes it names. The committee on doubling farmers' income (the DFI Committee, 2018) recommended a shift to crops that need less water, such as maize, pulses and oilseeds.
- **Demand for a legal guarantee.** The Standing Committee on Agriculture of Parliament recommended in 2024 that a legally binding MSP system be implemented in the country. The DFI Committee had said that legalising the MSP for all crops may lead to higher retail inflation. In July 2022 the Government constituted a committee of stakeholders on three subjects: making the MSP more effective and transparent, natural farming, and crop diversification.
- **The WTO limit.** The rules of the World Trade Organization (WTO) limit trade-distorting domestic support. At Bali in 2013, WTO ministers agreed on an interim peace clause for developing countries. Subject to its conditions, members refrain from challenging support for traditional staple food crops under public stockholding programmes for food security existing

on 7 December 2013, in relation to the domestic-support limits in Articles 6.3 and 7.2(b) of the Agreement on Agriculture. A decision of the WTO's General Council in 2014 confirmed that it remains in force until a permanent solution is agreed.

- **Andhra Pradesh.** The Shanta Kumar committee named Andhra Pradesh among six States (with Chhattisgarh, Haryana, Madhya Pradesh, Odisha and Punjab) that have enough experience and infrastructure to take over the procurement of wheat, paddy and rice, with the FCI accepting only their surplus. A PIB release of 15 December 2015 lists Andhra Pradesh among the DCP States for rice.

Covered on other days: the Green Revolution (Topic 185), the National Food Security Act and the public distribution system (Topic 214), India and the WTO, with its limits on price support (Topic 324), crop insurance and PM-KISAN (Topic 363), agricultural marketing and e-NAM (Topic 443), and buffer stock, the FCI and food subsidy (Topic 564).

3. Extra section: the path of an MSP, step by step, and the calendar of the latest decisions

The steps

Step	Who acts	What happens
1	CACP	It sends a questionnaire to State Governments, national organisations and Central Ministries
2	CACP	It holds meetings with farmers, State Governments, bodies such as FCI, NAFED, CCI and JCI, organisations of traders and processors, and Central Ministries. It also visits States
3	CACP	It weighs the factors of 2.3, finalises the price policy report with the MSPs it recommends, and submits it to the Government
4	Government	It sends the report to the State Governments and the Central Ministries concerned for their comments
5	CCEA	It takes the final decision on the level of the MSPs, and the decision is announced
6	Procurement agencies	FCI and the State agencies, NAFED and NCCF, CCI and JCI buy at the MSP, each for its own crops

Step	Who acts	What happens
7	CACP	It puts its reports on its website, with the reasons for its recommendations

The calendar of the latest decisions of the CCEA (as on 11 October 2026)

Decision	Date of the PIB release	Season it is for
MSPs of copra	12 December 2025	2026 season
MSP of raw jute	24 February 2026	2026-27 season
FRP of sugarcane	5 May 2026	Sugar season 2026-27
MSPs of the kharif crops	13 May 2026	Kharif marketing season 2026-27
MSPs of the rabi crops	30 September 2026	Rabi marketing season 2027-28

- The five decisions come at five different times of the year, and each follows its own report from the CACP.
- The year in the name is the year of marketing. The rabi prices announced on 30 September 2026 carry the label 2027-28.

4. Three common exam traps

1. **"The MSP is a price guaranteed by law."** It is not. The Central Government announces it for each season, and the farmer may sell at it to a government agency or sell in the open market. Announcing a price is also not the same as buying the crop: the price is announced for 22 crops, but in 2024-25, as PRS gives it, the Government procured 23 per cent of the wheat and 49 per cent of the rice produced. For sugarcane the term is FRP, not MSP, and the sugar mills pay it.
2. **"The MSP is one and a half times the C2 cost."** The rule of the Union Budget of 2018-19 is counted on the all-India weighted average cost of production, and the cost used is A2+FL. C2 is the highest of the three costs. So a margin of 50 per cent over A2+FL is a smaller margin over C2.
3. **"The CACP fixes the MSP", and the wrong count of crops.** The CACP only recommends the MSP; the Cabinet Committee on Economic Affairs decides it. The MSP is for 22 mandated crops: 14 kharif, 6 rabi and 2 commercial. The figure 23 comes only when sugarcane, which has an FRP, is added. Do not reverse the 14 and the 6.

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Full source-use descriptions are retained in the complete HTML review copy.

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MSP: recommendation to procurement

1. CACP recommends



CACP recommends MSP for 22 mandated crops.

2. Union Government approves



Union Government approves MSP based on CACP's recommendations.

3. Procurement agencies buy



Procurement agencies buy at MSP under scheme rules.

22 mandated crops



MSP is announced for 22 mandated crops.

Sugarcane is different



Sugarcane uses FRP, not MSP.

Farmer's choice



Farmer can choose to sell either in the market or at a procurement centre.

Important point



Announcement of MSP does not mean unlimited guaranteed procurement of every crop.

Different concepts

Price support (MSP)



A declared minimum price for a crop.

Procurement



Actual purchase by procurement agencies under scheme rules.

Food stocks



Grain kept in government stocks after procurement.

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A2, A2+FL and C2: what is counted?

A2 paid-out costs

Includes actual paid-out costs incurred by the farmer.



A2 paid-out costs



A2+FL



C2 additional components

C2

Policy margin

at least 50% over all-India weighted average A2+FL since 2018–19.



C2 and A2+FL are different bases.

C2 includes owned-land rent and interest on owned fixed capital, in addition to A2+FL components.

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Which crops receive price support?

14 kharif crops (receive MSP)





Total: 14 kharif crops receive MSP.

6 rabi crops (receive MSP)



Toria → Toria is linked to rapeseed/mustard (not a separate mandated MSP crop).

Total: 6 rabi crops receive MSP.

2 other crops (receive MSP)



Total: 2 other crops receive MSP.

Sugarcane (FRP)



Sugarcane receives FRP (not MSP).

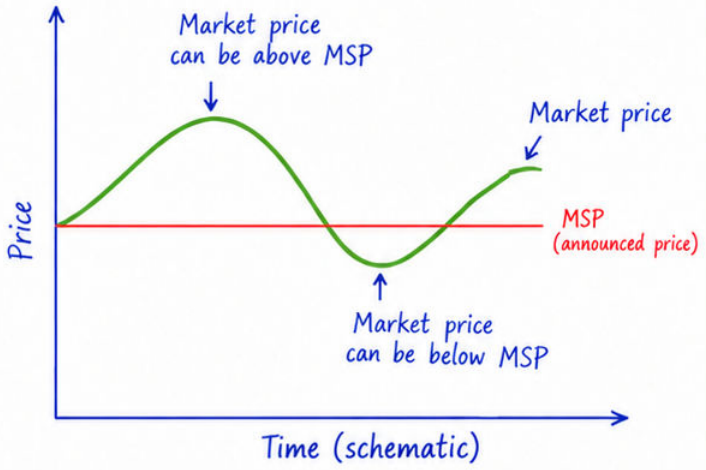
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Why MSP and market price can differ



Market price can be above or below MSP



Why differences arise



Access to procurement
Only part of the produce is procured at MSP. Farmers may not always have access to procurement.



Quality norms
Procurement is subject to quality norms. Produce not meeting the specified quality may not be procured at MSP.



Crop coverage
MSP is announced for specific crops. Not all crops are covered.

Food security stockholding



WTO peace clause



- Conditional and limited.
- Covers traditional staple food crops.
- Applies under eligible programmes existing on 7 December 2013.
- Relates to specified domestic-support obligations.
- Not a blanket immunity or unlimited procurement.

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GST: structure, GST Council and rate slabs

1. Concept in one line

The Goods and Services Tax (GST) is a destination-based tax on the supply of goods and services, paid at every stage with credit for the tax paid at the stage before, and levied by the Union and the States side by side on the recommendations of the GST Council. The exam asks for the Articles that the 101st Amendment brought in, the make-up and voting of the Council, the four taxes of the dual structure, what is kept outside GST, and the rates in force.

2. Revision notes

2.1 What GST is

- **GST:** a single comprehensive indirect tax on the supply of goods and services. NCERT calls it a destination-based consumption tax with the facility of input tax credit (ITC).
- **How it works:** the tax is paid at every stage of supply, and the tax paid at the previous stage is available as credit to be set off at the next stage. So it is, in effect, a tax on the value added at each stage (NCERT).
- **The Constitution's definition, Article 366(12A):** "goods and services tax" means any tax on the supply of goods, or services or both, except taxes on the supply of the alcoholic liquor for human consumption.
- **Two dates (as in Topic 64):** the Constitution (One Hundred and First Amendment) Act, 2016 received the President's assent on 8 September 2016. GST was rolled out at midnight between 30 June and 1 July 2017 and has been in force from 1 July 2017.

2.2 What the 101st Amendment did to the Constitution

Article	Change	What it provides
246A	Inserted	Parliament and, subject to clause (2), the Legislature of every State have power to make laws on GST imposed by the Union or by that State. Clause (2): Parliament has exclusive power to make laws on GST where the supply takes place in the course of inter-State trade or commerce

Article	Change	What it provides
269A	Inserted	GST on supplies in the course of inter-State trade or commerce is levied and collected by the Government of India and apportioned between the Union and the States, as Parliament provides by law on the recommendations of the GST Council. A supply in the course of import into India is deemed to be a supply in the course of inter-State trade or commerce
279A	Inserted	The GST Council (see 2.5). Under clause (5) the Council shall recommend the date on which GST is to be levied on petroleum crude, high speed diesel, petrol, natural gas and aviation turbine fuel
366	Clauses (12A), (26A) and (26B) inserted	Definitions. (12A): GST, which leaves out taxes on the supply of alcoholic liquor for human consumption. (26A): "services" means anything other than goods. (26B): for the GST Articles, "State" includes a Union territory with a Legislature
268 and 270	Amended	Article 268 no longer covers duties of excise on medicinal and toilet preparations, and Article 268A (inserted in 2003) was omitted. Under Article 270(1A) the GST that the Union collects under Article 246A(1) is also distributed between the Union and the States

Article	Change	What it provides
Seventh Schedule	Entries changed	Union List entry 84 now covers duties of excise on the five petroleum products named above and on tobacco and tobacco products only; entries 92 and 92C were omitted. State List entry 54 now covers taxes on the sale of the same five petroleum products and of alcoholic liquor for human consumption only; entries 52 and 55 were omitted; entry 62 now covers entertainment taxes levied by local bodies such as panchayats and municipalities only

- **Both make GST laws:** Article 246A gives the power to Parliament and to every State Legislature at the same time. This is why the power is described as concurrent, or simultaneous. It comes from Article 246A itself, the special provision for GST that Topic 64 noted.
- **Two pairs to keep apart.** (a) Articles 246A(2) and 269A both speak of inter-State supply: the first says who makes the law, the second says who levies the tax and how it is shared. (b) Alcoholic liquor is kept out by the definition in Article 366(12A); the five petroleum products are dealt with by Article 279A(5), which leaves the date to the Council.

2.3 The dual structure: four taxes

Tax	Levied by	On what supply	Law
Central GST (CGST)	Union	A supply within a State (intra-State supply), along with SGST	CGST Act, 2017, a law of Parliament
State GST (SGST)	The State	The same intra-State supply, along with CGST	The SGST Act of each State, a law of its Legislature
Union Territory GST (UTGST)	Union	The counterpart of SGST in the Union territories without a Legislature	UTGST Act, 2017, a law of Parliament
Integrated GST (IGST)	Union (levied and collected by the Government of India, then apportioned)	A supply between States (inter-State supply), and imports	IGST Act, 2017, a law of Parliament

- **The Acts of 2017:** the CGST, IGST, UTGST and GST (Compensation to States) Bills were passed by the Lok Sabha on 29 March 2017 and by the Rajya Sabha on 6 April 2017, and became Acts on 12 April 2017.

- **Union territories:** because of Article 366(26B), a Union territory with a Legislature counts as a "State" for GST. So Delhi, Puducherry and Jammu and Kashmir, which have Legislatures, levy SGST under their own SGST Acts. UTGST applies only in the Union territories without a Legislature. The UTGST Act names five: the Andaman and Nicobar Islands; Lakshadweep; Dadra and Nagar Haveli and Daman and Diu; Ladakh; Chandigarh.
- **Imports:** an import is treated as an inter-State supply, so it bears IGST. Customs duty itself was not merged into GST (Topic 64).

2.4 Exclusions, exemptions and taxes replaced by GST

Item	Position
Alcoholic liquor for human consumption	Outside GST by the definition in Article 366(12A). The States tax it: State excise duty, and sales tax or VAT under State List entry 54 (Topic 64)
Petroleum crude, high speed diesel, petrol, natural gas, aviation turbine fuel	GST is to be levied on them from the date that the Council recommends (Article 279A(5)). Until then the Union's excise duty (Union List entry 84) and the States' sales tax or VAT (State List entry 54) continue
Tobacco and tobacco products	Inside GST, and they bear the Union's excise duty as well
Electrical energy	Exempt from GST (HSN 2716 00 00)

- **Taxes that GST replaced (NCERT):** of the Union, central excise duty, service tax, central sales tax and cesses such as the Krishi Kalyan Cess and the Swachh Bharat Cess. Of the States, VAT or sales tax, entry tax, luxury tax, octroi, entertainment tax, taxes on advertisements, taxes on lottery, betting and gambling, and State cesses on goods.

2.5 The GST Council (Article 279A)

Point	What Article 279A says
Who constitutes it	The President, within sixty days of the commencement of the Amendment
Chairperson	The Union Finance Minister
Members	The Union Minister of State in charge of Revenue or Finance, and the Minister in charge of Finance or Taxation, or any other Minister, nominated by each State Government
Vice-Chairperson	The Ministers from the States choose one amongst themselves
Quorum	One-half of the total number of members

Point	What Article 279A says
How a decision is taken	By a majority of not less than three-fourths of the weighted votes of the members present and voting
Weight of the votes	The vote of the Central Government: one-third. The votes of all the State Governments taken together: two-thirds
Procedure	The Council determines its own procedure
Disputes	The Council shall establish a mechanism to adjudicate disputes between the Government of India and one or more States, or between States

- **What follows from the weights:** three-fourths is more than two-thirds, so neither the Centre alone nor all the States together can carry a decision. The Council's own page says its decisions are generally reached by consensus.
- **What it recommends (clause 4):** the taxes, cesses and surcharges to be merged in GST; the goods and services to be taxed or exempted; model GST laws and principles of levy; the turnover threshold below which GST is exempted; the rates, including floor rates with bands; a special rate or rates for a specified period to raise additional resources during a natural calamity or disaster; special provisions for eleven States named in the clause, among them Assam, Sikkim, Himachal Pradesh and Uttarakhand; and any other matter relating to GST.
- **Guiding aim (clause 6):** the need for a harmonised structure of GST.
- **Setting up:** Article 279A came into force on 12 September 2016. The Secretary (Revenue) is the ex-officio Secretary of the Council, and its Secretariat is in New Delhi.
- **Nature of its recommendations:** in Union of India v. Mohit Minerals (19 May 2022) the Supreme Court held that the Council's recommendations are not binding on Parliament or on the State Legislatures; they are recommendatory and have persuasive value.
- **Meetings:** the first was held on 22 and 23 September 2016 in New Delhi. The 56th was held on 3 September 2025 in New Delhi. The 57th, the latest as on 11 October 2026, was held on 8 October 2026 in New Delhi, with Union Finance Minister Nirmala Sitharaman in the chair.

2.6 The rates: before and after 22 September 2025

Point	Before 22 September 2025	From 22 September 2025 (in force as on 11 October 2026)
Main rates	Four tiers: 5, 12, 18 and 28 per cent	Two main rates: a merit rate of 5 per cent and a standard rate of 18 per cent; selected supplies bear the special rate of 40 per cent

Point	Before 22 September 2025	From 22 September 2025 (in force as on 11 October 2026)
Highest rate	28 per cent, with the GST compensation cess on top for some goods	A special rate of 40 per cent on a select few goods and services, mostly sin goods and a few luxury goods, with no compensation cess
GST compensation cess	Levied on some goods, such as coal and motor cars	Ended and merged into the GST rates. The tobacco group followed on 1 February 2026

- **The decision:** the 56th meeting (3 September 2025) recommended the change. The official release calls the 40 per cent rate a "special de-merit rate"; the Council's questions and answers call it a "special rate".
- **Examples from the release:** nil: ultra-high temperature milk, pre-packaged and labelled paneer, chapati or roti, and 33 lifesaving drugs. 5 per cent: hair oil, toilet soap, toothpaste, bicycles, ghee, tractors. 18 per cent: air-conditioners, television sets, small cars, cement. 40 per cent: pan masala and specified tobacco products, caffeinated beverages, motorcycles above 350 cc, yachts.
- **Exempt:** all individual life insurance policies and all individual health insurance policies.
- **The tobacco group:** on pan masala, gutkha, cigarettes, chewing tobacco such as zarda, unmanufactured tobacco and bidi, the old rates and the compensation cess were to continue until the loan and interest obligations of the compensation cess account were discharged. By notifications of 31 December 2025 the Government fixed 1 February 2026 as the date of change. From that date pan masala, cigarettes and tobacco products bear GST at 40 per cent and bidis at 18 per cent. An additional excise duty on tobacco products and a new cess on pan masala (the Health Security se National Security Cess), both over and above GST, replaced the compensation cess on these goods.
- **Special low rates:** 3 per cent on gold and 0.25 per cent on rough precious and semi-precious stones.
- **The 57th meeting (8 October 2026)** did not change the structure of three rates (5, 18 and 40 per cent). Most of its recommendations are about procedure, and they take effect only through notifications, circulars or changes in the law.
- **A caution on textbooks:** NCERT's box on GST still prints the older rates (0, 3, 5, 12, 18 and 28 per cent).

2.7 Other parts of the system

Part	In one line
Registration threshold	A supplier below a turnover limit need not register. As decided at the 32nd meeting (10 January 2019) and in force from 1 April 2019: for goods, Rs 40 lakh or Rs 20 lakh, as the State chose; for services, Rs 20 lakh, and Rs 10 lakh in the special category States

Part	In one line
Composition scheme	A simpler option for small taxpayers: one annual return and tax paid every quarter. Turnover limit for goods: Rs 1.5 crore. For service providers: up to Rs 50 lakh, at 6 per cent (3 per cent CGST and 3 per cent SGST)
Input tax credit	Credit for the tax paid at the previous stage, set off against the tax due at the next stage
Reverse charge	The recipient of the supply, not the supplier, pays the tax to the government
E-way bill and e-invoice	An e-way bill is an electronic bill needed to move goods worth more than Rs 50,000. E-invoicing generally applies to notified registered persons whose aggregate turnover exceeded Rs 5 crore in any financial year from 2017-18 onwards, for B2B and export invoices, subject to notified exclusions
GST Network (GSTN)	A non-profit body that runs the common GST portal. It is now a wholly government-owned company in which the Centre and the States hold equal shares
Anti-profiteering	Section 171 of the CGST Act: the gain from a cut in the tax rate or from input tax credit must be passed on to buyers through lower prices. Forum: the National Anti-profiteering Authority (set up in November 2017), then the Competition Commission of India (from 1 December 2022), and then the Principal Bench of the GST Appellate Tribunal (from 1 October 2024). No new complaint is accepted from 1 April 2025; the pending ones continue before the Tribunal
GST Appellate Tribunal (GSTAT)	The appeal body under the GST laws. The Union Finance Minister launched it in New Delhi on 24 September 2025. It works through a Principal Bench in New Delhi and 31 State Benches. The Council's release of 3 September 2025 said it would start accepting appeals before the end of September 2025 and start hearings before the end of December 2025
Compensation to States	Section 18 of the 101st Amendment: Parliament, by law, on the Council's recommendation, provides compensation to the States for five years for loss of revenue from GST. That law is the GST (Compensation to States) Act, 2017 (details in Topic 814)

2.8 Revenue

- **2025-26 (full year):** gross GST collection of over Rs 22.27 lakh crore, 8.3 per cent more than in 2024-25. Net of refunds it was Rs 19.34 lakh crore, up 7.1 per cent (government data released on 1 April 2026).
- **September 2026 (the latest month as on 11 October 2026):** gross collection of Rs 2,03,521 crore (about Rs 2.04 lakh crore), 14.7 per cent more than the Rs 1,77,365 crore (about Rs 1.77 lakh crore) of September 2025 (provisional data released on 1 October 2026).
- **April to September 2026:** gross collection of Rs 12.46 lakh crore, up 11.6 per cent.
- These are the collections of the Centre and the States together (CGST, SGST and IGST added up; the compensation cess is not counted in them). The Union Budget figures in Topic 64 show only the Union's GST receipts.

3. Extra section: a timeline of GST, 2016 to 2026

Date	What happened
8 September 2016	President's assent to the Constitution (One Hundred and First Amendment) Act, 2016
12 September 2016	Article 279A comes into force; the Union Cabinet approves the setting up of the GST Council and its Secretariat
22 and 23 September 2016	First meeting of the GST Council, New Delhi
29 March 2017	Lok Sabha passes the CGST, IGST, UTGST and GST (Compensation to States) Bills
6 April 2017	Rajya Sabha passes the four Bills
12 April 2017	The four Bills become Acts
1 July 2017	GST comes into force
November 2017	National Anti-profiteering Authority set up
10 January 2019	32nd meeting: the registration thresholds and the composition limit of Rs 1.5 crore decided, with effect from 1 April 2019
19 May 2022	Supreme Court, Union of India v. Mohit Minerals: the Council's recommendations are not binding on Parliament or the State Legislatures
1 December 2022	Anti-profiteering complaints go to the Competition Commission of India
1 October 2024	Anti-profiteering cases go to the Principal Bench of the GSTAT
3 September 2025	56th meeting, New Delhi: merit rate, standard rate and special rate recommended

Date	What happened
22 September 2025	The new rates come into force, except on the tobacco group
24 September 2025	GST Appellate Tribunal launched in New Delhi
1 February 2026	The tobacco group moves to the new rates; additional excise duty on tobacco products and a new cess on pan masala replace the compensation cess
8 October 2026	57th meeting, New Delhi: the latest as on 11 October 2026

How to use the timeline:

- Learn three pairs of dates: assent and roll-out (8 September 2016 and 1 July 2017); decision and coming into force of the new rates (3 September 2025 and 22 September 2025); the general change and the change for the tobacco group (22 September 2025 and 1 February 2026).
- The Council came before the tax: it first met in September 2016, more than nine months before GST began.

4. Three common exam traps

1. **"The GST Council makes the GST law, and what it decides binds everyone."** The Council only recommends. The laws are made by Parliament and the State Legislatures, and the Supreme Court said in Mohit Minerals (2022) that the recommendations do not bind them. Note two more points. The Council is a body under the Constitution, constituted by the President, not a body set up by an Act of Parliament. Its Chairperson is the Union Finance Minister, not the Prime Minister.
2. **"Alcohol, petrol and tobacco are all outside GST in the same way."** They stand in three different positions. Alcoholic liquor for human consumption is outside GST by the Constitution's own definition of GST. The five petroleum products are within the scheme of the Amendment, but the levy waits for a date that the Council has to recommend. Tobacco is inside GST and bears the Union's excise duty as well.
3. **Mixing up the dates of the new rates.** The 56th meeting only recommended the change; the change began nineteen days later, and for pan masala, cigarettes and the rest of the tobacco group it began only on 1 February 2026. Older books, and NCERT's box, still show the slabs of 12 and 28 per cent, which no longer exist. The 57th meeting of 8 October 2026, not the 56th, is the latest meeting as on 11 October 2026.

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GST: follow the value added



	Producer	Wholesaler	Retailer	Consumer
Value before tax (₹)	100	150	200	–
Output tax @ 10% (illustrative rate)	10	15	20	–
Input tax credit (₹)	0	10	15	–
Net tax paid (₹)	10	5	5	–

Total tax collected = 10 + 5 + 5 = 20

- Each business offsets GST paid on inputs against its output tax.
- Goods and services flow forward in the chain.
- GST is a destination-based tax and the burden is on final consumption.

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CGST, SGST, UTGST and IGST

Intra-State supply



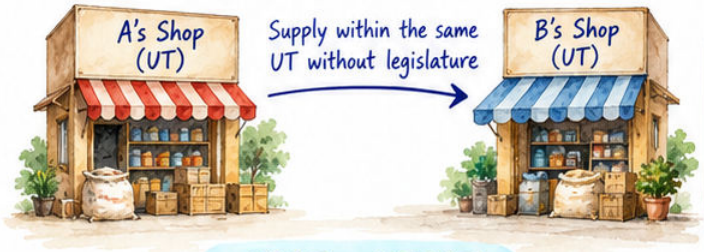
CGST + SGST

Inter-State supply



IGST

Supply in a Union Territory without legislature



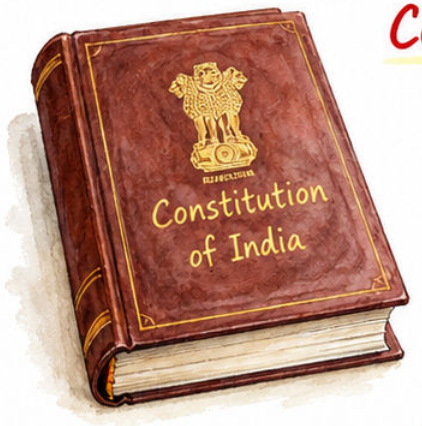
CGST + UTGST
(where applicable)

Imports



IGST

Imports are subject to IGST.



Constitution connections

- Article 246A → Legislative power for GST.
- Article 269A → Inter-State levy and apportionment.
- Article 279A → GST Council.
- Article 366(12A) → Definition of GST.

Inter-State GST legislation is exclusively under Parliament as per Article 246A(2).

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GST Council: votes have weights

Union Finance Minister chairs the GST Council.

Union MoS Finance/ Revenue is a member of the Council.

State finance/tax ministers are members of the Council.



Quorum

Half total members of the Council.



Decision threshold

At least three-fourths of the weighted votes present and voting.



Weights of votes

Centre → one-third

States together → two-thirds

Vice-chair

Selected by State members from among themselves.

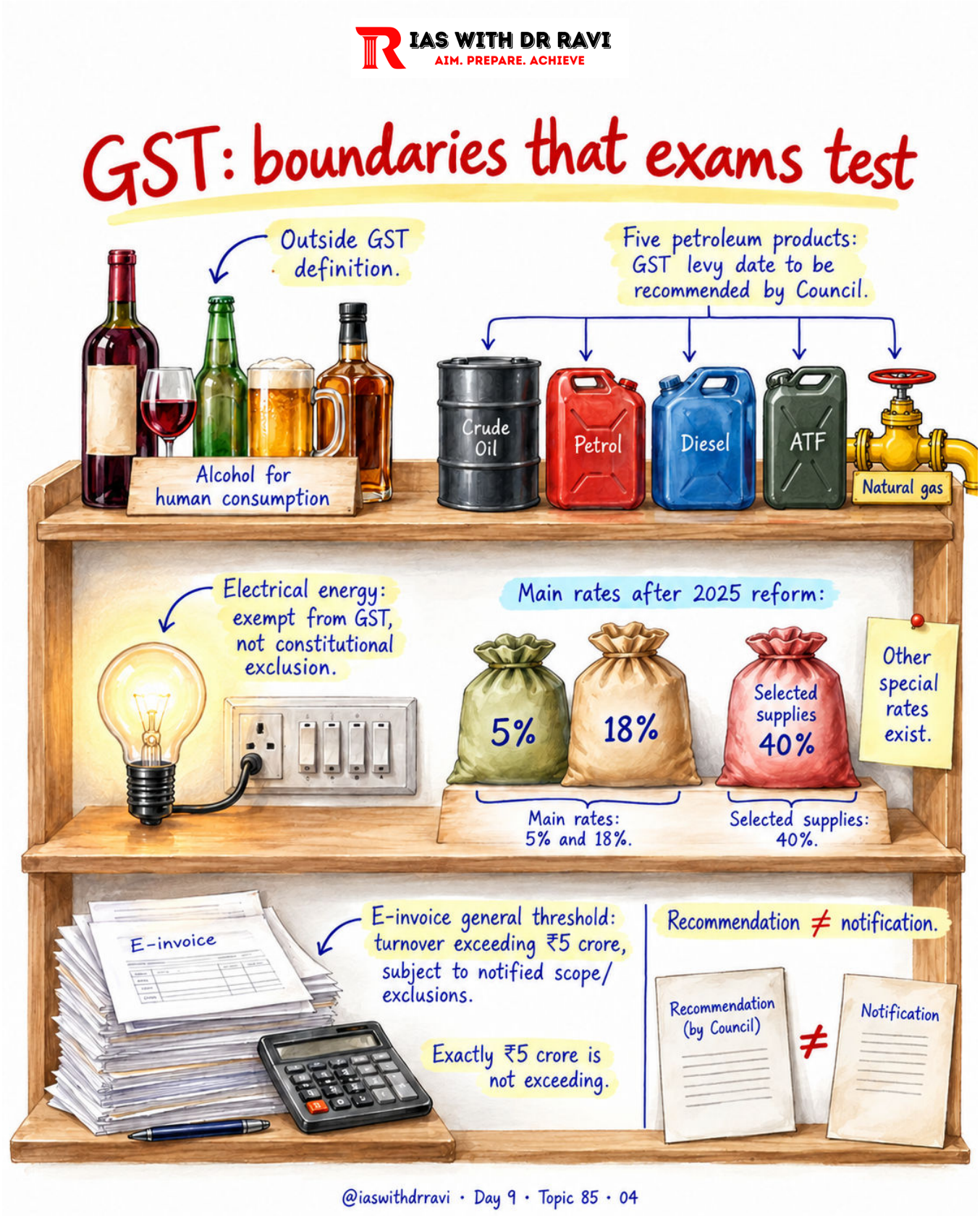


How recommendations operate

Recommendations require appropriate law/notification to operate.



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GST: boundaries that exams test
Outside GST definition.
Alcohol for human consumption
Five petroleum products: GST levy date to be recommended by Council.
Crude Oil
Petrol
Diesel
ATF
Natural gas
Electrical energy: exempt from GST, not constitutional exclusion.
Main rates after 2025 reform:
5%
18%
Selected supplies 40%
Other special rates exist.
Main rates: 5% and 18%.
Selected supplies: 40%.
E-invoice
E-invoice general threshold: turnover exceeding ₹5 crore, subject to notified scope/ exclusions.
Exactly ₹5 crore is not exceeding.
Recommendation ≠ notification.
Recommendation (by Council)
≠
Notification
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Indian monsoon: mechanism, onset and withdrawal

1. Concept in one line

The Indian monsoon is the seasonal reversal of winds over the subcontinent: moist winds blow from the south-west in summer, and the flow turns round to blow from the north-east in winter. The examination asks how it is caused, how its onset, breaks and withdrawal are recognised, and for the dates and rainfall figures of the India Meteorological Department (IMD).

2. Revision notes

2.1 The word and the idea

- "Monsoon" comes from the Arabic word "mausim", which means season. It refers to the seasonal reversal in the wind direction during a year (NCERT, Class 9; Day 6, Topic 56).
- Over India the wind blows from the south-west in the warmest months and from the north-east in the cooler months (Britannica). NCERT calls the first the south-west monsoon and the second the north-east monsoon.

2.2 The mechanism, step by step

NCERT does not give one single cause: it builds the explanation in steps. Steps 1, 2, 3, 7 and 8 are NCERT's (Class 11). The IMD adds the others.

Step	What happens
1. Differential heating of land and sea	In April and May, as the overhead Sun moves north towards the Tropic of Cancer, the large landmass heats up intensely. The Sun is directly overhead at the Tropic of Cancer at the June solstice. An intense low pressure forms in the north-western part of the subcontinent, and this sets the stage for the monsoon winds to drift towards the subcontinent. The IMD calls it the heat low; it is shallow and reaches only up to 850 hPa, that is, 850 mb (about 1.5 km)
2. The Inter-Tropical Convergence Zone (ITCZ) shifts north	The ITCZ is the low pressure zone at the equator where the trade winds converge (Day 5, Topic 44). In July it is located around 20° N to 25° N, over the Gangetic plain, and it is then sometimes called the monsoon trough. For the IMD the monsoon trough is an elongated low pressure area that extends from the heat low over Pakistan to the head of the Bay of Bengal

Step	What happens
3. The trade winds of the southern hemisphere cross the equator	They cross it between 40° E and 60° E. The Coriolis force then makes them blow from the south-west to the north-east: they are the south-west monsoon
4. The Mascarene High	It is a high pressure area found around the Mascarene Islands (Réunion, Mauritius and Rodrigues, near Madagascar), in the south Indian Ocean, during the monsoon period. The IMD holds it responsible for the cross-equatorial flow through the south Arabian Sea
5. The Somali jet	The cross-equatorial flow, 1 to 1.5 km above sea level, attains jet speed along the east coast of Africa and is strongest in July (Day 7, Topic 65)
6. The Tibetan Plateau	During the monsoon a warm anticyclone, the Tibetan High, lies over the plateau in the middle and upper troposphere, and the winds that flow out of it feed the tropical easterly jet (IMD). The lesson of the National Institute of Open Schooling (NIOS) says that the easterly jet owes its origin to the heating of the Tibetan plateau
7. The two jet streams	The shift of the ITCZ is related to the withdrawal of the westerly jet stream from the north Indian plain, south of the Himalayas. The easterly jet stream sets in along 15° N only after the westerly jet (NCERT writes "western") has withdrawn, and NCERT holds it responsible for the burst of the monsoon (Day 7, Topic 65)
8. Links with distant oceans	Southern Oscillation: it is measured by the difference in pressure between Tahiti, in the central South Pacific, and Port Darwin, in northern Australia. El Nino: warm currents that appear off the coast of Peru once every three to seven years; India uses it for the long range forecast of monsoon rainfall. The IMD names the El Nino Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD) as the major factors behind the year-to-year variation of the monsoon (Day 37, Topic 365)

2.3 Onset: how it is declared, and the normal dates

- The onset over Kerala marks the advance of the south-west monsoon over the Indian mainland, and the change from the hot and dry season to the rainy season (IMD).
- The IMD declares it when three conditions are met together.

Condition	What the IMD looks for
Rainfall	After 10 May, 60 per cent of 14 listed stations, from Minicoy to Mangalore, report rainfall of 2.5 mm or more for two consecutive days. The onset is declared on the second day
Wind field	Westerlies extend up to 600 hPa over 0–10°N, 55–80°E. At 925 hPa, zonal wind speed over 5–10°N, 70–80°E is about 15–20 knots.
Outgoing longwave radiation (OLR)	The OLR value derived from the INSAT satellites is below 200 W/m² over 5–10°N, 70–75°E. OLR is the long wave radiation that leaves for space (Day 3, Topic 25)

- **Normal date:** the monsoon normally sets in over Kerala on 1 June, with a standard deviation of about 7 days (IMD).
- **The burst (NCERT):** the rain begins rather abruptly. The sudden onset of the moisture-laden winds, with violent thunder and lightning, is often termed the "break" or "burst" of the monsoons. It may come in the first week of June on the coast from Kerala to Maharashtra, and as late as the first week of July in the interior.
- **Normal dates revised in 2020:** the IMD's older normal dates rested on the records of 149 stations for 1901 to 1940. The revised onset dates rest on the data of 1961 to 2019. The date for Kerala did not change. The monsoon now covers the entire country by 8 July; the older normal date was 15 July. Section 3 gives the dates place by place.
- NCERT's text still has the older picture: the Kerala coast by 1 June, Mumbai and Kolkata between 10 and 13 June, and the entire subcontinent by mid-July. Where a question names the IMD or the revised dates, give the IMD's dates.

2.4 The two branches (NCERT, Class 11)

The monsoon approaches the landmass in two branches.

Branch	Path	What it gives
Arabian Sea branch, first part	The Western Ghats obstruct it, and the winds climb the slopes from 900 to 1,200 m	The windward side of the Sahyadris and the Western Coastal Plain get 250 to 400 cm of rain. East of the Ghats the descending winds get heated and give little rain: a rain-shadow area
Arabian Sea branch, second part	It strikes the coast north of Mumbai and moves along the Narmada and Tapi valleys	It gives rain to central India. Then it enters the Ganga plains and mingles with the Bay of Bengal branch

Branch	Path	What it gives
Arabian Sea branch, third part	It strikes the Saurashtra Peninsula and Kachchh, then passes over west Rajasthan and along the Aravallis	It gives only scanty rain. In Punjab and Haryana it too joins the Bay of Bengal branch, and the two together cause rain in the western Himalayas
Bay of Bengal branch	It strikes the coast of Myanmar and part of south-east Bangladesh. The Arakan Hills deflect a big portion of it, so it enters West Bengal and Bangladesh from the south and south-east, and then it splits into two	One part moves westwards along the Ganga plains, as far as the Punjab plains. The other moves up the Brahmaputra valley, and its sub-branch strikes the Garo and Khasi hills of Meghalaya, where Mawsynram receives the highest average annual rainfall in the world

- **Why the Tamil Nadu coast remains dry in this season (NCERT's two reasons):** it is situated parallel to the Bay of Bengal branch, and it lies in the rain-shadow area of the Arabian Sea branch.

2.5 Breaks, monsoon depressions and Andhra Pradesh

- **Break in the monsoon (NCERT, Class 11):** if, after a few days of rain, the rain fails for one or more weeks, it is a break. In northern India the rains fail when rain-bearing storms are not very frequent along the monsoon trough. On the west coast the dry spells come on days when the winds blow parallel to the coast.
- **What the trough does (NCERT, Class 9; IMD):** the trough and its axis keep moving northwards and southwards. When the axis lies over the plains, rainfall is good there. When it shifts closer to the Himalayas, the plains have longer dry spells and widespread rain falls in the mountainous catchment areas of the Himalayan rivers. The IMD says the same: with the trough along the foothills of the Himalayas there is a break over the major part of India and heavy rain along the foothills; with the trough south of its normal position the monsoon is active over most of India.
- **Monsoon depressions (IMD):** substantial rain comes from the westward passage of the depressions that form in the Bay of Bengal. In July and August they usually form north of 18° N in the north-west Bay, and on average about 2 form in each monsoon month. Tropical cyclones come on Day 13 (Topic 125).
- **Andhra Pradesh (IMD's table of cities, 2020):** the normal date of onset is 4 June at Anantapur and Tirupati in Rayalaseema, and 11 June at Visakhapatnam. For Anantapur and Tirupati the table gives no date of withdrawal: it notes that the south-west monsoon retreats and the north-east monsoon gets established. The climate of Andhra Pradesh comes on Day 57 (Topic 566).

2.6 Withdrawal, the retreating monsoon and the north-east monsoon

- **How withdrawal is declared (IMD):** the withdrawal from the extreme north-western parts of the country is considered only after 1 September. Three things are needed: (i) rainfall activity ceases over the area for 5 continuous days; (ii) an anticyclone is established in the lower troposphere, at 850 hPa and below; (iii) the moisture content falls considerably.
- **Normal dates (IMD, revised in 2020 on the data of 1971 to 2019):** the monsoon begins to withdraw from north-west India around 17 September, which is the date for Jaisalmer in west Rajasthan. It withdraws from the entire country around 15 October.
- The older normal date for the start was 1 September, so the start is now more than two weeks later; the date of 15 October did not change. Do not mix up the two uses of 1 September: it was the older normal date, and it is still the date after which the IMD begins to apply its criteria. NCERT's text has the older picture here too: the monsoon retreats from western Rajasthan by the first week of September.
- **The season of retreating monsoon (NCERT, Class 11):** October and November, when the low pressure trough of the Ganga plain moves southwards.
- **"October heat":** the skies clear and the temperature rises while the land is still moist. High temperature and humidity together make the weather oppressive.
- North India is dry, but the eastern part of the Peninsula gets rain: October and November are its rainiest months. Cyclonic depressions that originate over the Andaman Sea cross its eastern coast, and a bulk of the rainfall of the Coromandel coast comes from these depressions and cyclones.
- **The north-east monsoon (NCERT):** winter monsoons generally do not cause rainfall, because they move from land to sea (Day 6). NCERT gives exceptions to this rule. One of them is a region: the Tamil Nadu coast, southern Andhra Pradesh, south-east Karnataka and south-east Kerala. In October and November the north-east monsoon picks up moisture while crossing the Bay of Bengal and causes torrential rain there.
- **IMD on the north-east monsoon:** its season is October to December. It serves five meteorological subdivisions: Tamil Nadu, Puducherry and Karaikal; Kerala and Mahe; Coastal Andhra Pradesh and Yanam; Rayalaseema; and South Interior Karnataka. Tamil Nadu receives about 48 per cent of its annual rainfall in this season. The normal date of onset of the north-east monsoon over coastal Tamil Nadu and south coastal Andhra Pradesh is 20 October.

2.7 The long period average and the rainfall categories

- **Long period average (LPA):** the IMD measures the season's rainfall (June to September) against its average over a long base period. The LPA for the country as a whole, based on 1971 to 2020, is 87 cm (868.6 mm). The IMD's FAQ still carries the earlier figure of 880.6 mm (about 88 cm), based on 1961 to 2010.

Category for the country as a whole (IMD's forecasts)	Season's rainfall as a percentage of the LPA
Deficient	Less than 90
Below normal	90 to 95
Normal	96 to 104

Category for the country as a whole (IMD's forecasts)	Season's rainfall as a percentage of the LPA
Above normal	105 to 110
Excess	More than 110

- The IMD's FAQ also describes a finished season in a simpler, three-way manner: normal within 10 per cent on either side of the LPA (90 to 110 per cent), below normal under 90 per cent and above normal over 110 per cent. So the two schemes give one figure two names: a season at 87 per cent of the LPA, as in 2026, is "deficient" in the table of five categories and "below normal" in the three-way scheme; the IMD's statement on the season of 2026 called it deficient. A question that lists five categories wants the table above.
- The distribution and variability of rainfall come on Day 55 (Topic 545), and droughts and floods on Day 69 (Topic 687).

3. Extra section: the monsoon calendar, with the season of 2026

Where the monsoon arrives, and when:

Place	Normal date of onset (IMD, revised in 2020)
Andaman and Nicobar Islands	Around 22 May
Thiruvananthapuram (Kerala)	1 June
Chennai	4 June
Guwahati	4 June
Mumbai	11 June
Kolkata	11 June
New Delhi	27 June
Jaisalmer (extreme north-west India)	8 July

- Over a belt of States that includes Andhra Pradesh, Telangana, Maharashtra and Gujarat, the revised dates are 3 to 7 days later than the older ones.

The stages of the season, with the older dates and the season of 2026:

Stage	Older normal date (data of 1901 to 1940)	Normal date revised in 2020	Season of 2026 (IMD)
Advance over the Andaman and Nicobar Islands	Around 20 May	Around 22 May	16 May (South Andaman Sea and Nicobar Islands)

Stage	Older normal date (data of 1901 to 1940)	Normal date revised in 2020	Season of 2026 (IMD)
Onset over Kerala	1 June	1 June	4 June
The entire country is covered	15 July	8 July	9 July
Withdrawal begins from west Rajasthan	1 September	17 September	19 September
Withdrawal from the entire country	15 October	15 October	Not complete as on 11 October 2026: the IMD's line of withdrawal then passed through Ranchi, Hyderabad and Panjim

The season of 2026, as the IMD reported it in its statement on the salient features of the season (figures up to 30 September 2026):

- **Forecasts:** on 13 April 2026 the IMD forecast the season's rainfall at 92 per cent of the LPA, that is, below normal, with a model error of 5 per cent either way. On 15 May 2026 it forecast the onset over Kerala for 26 May, with a model error of 4 days either way.
- **Onset:** the monsoon set in over Kerala on 4 June 2026, 3 days after the normal date. It covered the entire country by 9 July 2026, against the normal date of 8 July.
- **Withdrawal:** it began from west Rajasthan on 19 September 2026, 2 days after the normal date of 17 September.
- **Rainfall:** the country as a whole received 759.4 mm, which is 87 per cent of the LPA of 868.6 mm. The IMD called the season deficient, since the rainfall was less than 90 per cent of the LPA.
- **Month by month:** June 65 per cent of the LPA, July 101, August 84 and September 92.
- **By region:** North-west India 94 per cent, Central India 97, the South Peninsula 76, and East and North-east India 74.
- **The distant oceans:** El Nino conditions developed in June and grew stronger through the season. The IOD stayed neutral.

How to read the calendar:

- The monsoon takes about five weeks to spread from Kerala to the whole country (1 June to 8 July), and about four weeks to leave it (17 September to 15 October).
- The Bay of Bengal side is early. The Andaman and Nicobar Islands get the monsoon around 22 May, before Kerala, and Guwahati (4 June) gets it a week before Kolkata (11 June).
- Chennai (4 June) is reached a week before Mumbai (11 June), although the Tamil Nadu coast gets little rain in this season.

4. Three common exam traps

1. **"Break" does not always mean a dry spell.** NCERT uses the word in two ways. The sudden beginning of the rains, with thunder and lightning, is the "break" or "burst" of the monsoons. A "break in the monsoon" is the opposite: a spell of one or more weeks without rain after the rains have set in. Read the sentence before deciding which one is meant.
2. **"The south-west monsoon does not reach Tamil Nadu, so its coast is dry."** The monsoon covers the State, but its coast gets little rain in this season for NCERT's two reasons: the coast lies parallel to the Bay of Bengal branch, and it is in the rain-shadow area of the Arabian Sea branch. The coast gets its rain later, from the north-east monsoon and from the depressions and cyclones of October and November. So the season of retreating monsoon is not a dry season everywhere.
3. **"Normal rainfall means exactly the average."** In the IMD's forecasts "normal" is a band, 96 to 104 per cent of the LPA, and "below normal" (90 to 95) is not the same as "deficient" (less than 90). The season of 2026, at 87 per cent, was deficient. Remember the LPA itself with its base: 87 cm on 1971 to 2020, not the earlier figure of about 88 cm on 1961 to 2010.

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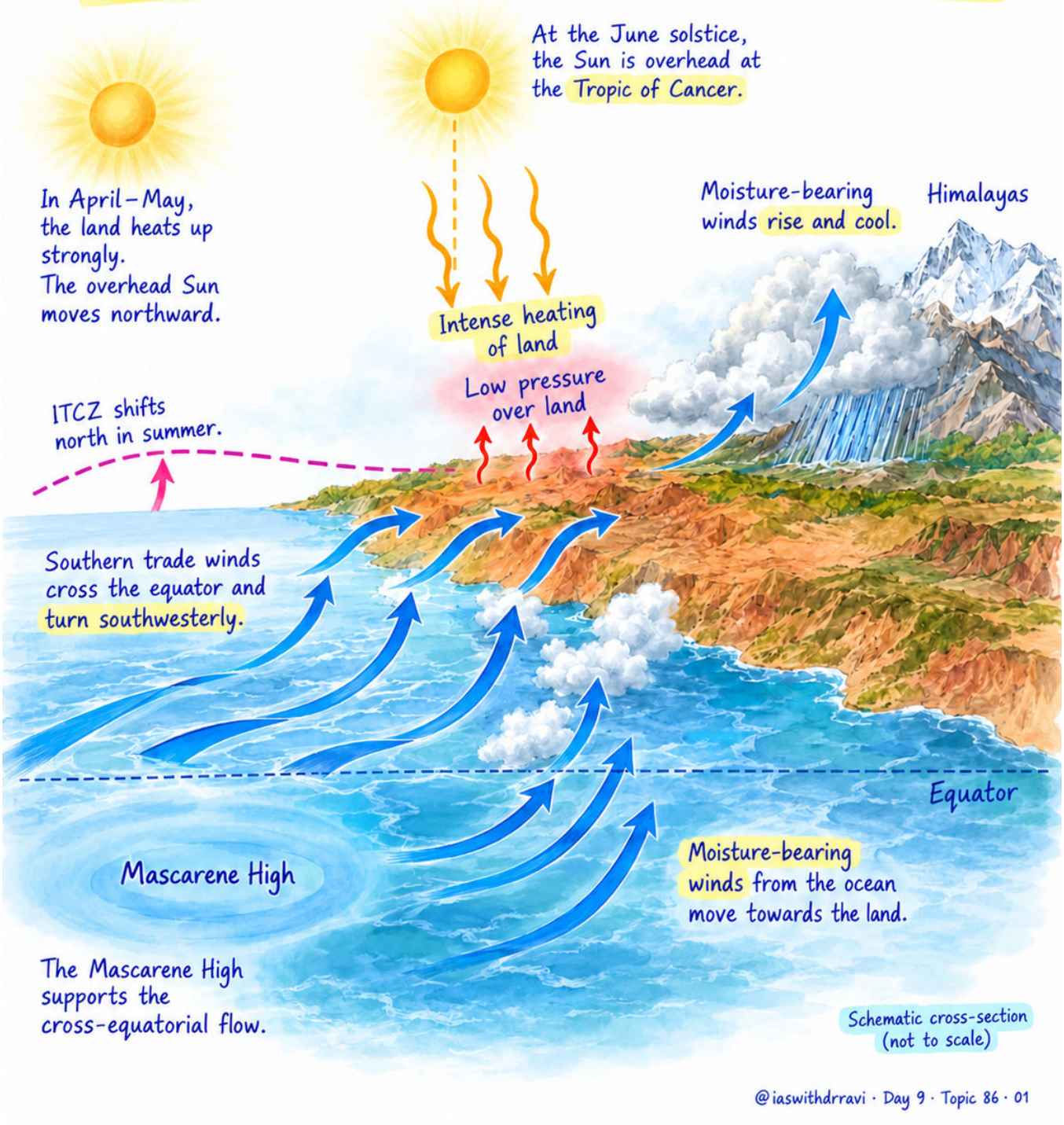
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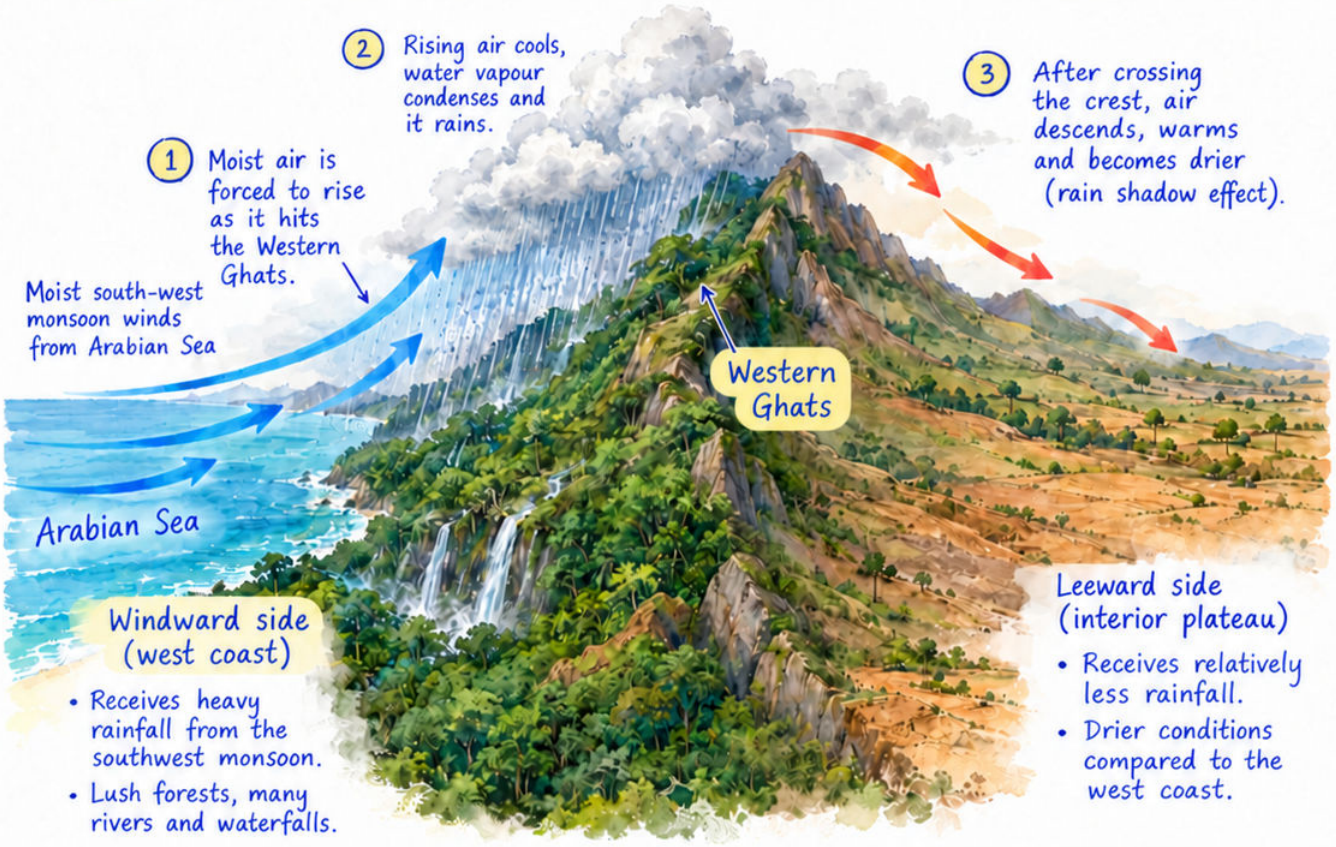
How summer draws in the monsoon



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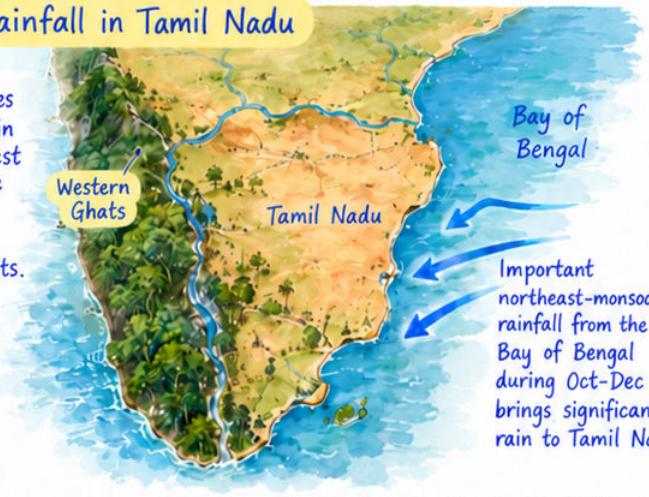
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Mountains turn moisture into rain



Different rainfall in Tamil Nadu

Tamil Nadu receives relatively less rain from the southwest monsoon because it lies in the rain shadow of the Western Ghats.



Branches of the southwest monsoon



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Onset and withdrawal: different tests

Kerala onset: tests

Rainfall condition

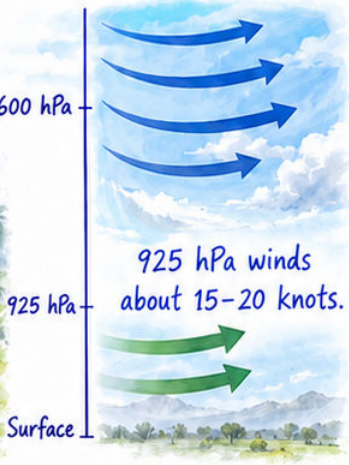
After 10 May, ≥60% of the available stations among 14 have ≥2.5 mm for two consecutive days.



Wind condition

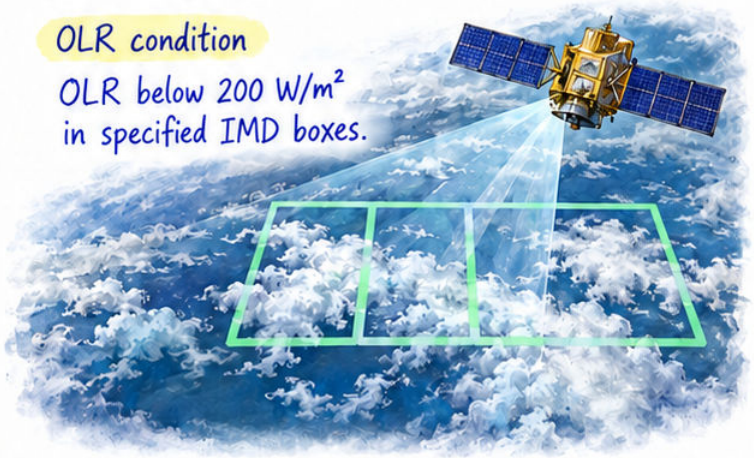
Westerlies to 600 hPa.

925 hPa winds about 15–20 knots.



OLR condition

OLR below 200 W/m² in specified IMD boxes.



Withdrawal: tests

Continuous dry days

5 continuous dry days over northwest India.



Lower-troposphere anticyclone

Presence of a lower-troposphere anticyclone.



Reduced moisture

Reduced moisture over the region.



Whole-country monsoon advance

Around 8 July (normal date).



Normal withdrawal start

Around 17 September (normal date).



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Active spells, breaks and ocean signals

Active spell

- Monsoon trough over the plains
- Widespread rainfall over plains
- Heavier rain in many areas



Break

- Monsoon trough near Himalayan foothills
- Plains relatively drier
- More rain over Himalayan foothills



Pacific ocean and ENSO

Sea level pressure is measured at Tahiti (central South Pacific) and Darwin (northern Australia).

Differences between these measurements help indicate ENSO conditions.



How ocean signals influence the monsoon

El Niño phase of ENSO

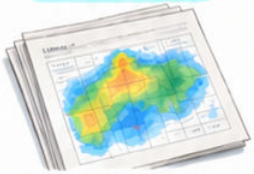
- Changes in Pacific Ocean conditions influence monsoon variability.
- Associated with a tendency towards weaker monsoon conditions, but outcomes vary from year to year.

Indian Ocean Dipole (IOD)

- Changes in Indian Ocean conditions influence monsoon variability.
- A positive IOD is associated with a tendency towards stronger monsoon conditions, but outcomes vary from year to year.

Seasonal forecast vs realised rainfall

Seasonal forecast



- Outlook for the season ahead based on ocean and atmospheric signals.
- Indicates a tendency, not a fixed outcome.

Realised rainfall



- Actual rainfall observed during the season.
- Can be higher or lower than the seasonal forecast.

The monsoon is variable, not a single uninterrupted rain event.

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NavIC (IRNSS): India's navigation satellite system

1. Concept in one line

NavIC (Navigation with Indian Constellation), earlier called IRNSS, is ISRO's regional navigation satellite system, designed to give position, navigation and timing services over India and the region around it. The examination asks about its orbits, its two services, its satellites and launch vehicles, and how it differs from GAGAN and from global systems such as GPS.

2. Revision notes

2.1 How satellite navigation works

- A navigation satellite carries atomic clocks that keep very accurate time, and it transmits this time to receivers on the Earth.
- The receiver compares its own time with the time sent by the satellite and multiplies the difference by the speed of light. The result is a pseudorange, an initial distance estimate affected by clock errors and other delays. Signals from at least four suitably placed satellites allow the receiver to solve for its three-dimensional position and its clock offset. Finding distance in this way is called ranging.
- One satellite tells the receiver only that it lies somewhere on a sphere around that satellite. By using the signals of four satellites, the receiver can compute its precise position. In a written reply in the Lok Sabha on 29 July 2026, the Government said that a minimum of four operational satellites in orbit is required for a basic positioning service.
- Why the clocks matter: distance is worked out from time, so a navigation satellite with no functioning atomic clock cannot provide its normal positioning signals, although it may still be used for one-way messages. IRNSS-1F in Section 2.5 is an example.

2.2 What NavIC is

- **Full form:** Navigation with Indian Constellation. ISRO's earlier name for the system was the Indian Regional Navigation Satellite System (IRNSS). In Indian languages the word navik means a sailor or navigator.
- **A regional system, not a global one:** its coverage area is India and a region up to 1,500 km beyond India's boundary.
- **What it gives:** position, navigation and timing. The three together are called PNT services.
- **Why India built it:** The Times of India reported on 5 April 2014 that the Kargil conflict of 1999 spurred India to design its own system, because the United States had denied India's request for GPS data for the Kargil region. This account comes from the press. ISRO's NavIC page does not mention Kargil.
- ISRO says the civilian signals of NavIC are interoperable with those of GPS, GLONASS, Galileo and BeiDou, that is, they can be used together with them.

2.3 The space segment: the constellation as designed

ISRO designed NavIC with a constellation of 7 satellites.

Kind of orbit	Number of satellites	Where they are placed
Geostationary orbit (GEO)	3	At 32.5°E, 83°E and 129.5°E
Inclined geosynchronous orbit (IGSO)	4	They cross the equator at 55°E and 111.75°E; the inclination is 29°; there are two satellites in each plane

- Both kinds of orbit are at geosynchronous height, about 36,000 km above the Earth (35,786 km for a circular orbit, the figure used in Topic 7).
- A geostationary satellite appears fixed over one spot on the equator. An inclined geosynchronous satellite has the same period, but it moves north and south of the equator, as Topic 7 explained.
- The design has no satellite in Medium Earth Orbit (MEO), the orbit of the GPS satellites.
- Seven is the number in the design. The number that is working on a given date is a different matter; see Section 2.6.

2.4 Two services, accuracy and frequency bands

Service	Meant for	Note
Standard Positioning Service (SPS)	Civilian users	The Government told Parliament in December 2025 that NavIC civilian signals are open to all
Restricted Service (RS)	Strategic users	An encrypted service available only to authorised users (ISRO)

- ISRO's NavIC page writes the first name as "Standard Position Service"; its mission pages write "Standard Positioning Service". Both names mean the same service.
- **Accuracy as ISRO states it:** designed user position accuracy better than 20 m (2σ). For timing, ISRO's NavIC page says better than 50 nanoseconds (ns) (2σ), while its NVS-02 mission page of January 2025 says better than 40 ns (2σ). These are statistical design specifications, not a guarantee of that error limit for every fix.
- **Frequency bands of the first generation:** both services are given in the L5 band (1176.45 MHz) and in the S band (2492.028 MHz). The S-band figure is the one in ISRO's signal document for the Standard Positioning Service (Version 1.1, August 2017); ISRO's NavIC page prints it as 2498.028 MHz.
- **Second generation:** a new civilian signal in the L1 band (1575.42 MHz) is added. The second-generation satellites therefore carry three bands: L1, L5 and S.

2.5 The satellites, first generation and second generation

Satellite · IRNSS-1A
Launch date · 1 July 2013
Launch vehicle · PSLV-C22
Orbit slot · IGSO, 55°E
What to remember · The first satellite. Its three rubidium atomic clocks failed: the first in July 2016 and the other two soon after. ISRO has reconfigured it to send safety-of-life alert messages

Satellite · IRNSS-1B
Launch date · 4 April 2014
Launch vehicle · PSLV-C24
Orbit slot · IGSO, 55°E
What to remember · One of the three satellites named as giving PNT services in July 2026

Satellite · IRNSS-1C
Launch date · 16 October 2014
Launch vehicle · PSLV-C26
Orbit slot · GEO, 83°E
What to remember · Not among the three satellites named in July 2026

Satellite · IRNSS-1D
Launch date · 28 March 2015
Launch vehicle · PSLV-C27
Orbit slot · IGSO, 111.75°E
What to remember · Not among the three satellites named in July 2026

Satellite · IRNSS-1E
Launch date · 20 January 2016
Launch vehicle · PSLV-C31
Orbit slot · IGSO, 111.75°E
What to remember · Not among the three satellites named in July 2026

Satellite · IRNSS-1F
Launch date · 10 March 2016
Launch vehicle · PSLV-C32
Orbit slot · GEO, 32.5°E
What to remember · It completed its design mission life of 10 years on 10 March 2026. Its atomic clock stopped working on 13 March 2026. ISRO said it would continue with one-way broadcast messaging

Satellite · IRNSS-1G
Launch date · 28 April 2016
Launch vehicle · PSLV-C33
Orbit slot · GEO, 129.5°E

What to remember · The seventh satellite of the series. Not among the three satellites named in July 2026

Satellite · IRNSS-1H
Launch date · 31 August 2017
Launch vehicle · PSLV-C39
Orbit slot · Meant for IGSO, 55°E
What to remember · ISRO's launch list marks it "Mission Unsuccessful". The heat shield did not separate, so the satellite could not be placed in its orbit

Satellite · IRNSS-1I
Launch date · 12 April 2018
Launch vehicle · PSLV-C41
Orbit slot · IGSO, 55°E
What to remember · It followed the loss of IRNSS-1H. One of the three satellites named in July 2026

Satellite · NVS-01
Launch date · 29 May 2023
Launch vehicle · GSLV-F12
Orbit slot · GEO, 129.5°E
What to remember · The first of the second-generation satellites; about 2,232 kg. The L1 band was added and an indigenous rubidium atomic clock was flown. One of the three satellites named in July 2026

Satellite · NVS-02
Launch date · 29 January 2025
Launch vehicle · GSLV-F15
Orbit slot · Meant for 111.75°E; slot not reached
What to remember · The 100th launch from Sriharikota. The rocket placed it in the intended transfer orbit, but the orbit could not be raised (see below)

- **Launch vehicles:** all nine satellites of the IRNSS-1 series, from 1A to 1I, flew on PSLV-XL. The two NVS satellites flew on GSLV from the Second Launch Pad; GSLV left each of them in a Geostationary Transfer Orbit (GTO), which ISRO writes as Geosynchronous Transfer Orbit. Launch vehicles were covered in Topic 17.
- **NVS-02:** ISRO said on 2 February 2025 that the valves that admit the oxidiser to fire the thrusters for orbit raising did not open. The satellite stayed in an elliptical orbit. ISRO said its systems were healthy and that it was working out other ways of using the satellite for navigation in that orbit. On 25 February 2026, ISRO reported that the orbit-raising engine’s oxidiser-line pyro valve had not received its drive signal. The review committee identified a disengaged connector contact in each of the main and redundant paths as the most likely cause.

- **Orbit slots:** ISRO's NavIC page gives the slots of the design and names 55°E for IRNSS-1A. An ISRO page of January 2025 says that NVS-02 was to be placed at 111.75°E, replacing IRNSS-1E. The slot shown against each of the other satellites is from a reference list and matches that design.

2.6 How many are working: always read the date

- **25 March 2026 (written reply in the Lok Sabha):** eleven NavIC satellites have been launched, that is, nine of the IRNSS-1 series and two of the NVS series. Eight of them are functional. Three broadcast navigation signals, and five can broadcast one-way messages.
- **29 July 2026 (written reply in the Lok Sabha):** three satellites were giving PNT services: IRNSS-1B, IRNSS-1I and NVS-01. As four are needed for basic positioning, the reply said that NavIC could not give a standalone positioning service, while its timing service was functional. It added that users face no vulnerability, because NavIC is used along with other constellations.
- **As on 11 October 2026:** ISRO's lists of PSLV launches and GSLV launches, and the launches shown on ISRO's home page, show no navigation satellite launched after NVS-02.
- This number changes with every launch and every failure. Learn it with its date, not as a fixed fact.

2.7 The ground segment

- ISRO's ground network works round the clock. It has a control centre, a precise timing facility, range and integrity monitoring stations and two-way ranging stations.
- The control centre is the ISRO Navigation Centre (INC) at Byalalu, with a second centre at Lucknow. The IRNSS Network Timing facility (IRNWT) keeps the system time. In February 2022 ISRO counted 16 range and integrity monitoring stations in operation.

2.8 Uses, and how NavIC is brought into use

- **Uses listed by ISRO:** transport on land, in the air and at sea; location-based services and personal mobility; resource monitoring; surveying and geodesy; scientific research; giving and synchronising time; and safety-of-life alerts. The Government's reply of March 2026 also lists maritime operations and disaster management.
- **Alerts to fishermen:** IRNSS-1A now sends alerts on cyclones, tsunamis and high sea waves to the fishing community.
- **Figures the Government gave in Parliament (release of 10 December 2025):**
  - Vehicle location tracking of public and commercial vehicles: more than 140 device models are certified, and they are fitted in more than 15 lakh vehicles.
  - Trains: more than 10,000 trains carry NavIC-enabled devices for real-time tracking.
  - Fishing vessels: more than 30,000 vessels carry NavIC-enabled transponders.
  - Mobile phones: more than 60 smartphone models from various manufacturers support NavIC.
  - Time: NavIC time transfer receivers are used to spread a common Indian Standard Time (IST) across India.

- **Rule on vehicle trackers:** a reply in the Lok Sabha on 26 June 2019 said that all commercial vehicles registered from 1 April 2019 onwards are mandated to have vehicle trackers, and that these trackers are NavIC-enabled. The automotive standard for such trackers is AIS-140. Read this with the Government's release of 10 December 2025, which says that the Government has not mandated NavIC yet and that discussions on this are going on.
- **Recognition at sea:** the Maritime Safety Committee of the International Maritime Organization (IMO), at its 102nd session held from 4 to 11 November 2020, accepted IRNSS as a component of the World Wide Radio Navigation System (WWRNS). Ships can use it in Indian Ocean waters up to about 1,500 km from the Indian boundary.
- **Recognition in telecom:** Release 16 of a standard of the 3rd Generation Partnership Project (3GPP) provides for assisted NavIC support in Long Term Evolution (LTE) mobile networks.

2.9 GAGAN is not NavIC

Point	NavIC	GAGAN
Full form	Navigation with Indian Constellation	GPS Aided Geo Augmented Navigation
What it is	An independent regional navigation satellite system, with its own satellites and its own system time	A satellite-based augmentation system (SBAS): it adds accuracy, availability and integrity for aircraft and, as its name says, it is aided by GPS
Built by	ISRO	ISRO and the Airports Authority of India (AAI)
Meant for	All users on land, in the air and at sea	Civil aviation in Indian airspace, from the en-route stage to the approach to an airport
Similar systems abroad	QZSS of Japan is also a regional system	WAAS of the United States, EGNOS of Europe and MSAS of Japan; GAGAN is interoperable with them
Dates to note	First satellite on 1 July 2013	The Directorate General of Civil Aviation (DGCA) certified its services in two steps, on 30 December 2013 and on 21 April 2015

- In March 2026 the Government said that GAGAN is already operational for air navigation, and that the use of NavIC in air traffic management is under discussion with the AAI and the Ministry of Civil Aviation.

2.10 What is planned

- **25 March 2026 (reply in the Lok Sabha):** the roadmap is to complete the NavIC base layer constellation, to enhance the services and to develop indigenous technologies, including a space-grade atomic clock.
- **29 July 2026 (written reply in the Lok Sabha):** NVS-03 is ready for launch, and NVS-04 and NVS-05 are in advanced stages of realisation.
- Communication satellites, satellites for defence and space applications in daily life are separate topics on other days.

3. Extra section: the navigation satellite systems of the world compared

System · GPS
Run by · United States
Global or regional · Global
Satellites, as the operator or the cited source states · A baseline of 24 slots, which can be expanded; the United States is committed to keeping at least 24 operational satellites available 95 per cent of the time
Orbit · MEO at about 20,200 km; six orbital planes; each satellite circles the Earth twice a day

System · GLONASS
Run by · Russia
Global or regional · Global
Satellites, as the operator or the cited source states · 24 satellites are used for navigation
Orbit · Roughly circular orbits at 19,100 km, which falls in MEO as Topic 7 defines it; three orbital planes; inclination 64.8°

System · Galileo
Run by · Europe
Global or regional · Global
Satellites, as the operator or the cited source states · A nominal constellation of 24 satellites, to which auxiliary satellites may be added, as the European GNSS Service Centre's page stated on 11 October 2026
Orbit · Three circular MEO planes at 23,222 km; inclination 56°

System · BeiDou (BDS)
Run by · China
Global or regional · Global in its third step, BDS-3
Satellites, as the operator or the cited source states · 30 in BDS-3: 24 in MEO, 3 in IGSO and 3 in GEO
Orbit · Three kinds of orbit: MEO, IGSO and GEO

System · QZSS (Michibiki)
Run by · Japan
Global or regional · Regional: the Asia-Oceania region

Satellites, as the operator or the cited source states · Four-satellite service began in November 2018. Expansion towards seven is planned; a Cabinet Office notice of 30 July 2026 describes a six-satellite operating phase after QZS-7 enters service

Orbit · Mainly quasi-zenith orbits, together with geostationary orbit

System · NavIC

Run by · India

Global or regional · Regional: India and up to 1,500 km beyond its boundary

Satellites, as the operator or the cited source states · 7 in the design

Orbit · GEO and IGSO only

- **BeiDou grew in three steps:** BDS-1 by 2000, serving China; BDS-2 by 2012, serving the Asia-Pacific region; BDS-3 in 2020, serving the whole world. So BeiDou began as a regional system and became a global one.
- **Galileo:** the European Space Agency calls it Europe's own global navigation satellite system, under civilian control. Its initial services became available on 15 December 2016.
- **GLONASS** was brought to a full constellation of 24 satellites in 1995. Its satellites take 11 hours 15 minutes 44 seconds for one round.
- **QZSS** is built to work together with GPS: its satellites are compatible with GPS.
- **Global against regional:** four systems are global (GPS, GLONASS, Galileo and BeiDou) and two are regional (NavIC and QZSS).

4. Three common exam traps

1. **"NavIC is India's GPS, so it covers the whole world."** NavIC is a regional system. The word "Regional" stood in its earlier name, IRNSS. Its service area is India and a region up to 1,500 km beyond India's boundary. The global systems are GPS, GLONASS, Galileo and BeiDou. The other regional system is Japan's QZSS.
2. **"GAGAN is a part of NavIC" or "GAGAN is India's second navigation constellation."** GAGAN is an augmentation system: it improves satellite navigation for aircraft over India and depends on GPS. ISRO built it with the Airports Authority of India. NavIC is an independent system with its own satellites and its own system time.
3. **Taking the design figure for the working figure, and a launch for a working satellite.** Seven is the number in the design. Eleven satellites have been launched, but IRNSS-1H could not be placed in its orbit and NVS-02 stayed in an elliptical orbit. A satellite with no functioning atomic clock can still send messages, but it cannot give the positioning service. The number of satellites giving the service must always be read with its date.

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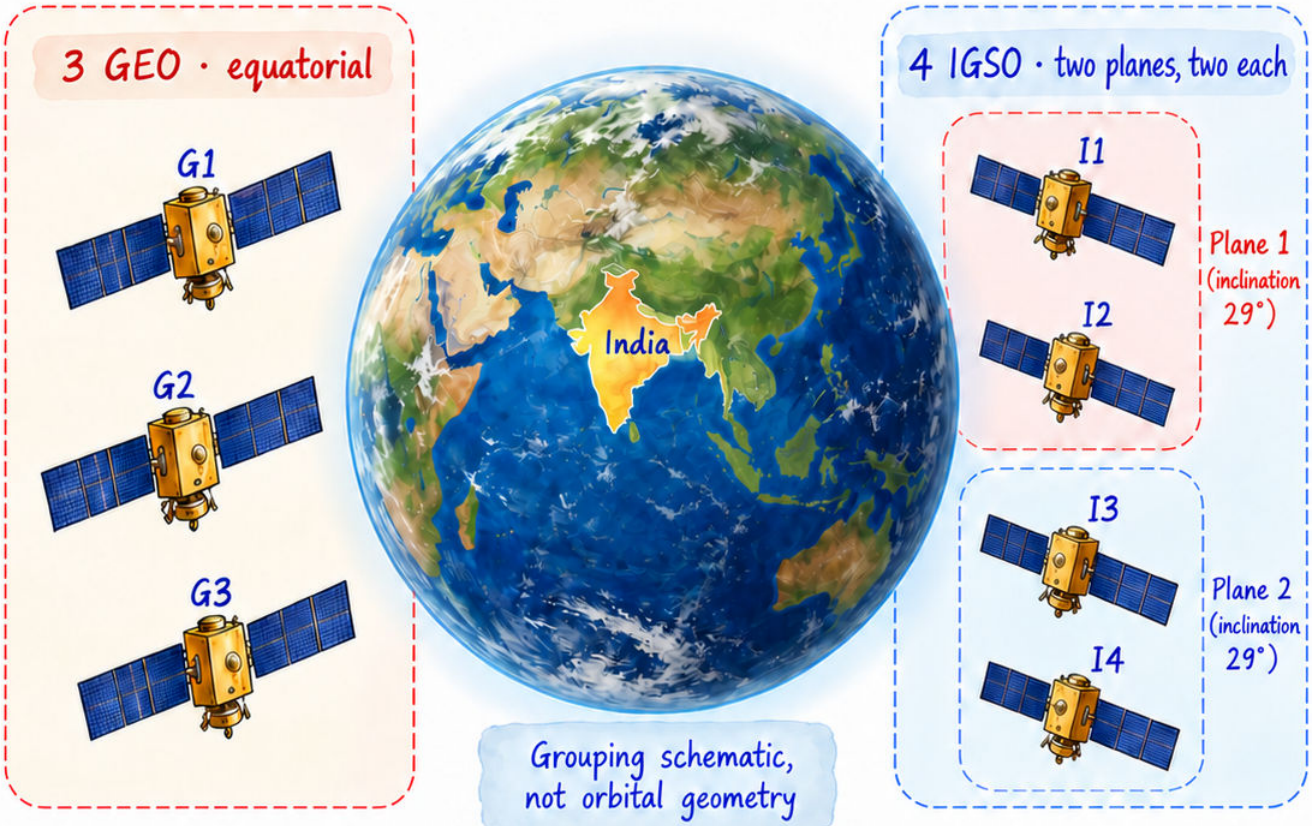
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NavIC: seven satellites in the design

NavIC = Navigation with Indian Constellation; formerly IRNSS. Designed with 7 satellites.

3 satellites in Geostationary Earth Orbit (GEO) over the equator.

4 satellites in Inclined Geosynchronous Orbit (IGSO) on two inclined planes (2 satellites per plane).



Grouping schematic, not orbital geometry

Provides regional navigation services, not global.

Coverage is over India and about 1,500 km beyond its boundary.

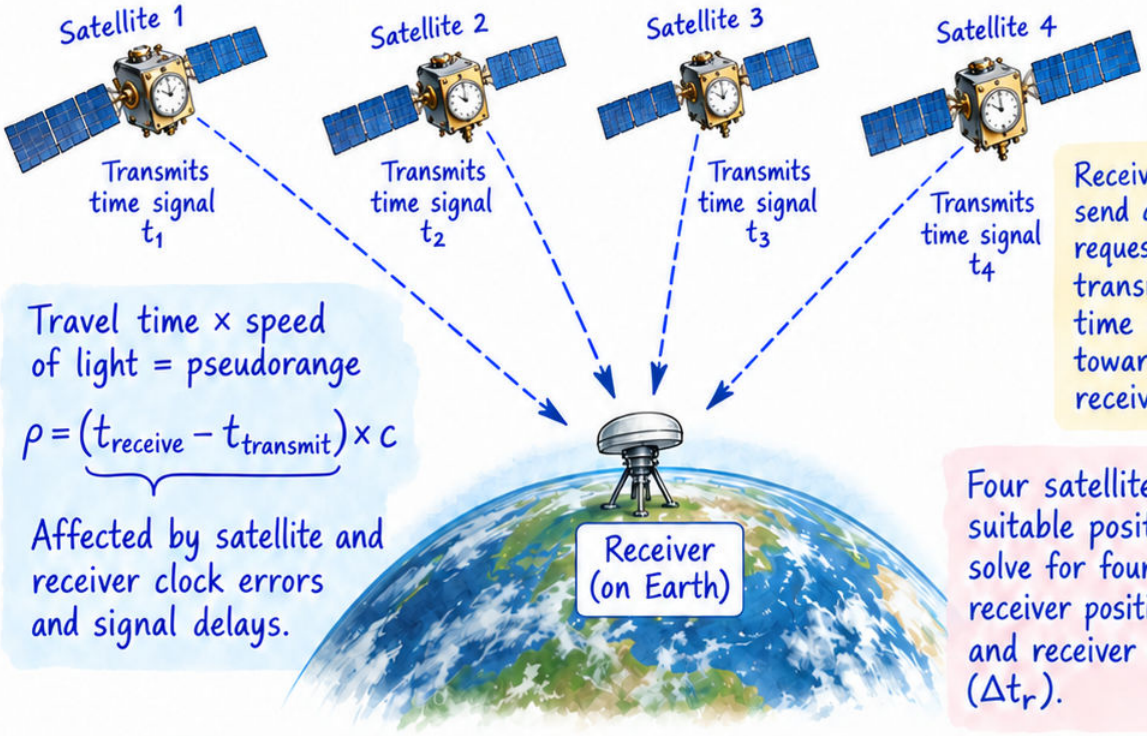
GEO and IGSO satellites are at about 36,000 km altitude (geosynchronous). No MEO satellites in the base design.

The design count (7 satellites: 3 GEO + 4 IGSO) is distinct from the current working count.

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Navigation is a timing problem



Travel time × speed of light = pseudorange

$$\rho = (t_{receive} - t_{transmit}) \times c$$

Affected by satellite and receiver clock errors and signal delays.

Receiver does not send any ranging request. Satellites transmit their time signals towards the receiver.

Four satellites at suitable positions solve for four unknowns: receiver position (x, y, z) and receiver clock offset (Δt_r).

Atomic-clock precision matters

- Satellites carry highly precise atomic clocks.
- Accurate time signals enable precise ranging and reliable positioning.



Atomic clock (in satellite)

Redundancy keeps satellites healthy

- Each satellite carries multiple clocks (redundant).
- One failed redundant clock does not automatically disable the satellite.



One failed redundant clock does not disable the satellite.

If no functioning clock

- Normal positioning signals are unavailable.
- Messaging signals may still remain operational.



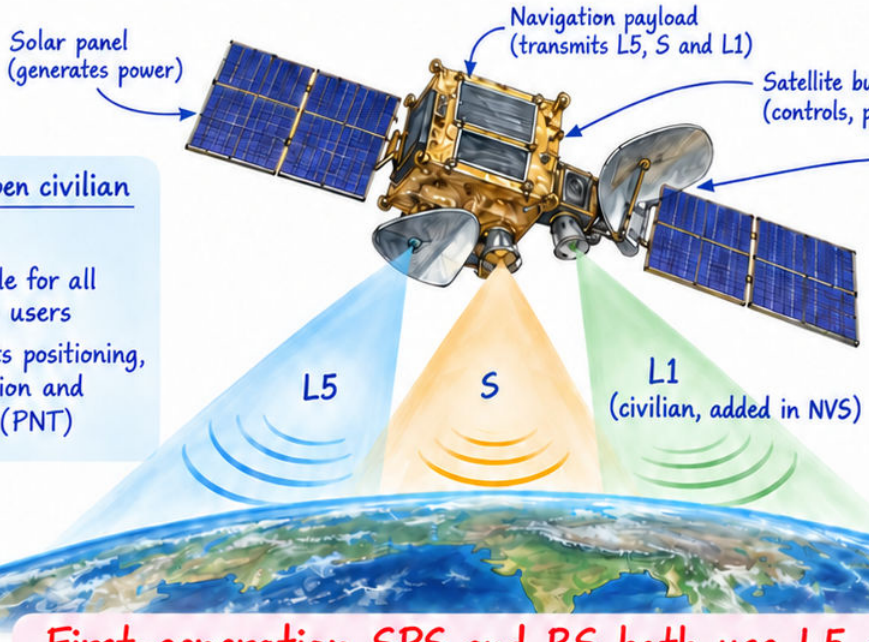
Positioning signals unavailable

Messaging signals may remain

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Signals, services and the new generation



SPS: open civilian service

- Available for all civilian users
- Supports positioning, navigation and timing (PNT)

RS: encrypted, authorised users

- Encrypted and restricted access
- For authorised users only

First-generation SPS and RS both use L5 and S

First generation (IRNSS)

- Transmits L5 + S signals



NVS generation

- Adds L1 civilian signal along with L5 + S



NVS launch details



NVS-01

- Launch vehicle: GSLV-F12
- Date: 29 May 2023
- Indigenous rubidium clock



NVS-02

- Launch vehicle: GSLV-F15
- Date: 29 January 2025
- Orbit-raising failed
- Planned final orbit not reached

Signal frequencies

L5	= 1176.45 MHz
S	= 2492.028 MHz (ISRO SPS ICD, 2017)
L1	= 1575.42 MHz (added in NVS)

Accuracy specification

- Position better than 20 m (2σ)
- This is a specification and not a guarantee for every fix.



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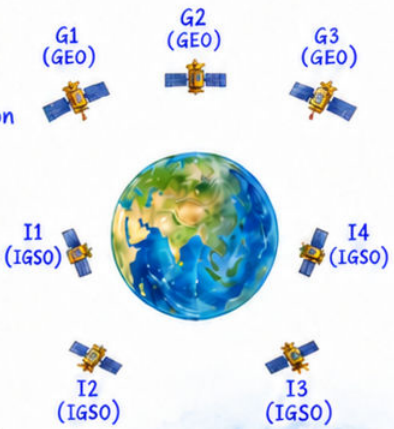
NavIC and GAGAN solve different problems

NavIC

Navigation with Indian Constellation
Earlier name: IRNSS

- Independent regional navigation system developed by India.
- Uses its own satellites and system time (IRNSS time).
- Provides positioning, navigation and timing (PNT) services in the Indian region.

NavIC base design: 7 satellites · grouping schematic



GAGAN (GPS Aided Geo Augmented Navigation)

- Satellite based augmentation system for GPS.
- Developed jointly by ISRO and Airports Authority of India (AAI).
- Provides augmentation services to improve GPS accuracy, integrity and reliability for civil aviation.



Uses (NavIC)



Status snapshot (as on 29 July 2026) — PNT satellites

Three PNT satellites are in operation



Standalone basic positioning requires four satellites



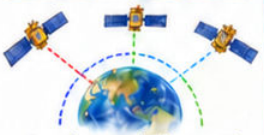
Four satellites needed for basic positioning

Timing service is functional



Time service is functional (as on 29 July 2026)

Multi-constellation use is possible



Can be used along with other navigation systems (as on 29 July 2026)

Note: All operational details are as on 29 July 2026 and are not permanent.

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Clocks: angle between the hands

1. Concept in one line

On a 12-hour dial the minute hand turns 6° a minute and the hour hand 0.5° a minute, so the angle between the two hands at any time can be worked out from the time alone. The exam asks for that angle (the smaller one or the reflex one) at a given time, and for the angle through which a hand turns in a given interval.

2. Revision notes

2.1 The dial: spaces and degrees

- Every question here is about a clock with the ordinary round dial. The dial carries the numbers 1 to 12 and two hands: the short hour hand and the long minute hand. Both hands turn in the same direction, from 12 towards 1, 2, 3 and so on. This direction is called clockwise.
- One full round of the dial is 360°. The 12 numbers divide the dial into 12 equal **hour spaces**. The 60 minute marks divide it into 60 equal **minute spaces**.

Division of the dial	How many in the full dial	Degrees in each
Hour space (from one number to the next)	12	360 ÷ 12 = 30°
Minute space (from one minute mark to the next)	60	360 ÷ 60 = 6°

- One hour space holds 5 minute spaces: 5 × 6° = 30°.
- So, measured clockwise from 12, the numbers on the dial stand at fixed angles: the number 1 at 30°, the number 2 at 60°, the number 3 at 90°, the number 6 at 180°, the number 9 at 270°, and the number 12 at 0° (or 360°).
- Names of angles used in this topic: a right angle is 90°; a straight angle is 180°; a reflex angle is an angle of more than 180° and less than 360°.

2.2 The speeds of the two hands

What is measured	Minute hand	Hour hand
Time taken for one full round (360°)	60 minutes	12 hours = 720 minutes
Angle turned in 1 hour	360°	30° (1 hour space)
Angle turned in 1 minute	6° (1 minute space)	0.5° (1/2°)

What is measured	Minute hand	Hour hand
Angle turned in 30 seconds	3°	0.25° (1/4°)

- The hour hand does not jump from one number to the next. It keeps turning all the time: 30° in 60 minutes, that is, 1° in every 2 minutes.
- **How much the minute hand gains.** In 1 minute the minute hand turns 6° and the hour hand turns 0.5°. So in every minute the minute hand turns 6 - 0.5 = 5.5° (5 1/2°) more than the hour hand. This is called its gain on the hour hand. In 1 hour the gain is 5.5 × 60 = 330°.
- The speed of the minute hand is 12 times the speed of the hour hand (6 ÷ 0.5 = 12).

2.3 The formula and where it comes from

Take the time as H hours M minutes. Measure the positions of both hands clockwise from 12.

1. At exactly H o'clock the hour hand is on the number H, that is, 30H degrees from 12.
2. In the M minutes after that, it turns 0.5M degrees more. Position of the hour hand = 30H + 0.5M.
3. The minute hand starts every hour from 12 and turns 6° a minute. Position of the minute hand = 6M.
4. The angle between the hands is the difference of these two positions: (30H + 0.5M) - 6M = 30H - 5.5M.
5. If this value comes out as a negative number, the minute hand has crossed the hour hand and is ahead of it; drop the minus sign. That is what the two upright bars mean.

Angle = |30H - 5.5M|

- Since 5.5 = 11/2, the same formula can also be written as |60H - 11M| ÷ 2. In this form no decimals appear until the last step.
- Read it this way: at exactly H o'clock the hour hand is 30H degrees ahead of the minute hand; after that, for M minutes, the minute hand gains 5.5° a minute.
- H is the hour that the clock shows; its value is from 0 to 11 (for 12, see 2.5). M is the number of minutes gone after that hour; its value is from 0 to less than 60. M can also be a fraction, for example 12.5 (12 1/2).
- A check on the form of the answer: if M is an even number, the answer is a whole number. If M is an odd number, the answer ends in .5. If M carries a half minute, the answer ends in .25 or in .75.

2.4 The smaller angle and the reflex angle

- Two hands make two angles at the centre of the dial, one on each side. The two add up to 360°. If one is 100°, the other is 260°.
- The formula gives one of the two. It can be either.

Value given by the formula	Which angle it is	The other angle
Greater than 0° and less than 180°	The smaller angle	Reflex angle = 360° - that value
More than 180°	The reflex angle	Smaller angle = 360° - that value

- If the value is exactly 180°, the two hands lie in one straight line and both angles are 180°. If the value is 0°, one hand lies over the other. At 0°, the other turn is a whole angle of 360°, not a reflex angle.
- When a question asks for "the angle between the hands" and adds no other word, give the smaller angle; the answer then does not go above 180°. Give the reflex angle only when the question asks for it.
- Example: 8:00. The formula gives 30 × 8 = 240°. This is more than 180°, so it is the reflex angle. The smaller angle is 360 - 240 = 120°.

2.5 12 o'clock, times after 12 and 24-hour times

- At 12 o'clock the hour hand is at the starting point, that is, at 0°. So for any time from 12:00 to 12:59 take **H = 0**, not 12.
- For example, the angle at 12:20 is |0 - 5.5 × 20| = 110°.
- If H is taken as 12, the formula gives |360 - 110| = 250°. This is the reflex angle of the same pair, and the rule in 2.4 brings back 110°. The answer is not wrong, but with H = 0 the working is shorter and there is less room for a slip.
- A time given on the 24-hour clock: if the hours are 12 or more, take 12 away from them. On the dial 15:40 is 3:40, so H = 3. In the same way 00:25 means H = 0, M = 25.
- Whether the time is before 12 noon (a.m.) or after it (p.m.) does not change the angle: the hands stand the same way at 3:40 a.m. and at 3:40 p.m.

2.6 The second way: where each hand stands

- Find the position of each hand in degrees from 12. Take the smaller value away from the larger. Then use the rule in 2.4.
- Hour hand = 30H + 0.5M. Minute hand = 6M.
- This is the formula before its two parts were joined. So the two ways must give the same answer. Check one way by the other.

Time	Formula: 30H, 5.5M	Value	Second way: hour hand, minute hand	Difference	Smaller angle
7:24	210, 132	78°	222°, 144°	78°	78°
11:40	330, 220	110°	350°, 240°	110°	110°

Time	Formula: 30H, 5.5M	Value	Second way: hour hand, minute hand	Difference	Smaller angle
1:50	30, 275	245°	55°, 300°	245°	115°

- The second way writes the movement of the hour hand (0.5M) as a separate step, so there is less chance of forgetting it.

2.7 The angle a hand turns in an interval

- This is a different kind of question. It does not ask for the angle between the two hands at one moment; it asks how far one hand has turned between two moments. Angle turned = speed × time.
- Minute hand: 6° × the number of minutes. Hour hand: 0.5° × the number of minutes, or 30° × the number of hours.

Interval	Angle the minute hand turns	Angle the hour hand turns
10 minutes	60°	5°
15 minutes	90°	7.5°
20 minutes	120°	10°
45 minutes	270°	22.5°
1 hour	360° (1 round)	30°
2 hours 30 minutes	900° (2 1/2 rounds)	75°
12 hours	4,320° (12 rounds)	360° (1 round)

- An angle turned can be more than 360°; do not bring it down to 180° or less. The rule in 2.4 is only for the angle between the two hands.
- **Rounds of the minute hand.** The minute hand takes 1 hour for one round, and in 1 hour the hour hand turns 30°. So while the minute hand goes round n times, the hour hand turns 30n degrees: 60° for 2 rounds; 105° for 3 1/2 rounds.
- In any interval the angle the hour hand turns is 1/12 of the angle the minute hand turns: 900 ÷ 12 = 75°.
- **An interval that crosses 12.** Count the minutes first. From 11:40 a.m. to 1:15 p.m. there are 20 + 60 + 15 = 95 minutes. In this interval the hour hand turns 95 × 0.5 = 47.5°, and the minute hand turns 95 × 6 = 570°.

2.8 The angle at each quarter hour: 1:00 to 3:45

Time	Hour hand from 12	Minute hand from 12	Difference	Smaller angle
1:00	30°	0°	30°	30°

Time	Hour hand from 12	Minute hand from 12	Difference	Smaller angle
1:15	37.5°	90°	52.5°	52.5°
1:30	45°	180°	135°	135°
1:45	52.5°	270°	217.5°	142.5°
2:00	60°	0°	60°	60°
2:15	67.5°	90°	22.5°	22.5°
2:30	75°	180°	105°	105°
2:45	82.5°	270°	187.5°	172.5°
3:00	90°	0°	90°	90°
3:15	97.5°	90°	7.5°	7.5°
3:30	105°	180°	75°	75°
3:45	112.5°	270°	157.5°	157.5°

- In every quarter hour the minute hand gains 5.5 × 15 = 82.5° on the hour hand. At 1:00 it is 30° behind the hour hand. After that it is 52.5° ahead at 1:15, 135° ahead at 1:30 and 217.5° ahead at 1:45.
- At times ending in :15 and :45 the answer always ends in .5; at times ending in :00 and :30 it is a whole number. A whole number for a time ending in :15 or :45 is a sign that the hour hand was left on the hour number.

Other days cover: the times at which the hands lie one over the other, are opposite each other or are at right angles; clocks that run fast or slow; the images of a clock in a mirror and in water; and how many times such events happen in a day.

3. Extra section: worked examples

A. The angle at a given time

1. **A full hour: 5:00.** M = 0, so the angle is 30 × 5 = 150°. This is less than 180°, so it is the smaller angle. The reflex angle is 360 - 150 = 210°.
2. **A half hour: 7:30.** Angle = |30 × 7 - 5.5 × 30| = |210 - 165| = 45°. Check: the hour hand is at 210 + 15 = 225° and the minute hand is at 180°; 225 - 180 = 45°.
3. **A quarter hour: 9:45.** Angle = |270 - 247.5| = 22.5°. Check: the hour hand is at 270 + 22.5 = 292.5°; the minute hand is at 270°; the difference is 22.5°.
4. **An odd minute: 6:17.** Angle = |180 - 93.5| = 86.5°. By the second form: |60 × 6 - 11 × 17| ÷ 2 = |360 - 187| ÷ 2 = 173 ÷ 2 = 86.5°.

5. **A value above 180°: 10:08.** The formula gives |300 - 44| = 256°. This is more than 180°, so the smaller angle is 360 - 256 = 104°. Check: the hour hand is at 304° and the minute hand is at 48°; 304 - 48 = 256°.
6. **A time after 12: 12:36.** H = 0. The formula gives |0 - 198| = 198°; the smaller angle is 360 - 198 = 162°. Check: the hour hand is at 18° and the minute hand is at 216°; 216 - 18 = 198°.
7. **A time on the 24-hour clock: 17:20.** On the dial this is 5:20. Angle = |150 - 110| = 40°.
8. **A time with a half minute: 30 seconds after 3:12.** M = 12.5. Angle = |90 - 5.5 × 12.5| = |90 - 68.75| = 21.25° (21 1/4°). Check: the hour hand is at 90 + 6.25 = 96.25°; the minute hand is at 6 × 12.5 = 75°; 96.25 - 75 = 21.25°.

B. The reflex angle

1. **The reflex angle at 8:20.** The formula gives |240 - 110| = 130°; this is the smaller angle. The reflex angle is 360 - 130 = 230°.
2. **The reflex angle at 12:48.** H = 0. The formula gives |0 - 264| = 264°. This is more than 180°, so it is already the reflex angle; do not take it away from 360 again. The smaller angle is 96°.

C. The angle turned in an interval

1. **The minute hand in 36 minutes.** 36 × 6 = 216°.
2. **The hour hand in 2 hours 24 minutes.** 144 minutes × 0.5 = 72°. Another way: 2 × 30 + 24 × 0.5 = 60 + 12 = 72°.
3. **The minute hand goes round 4 full times and then turns 60° more. How much has the hour hand turned in that time?** The minute hand has turned 4 × 360 + 60 = 1,500°. The hour hand has turned 1,500 ÷ 12 = 125°. Check: the interval is 4 hours 10 minutes, that is, 250 minutes; 250 × 0.5 = 125°.
4. **Both hands, from 9:50 p.m. to 12:30 a.m. after midnight.** The interval is 10 + 120 + 30 = 160 minutes. The hour hand turns 160 × 0.5 = 80°; the minute hand turns 160 × 6 = 960°. Check of the hour hand by positions: at 9:50 it is at 270 + 25 = 295°, and at 12:30 it is at 15°. From 295° to 360° is 65°; after that there are 15° more; in all 65 + 15 = 80°.

4. Three common exam traps

1. **Leaving the hour hand on the hour number.** The hour hand turns 0.5° in every minute. At 4:30 it is not on the 4; it is exactly halfway between the 4 and the 5, at 135°. So the angle is 45°, not the 60° that comes from 180 - 120. The 0.5M in the formula is this movement.
2. **Giving the angle that was not asked.** The formula can give a value of more than 180°. At 1:50 it gives 245°; this is the reflex angle, and the smaller angle is 115°. "The angle between the hands" means the smaller angle. If the reflex angle is asked, give the larger one. Also, the angle that one hand turns in an interval must not be taken away from 360°.
3. **Using 6° for the hour hand.** 6° is the angle the minute hand turns in 1 minute, and the size of 1 minute space. The hour hand turns 30° in 1 hour and only 0.5° in 1 minute. In 40 minutes the hour hand turns 20°, not 240°. In the same way the number 4 on the dial stands at 4 × 30 = 120°, not at 4 × 6 = 24°.

Source references

Full source-use descriptions are retained in the complete HTML review copy.

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Clock hands: two speeds, one dial



Basic facts

- A clock has 12 equal hour divisions and 60 equal minute divisions on the same dial.
- A full turn of a hand is 360°.
- Gap between two consecutive hours = 30°.
- Gap between two consecutive minutes = 6°.


= Minute hand (red) (faster hand)


= Hour hand (blue) (slower hand)

Speeds of the hands

- Minute hand moves 6° per minute.
- Hour hand moves 0.5° per minute.
- Relative speed (minute hand w.r.t. hour hand) = 6° − 0.5° = 5.5° per minute.

Why these values?

- In 60 minutes, the minute hand completes one full turn of 360°.

$$\frac{360°}{60} = 6° \text{ per minute}$$

- In 12 hours (720 minutes), the hour hand completes one full turn of 360°.

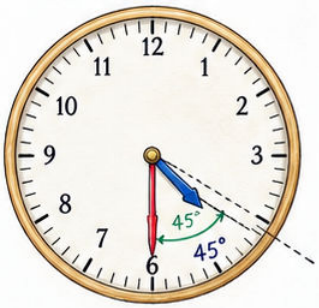
$$\frac{360°}{720} = 0.5° \text{ per minute}$$

Relative speed

- The minute hand gains on the hour hand at

$$6° - 0.5° = 5.5° \text{ per minute.}$$

Example: 4 : 30

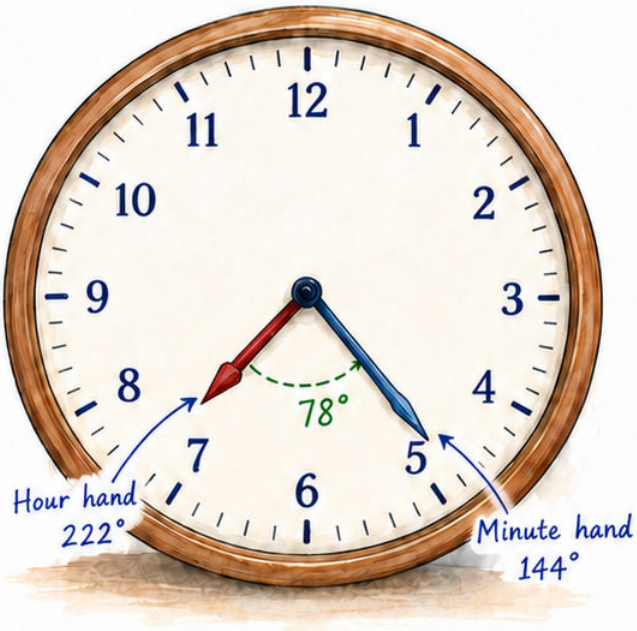


- At 4 : 30, the minute hand is at 6 (180° from 12).
- The hour hand is halfway between 4 and 5.
- Gap between 4 and 5 = 30°, so halfway gap = 15°.
- Hence, the smaller angle between the hands = 30° + 15° = 45°.

Therefore, at 4 : 30, the angle between the minute and hour hands is 45°.

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Build the angle formula



1. Positions of the hands

- Hour hand position from 12:

$$\theta_H = 30H + 0.5M \quad \text{(in degrees)}$$

H = hour (use 0 at 12)
M = minutes (0 to 59)

- Minute hand position from 12:

$$\theta_M = 6M \quad \text{(in degrees)}$$

2. Raw difference between the hands

$$D = |\theta_H - \theta_M| = |30H - 5.5M|$$

This gives the angle between the hands, but it can be the larger angle ($> 180°$).

3. Smaller angle between the hands

If $D > 180°$, then
smaller angle $= 360° - D$.

Otherwise, smaller angle $= D$.

Example: Find the angle at 7:24

Here, $H = 7$, $M = 24$.

Hour hand position:

$$\theta_H = 30H + 0.5M = 30(7) + 0.5(24)$$
$$= 210 + 12 = 222°.$$

Minute hand position:

$$\theta_M = 6M = 6(24) = 144°.$$

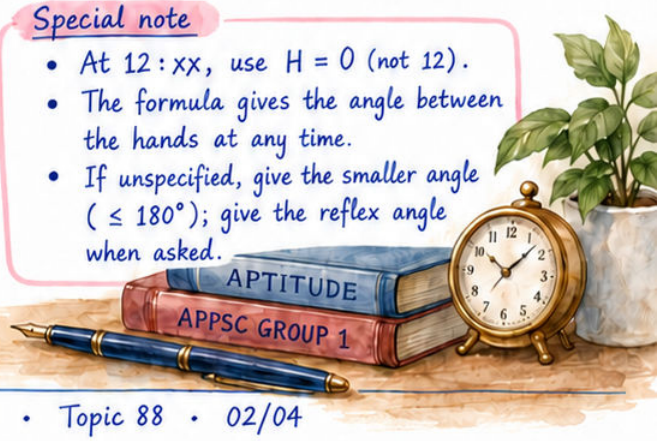
Raw difference:

$$D = |222 - 144| = |78| = 78°.$$

Since $78° < 180°$, the smaller angle $= 78°$.

Special note

- At 12:xx, use $H = 0$ (not 12).
- The formula gives the angle between the hands at any time.
- If unspecified, give the smaller angle ($\leq 180°$); give the reflex angle when asked.



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Smaller, reflex and whole angles

A reflex angle is an angle which is strictly greater than 180° and less than 360°.

180° < reflex angle < 360°



8:00

Angle between the hands = 120° (smaller angle)

Reflex angle = 240°



6:00

Angle between the hands = 180° (straight angle)

Both angles are 180°. Neither is reflex.



12:00

The hands overlap.
Smaller angle = 0°
Other possible turn = 360° (whole angle)
It is not a reflex angle.

Worked example: 1:50



Minute hand at 50 minutes
= 50 × 6° = 300°.
Hour hand at 1:50
= 1 × 30° + 50 × 0.5°
= 30° + 25° = 55°.
Raw angle (|300° − 55°|)
= 245°.
Smaller angle
= 360° − 245° = 115°.

Thus,
Hour hand position = 55°
Minute hand position = 300°
Raw angle = 245°
Smaller angle = 115°
Reflex angle = 245°
(since 245° is greater than 180° and less than 360°).

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Angle turned is not angle between hands

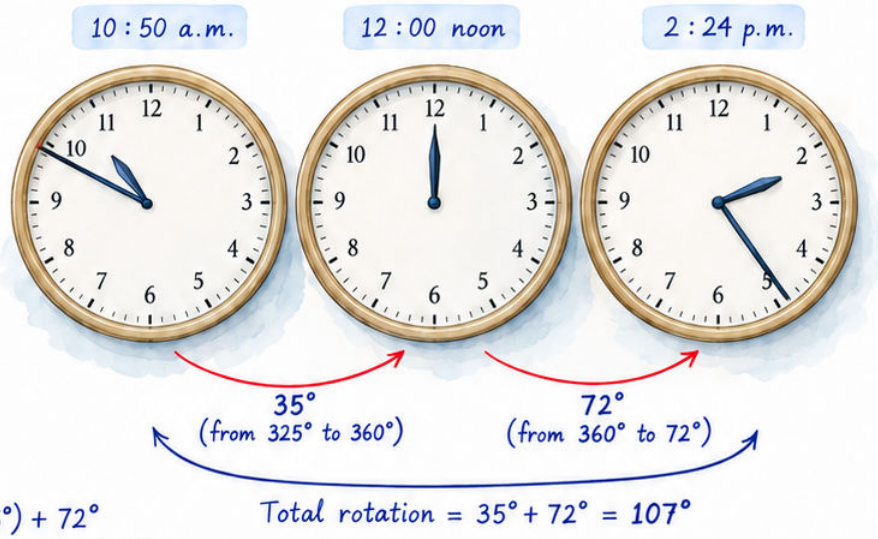
Example 1 : Find the angle turned by the hour hand from 10:50 a.m. to 2:24 p.m.

1) Elapsed time :
   2:24 p.m. − 10:50 a.m.
   = 3 h 34 m
   = 214 minutes

2) Hour-hand rotation :
   Each minute = 0.5°
   Rotation = 214 × 0.5°
   = 107°

3) Check using positions :
   - At 10:50 → 325°
   - At 12:00 → 360°
   - At 2:24 → 72°

   Angle turned = (360° − 325°) + 72°
   = 35° + 72° = 107° ✓



Example 2 : At 2:52, find the angle between the hands.



1) Hour-hand position :
   At 2:52, hour hand = 2 × 30° + 52 × 0.5°
   = 60° + 26° = 86°

2) Minute-hand position :
   At 2:52, minute hand = 52 × 6° = 312°

3) Difference between the positions :
   |312° − 86°| = 226°

4) Smaller angle between the hands :
   360° − 226° = 134°

Important : Do not subtract the elapsed rotation from 360° merely because it exceeds 180°. The hour hand may turn more than 180° in the elapsed time. Use the actual rotation (e.g., 107° in Example 1) and do not replace it by 360° − 107° = 253°.

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Time and work: the LCM method

1. Concept in one line

In a time and work sum the days taken by different workers cannot be added, but the work they do in one day can. The LCM method takes the whole work as the least common multiple (LCM) of the given numbers of days, so that each given time turns into a whole number of units a day and not a fraction such as 1/12 or 1/18; the exam asks for the time taken by workers together, or by one of them alone.

2. Revision notes

2.1 Work, time and rate

- These sums assume that each worker works at a steady pace, and at the same pace whether alone or with others.
- **Rate** means the work done in one day (or in one hour, if the times are given in hours). Work = rate × time. So time = work ÷ rate, and rate = work ÷ time.
- **The fraction method** takes the whole work as 1. If A alone finishes the work in n days, A's rate is 1/n of the work a day. A worker who takes 12 days does 1/12 of the work a day.
- **Rates can be added; days cannot.** When A and B work together, the work done in one day is A's rate plus B's rate.
- NCERT Class VIII puts the basic fact in one line: "For a given job, more the number of workers, less will be the time taken to complete the work." So workers together always take less time than the fastest of them alone.
- Guidebooks call the rate "efficiency". Comparing workers through their efficiencies is Topic 189.

2.2 The LCM method: four steps

The actual size of the work does not change the answer, so any convenient number of units can be taken for it. The handiest number is the LCM of the given times (Topic 79), because it is the smallest number that each of them divides exactly.

1. **Total work.** Take the LCM of the given numbers of days as the total work, in units.
2. **Rates.** Divide the total work by each worker's days. This gives that worker's units a day, a whole number.
3. **Combine.** Add the rates of those who work together. Subtract a rate to take a worker out.
4. **Time.** Divide the work to be done by the rate of those doing it.

- Example: A alone can do a work in 12 days and B alone in 18 days. The LCM of 12 and 18 is 36, so the work is 36 units. A does 36 ÷ 12 = 3 units a day and B does 36 ÷ 18 = 2 units a day. Together they do 5 units a day, and they take 36 ÷ 5 = 7 1/5 days.
- Any common multiple gives the same answer: with 72 units the rates are 6 and 4, and 72 ÷ 10 = 7 1/5 days. The LCM only keeps the numbers smallest.

- A time given for a pair or a group ("A and B together take 8 days") goes into the LCM like any other time; the rate it gives is the rate of that pair.
- If the times are in hours, the rates are units an hour and the answer comes in hours.

2.3 The same sum by both methods

Step	Fraction method	LCM method
Total work	1	36 units (the LCM of 12 and 18)
A's rate	1/12 of the work a day	36 ÷ 12 = 3 units a day
B's rate	1/18 of the work a day	36 ÷ 18 = 2 units a day
Rate of A and B together	1/12 + 1/18 = 3/36 + 2/36 = 5/36	3 + 2 = 5 units a day
Time taken together	1 ÷ 5/36 = 36/5 = 7 1/5 days	36 ÷ 5 = 7 1/5 days

- The two methods are the same arithmetic. To add 1/12 and 1/18 the fraction method needs a common denominator, and the smallest one is their LCM, 36 (Topic 19). The LCM method takes that 36 at the start. So the numerators 3 and 2 appear as whole units, and no fraction has to be written until the last step.

2.4 The standard cases

Case	Example	What to do with the rates	Answer
A and B together	A takes 12 days and B takes 18 days; the work is 36 units	Add: 3 + 2 = 5	36 ÷ 5 = 7 1/5 days
A, B and C together	They take 12, 15 and 20 days; the work is 60 units	Add all three: 5 + 4 + 3 = 12	60 ÷ 12 = 5 days
B alone, from the times of "A and B together" and "A alone"	Together 8 days, A alone 12 days; the work is 24 units	Subtract: 3 - 2 = 1	24 ÷ 1 = 24 days
All three together, from the times of the three pairs	A and B take 24 days, B and C take 28 days, A and C take 56 days; the work is 168 units	Add the three pair rates and halve the total: (7 + 6 + 3) ÷ 2 = 8	168 ÷ 8 = 21 days
One worker alone, from the times of the three pairs	The same pairs; C's time is wanted	From the rate of all three, subtract the rate of the pair without C: 8 - 7 = 1	168 ÷ 1 = 168 days

Case	Example	What to do with the rates	Answer
A part of the work	A takes 20 days and B takes 30 days; the work is 60 units; both together are to do two thirds of it	Part to be done: 2/3 of 60 = 40 units; rate 3 + 2 = 5	40 ÷ 5 = 8 days

- **Why the three pair rates are halved.** The pairs "A and B", "B and C" and "A and C" between them name each worker twice. So the three pair rates added together are twice the rate of A, B and C working together.
- **To find one worker from the pairs,** take the rate of all three and subtract the rate of the pair in which that worker is missing.
- **If the three pair rates add up to an odd number,** halving leaves half a unit: pair times of 6, 8 and 12 days give 4 + 3 + 2 = 9, so all three do 4 1/2 units a day. Work on with the half, or take twice the LCM as the work (48 units: 8 + 6 + 4 = 18, so 9 units a day).
- **A part of the work.** Only step 4 changes: divide the part to be done, not the whole work, by the rate. Half of 60 units is 30 units, and A alone (3 units a day) does it in 10 days.
- **"A is three times as good a worker as B"** means that A's rate is three times B's rate, so A takes one third of B's time. If B takes 24 days, A takes 8 days; with 24 units of work the rates are 3 and 1, and together they take 24 ÷ 4 = 6 days. The ratio method built on this idea is Topic 189.

2.5 The short formula for two workers

- If A alone takes x days and B alone takes y days, together they take xy/(x + y) days: the product of the two times divided by their sum.
- **Where it comes from, in fractions.** The rate of the two together is 1/x + 1/y = (x + y)/xy of the work a day. The time is 1 divided by that rate, which is xy/(x + y).
- **Where it comes from, in units.** Take the work as xy units; this product is always a common multiple of x and y. A does xy ÷ x = y units a day and B does x units a day. Together they do x + y units a day, and take xy ÷ (x + y) days.
- Example: 12 days and 18 days give 216 ÷ 30 = 7 1/5 days.
- **Backwards.** If A and B together take t days and A alone takes a days, B alone takes at/(a - t) days: 12 × 8 ÷ (12 - 8) = 24 days.
- **Three workers.** The formula becomes xyz/(xy + yz + zx), not xyz/(x + y + z). For 12, 15 and 20 days it gives 3,600 ÷ 720 = 5 days. With three workers the LCM method is quicker and safer.

2.6 When the answer is a fraction of a day

- Leave it as a fraction or a mixed fraction: 36 ÷ 5 = 7 1/5 days. The options may show it as a decimal, 7.2 days.
- Keep it exact. 20/3 days is 6 2/3 days; 6.67 is only an approximation.

- Do not round it. 7 1/5 days is neither 7 days nor 8 days. Only when the question asks on which day the work is finished does the answer become "on the 8th day".
- Change the fraction into hours only when the question gives the hours worked in a day. With 10 hours of work a day, 1/5 of a day is 2 hours.

2.7 Quick results for common pairs

A alone (days)	B alone (days)	Total work (LCM, in units)	Rates of A and B (units a day)	Together (days)
6	12	12	2 and 1	4
10	15	30	3 and 2	6
12	18	36	3 and 2	7 1/5
20	30	60	3 and 2	12
12	24	24	2 and 1	8
12	36	36	3 and 1	9
10	40	40	4 and 1	8
12	20	60	5 and 3	7 1/2
24	40	120	5 and 3	15

- **Patterns.** Times of n and 2n days give 2n/3 days together (two thirds of the smaller time). Times of n and 3n days give 3n/4 days. Times of 2n and 3n days give 6n/5 days. Two workers who each take n days take n/2 days together.
- **Scaling.** If both times are multiplied by the same number, the time together is multiplied by that number too: 10 and 15 days give 6 days, so 20 and 30 days give 12 days.

2.8 Quick checks on an answer

- The time taken together is less than the smallest of the separate times.
- For two workers with different individual times, the combined time lies strictly between half the smaller time and half the larger time: for 12 and 18 days, between 6 and 9 days. If their individual times are equal, the combined time is exactly half that time.
- A worker alone takes longer than any pair or group that includes that worker.

Other days cover efficiency and the ratio method (Topic 189), pipes and cisterns (Topic 339), work and wages (Topic 509), number of workers, days and working hours per day, and the chain rule (Topic 689), and working alternately or leaving in between (Topic 849).

3. Extra section: worked examples by both methods

A. Working together

1. **A alone can do a work in 6 days and B alone in 8 days. How long do they take together?** LCM method: the LCM of 6 and 8 is 24, so the work is 24 units. A does 4 units a day and B does 3 units a day; together they do 7 units a day. Time = 24 ÷ 7 = 3 3/7 days. Fraction method: 1/6 + 1/8 = 4/24 + 3/24 = 7/24, so the time is 24/7 = 3 3/7 days. Formula: 6 × 8 ÷ (6 + 8) = 48 ÷ 14 = 3 3/7 days.
2. **A alone, B alone and C alone take 12, 15 and 20 days. How long do the three take together?** LCM method: the LCM of 12, 15 and 20 is 60 (using the ladder method explained in Topic 79). The rates are 5, 4 and 3 units a day; together the three do 12 units a day. Time = 60 ÷ 12 = 5 days. Fraction method: 1/12 + 1/15 + 1/20 = 5/60 + 4/60 + 3/60 = 12/60 = 1/5, so the time is 5 days.

B. Finding one worker's time

1. **A and B together take 8 days, and A alone takes 12 days. How long does B alone take?** LCM method: the LCM of 8 and 12 is 24 units. A and B together do 3 units a day and A does 2 units a day. So B does 3 - 2 = 1 unit a day, and B takes 24 days. Fraction method: 1/8 - 1/12 = 3/24 - 2/24 = 1/24, so B takes 24 days. Subtracting the days (12 - 8 = 4) is wrong: B alone cannot be faster than A and B together.
2. **A, B and C together take 6 days. A alone takes 12 days and B alone takes 20 days. How long does C alone take?** LCM method: the LCM of 6, 12 and 20 is 60 units. All three together do 10 units a day, A does 5 units a day and B does 3 units a day. So C does 10 - 5 - 3 = 2 units a day, and C takes 30 days. Fraction method: 1/6 - 1/12 - 1/20 = 10/60 - 5/60 - 3/60 = 2/60 = 1/30.

C. The three pairs

1. **A and B together take 24 days, B and C together take 28 days, and A and C together take 56 days.** LCM method: 24 = $2^3 \times 3$, 28 = $2^2 \times 7$ and 56 = $2^3 \times 7$, so the LCM is $2^3 \times 3 \times 7$ = 168 units. The three pair rates are 7, 6 and 3 units a day. Their total is 16, which is twice the rate of all three. So all three together do 8 units a day, and they take 168 ÷ 8 = 21 days. C does 8 - 7 = 1 unit a day, and C takes 168 days. A does 8 - 6 = 2 units a day, and A takes 84 days. B does 8 - 3 = 5 units a day, and B takes 168 ÷ 5 = 33 3/5 days. Check: A + B = 2 + 5 = 7; B + C = 5 + 1 = 6; A + C = 2 + 1 = 3. Fraction method: 1/24 + 1/28 + 1/56 = 7/168 + 6/168 + 3/168 = 16/168, and half of that is 8/168 = 1/21. So all three together take 21 days, and C's rate is 1/21 - 1/24 = 8/168 - 7/168 = 1/168.

D. A part of the work

1. **A alone takes 20 days and B alone takes 30 days.** The work is 60 units, and the rates are 3 and 2 units a day. (a) Both together do two thirds of the work in 40 units ÷ 5 = 8 days. (b) A alone does half of the work in 30 units ÷ 3 = 10 days. (c) In 9 days both together do 9 × 5 = 45 units, which is 45/60 = 3/4 of the work. Fraction method for (a): the rate of the two together is 1/20 + 1/30 = 5/60 = 1/12, and 2/3 ÷ 1/12 = 8 days.

E. Times in hours

1. **One machine alone can print a job in 4 hours and another machine alone in 6 hours. How long do the two take together?** The LCM of 4 and 6 is 12 units. The rates are 3 and 2 units an hour; together the two do 5 units an hour. Time = 12 ÷ 5 = 2 2/5 hours. An hour has 60 minutes, so 2/5 of an hour is 24 minutes. The answer is 2 hours 24 minutes. Fraction method: 1/4 + 1/6 = 3/12 + 2/12 = 5/12, so the time is 12/5 hours.

4. Three common exam traps

1. **Adding or subtracting the days in place of the rates.** If A alone takes 8 days and B alone takes 56 days, together they do not take 8 + 56 = 64 days, nor the average, 32 days. Together they must take less than 8 days. Add the rates: with 56 units of work, 7 + 1 = 8 units a day, so 7 days. In the same way, if the two together take 7 days and A alone takes 8 days, B alone does not take 8 - 7 = 1 day; B takes 56 days.
2. **Halving the days because there are two workers.** "Two workers, so half the time" is true only when both work at the same rate: two workers who each take 8 days finish in 4 days. For 8 days and 56 days, half of 8 (4 days) is too little and half of 56 (28 days) is too much; the right answer is 7 days. A slow partner shortens the time only a little.
3. **Forgetting that the pair totals count each worker twice.** When the times of "A and B", "B and C" and "A and C" are given, the three pair rates added together are the rate of two A's, two B's and two C's. If the pair rates are 7, 6 and 3 units a day, all three together do (7 + 6 + 3) ÷ 2 = 8 units a day, not 16.

Source references

Full source-use descriptions are retained in the complete HTML review copy.

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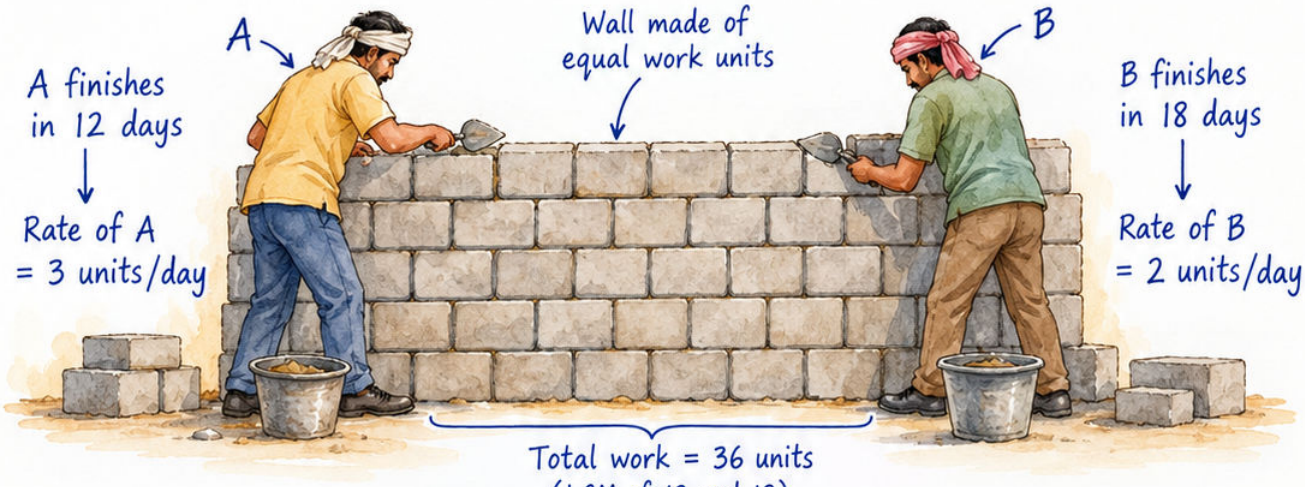
Work is a quantity; rate does it daily

Key Idea

- Work is a quantity (total job).
- Rate tells how much work is done in one day.
- Work = Rate × Time
- Time = $\frac{\text{Work}}{\text{Rate}}$
- When workers work together (no interference), their rates add.

Assumptions in this type of question

- Fixed job (total work is constant).
- Each person works at a constant rate.
- Rates add when working together.
- No interference between the workers.



Choosing the total work

- A finishes the job in 12 days and B in 18 days.
- Take total work as LCM of 12 and 18 = 36 units.
- This means the fixed job is assumed to be 36 equal units of work (for convenient calculation).
- These are **assumed units** and do not represent any actual physical size of the job.

Individual rates

- Rate of A = $\frac{36}{12}$ = 3 units/day
- Rate of B = $\frac{36}{18}$ = 2 units/day

Together

- Rate of (A and B) = 3 + 2 = 5 units/day
- Time to complete the job = $\frac{\text{Work}}{\text{Rate}} = \frac{36}{5}$ days = 7.2 days

Important Note

- We take LCM of the given times to choose a convenient total work so that each person's rate becomes a whole number of units per day.
- The LCM is just a **mathematical convenience**. It is not the actual physical size of the job.
- The final time found is for the same fixed job with the combined rate.

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Three workers: choose one common total

A alone completes the work in 30 days.



Rate of A

$= \frac{1}{30}$ work/day

$= 7$ units/day

B alone completes the work in 42 days.



Rate of B

$= \frac{1}{42}$ work/day

$= 5$ units/day

C alone completes the work in 70 days.



Rate of C

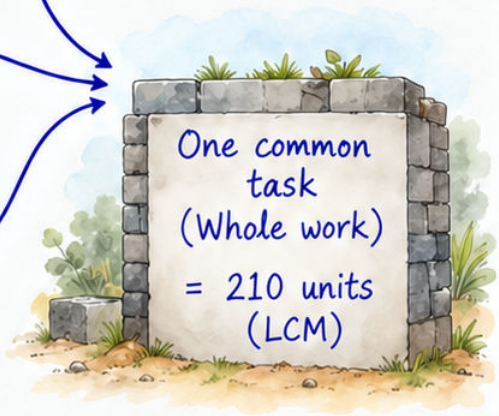
$= \frac{1}{70}$ work/day

$= 3$ units/day

Why 210 units ?

Take LCM of 30, 42 and 70 to make one common total work.

LCM (30, 42, 70) = 210 units.



Combined work rate

A, B and C together complete $= 7 + 5 + 3 = 15$ units/day.

Time taken $= \frac{\text{Total work}}{\text{Combined rate}} = \frac{210}{15} =$ **14 days.**

Check using fractions

$\frac{1}{30} + \frac{1}{42} + \frac{1}{70} = \frac{7}{210} + \frac{5}{210} + \frac{3}{210} = \frac{15}{210} = \frac{1}{14}$.

So, A, B and C together complete the work in 14 days.

Key trap

Add the work rates, never add the individual completion times.

✗ $30 + 42 + 70 = 142$ days (Incorrect)

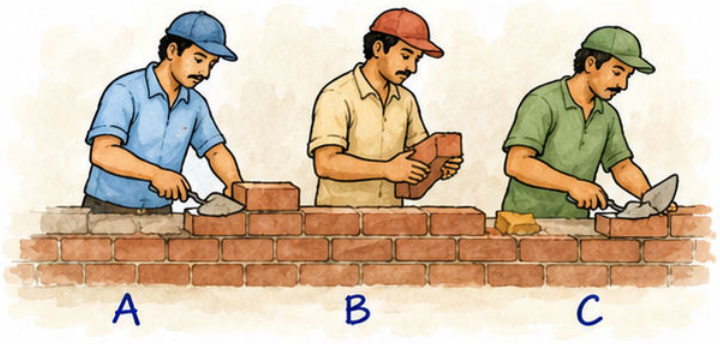
✓ $7 + 5 + 3 = 15$ units/day (Correct)

→ **Answer:** A, B and C together complete the work in 14 days.

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Pair rates reveal the third worker

Three workers A, B and C work in pairs. We know the time taken by each pair to complete the same work. We can find the work rate of the third worker using simple addition of pair rates.



Given (Pair information)

A + B → 36 days

B + C → 40 days

A + C → 72 days

Choose a convenient total work

Let the total work = 360 units.
Then the pair work rates are:

$$\text{Rate of } (A+B) = \frac{360}{36} = 10 \text{ units/day}$$

$$\text{Rate of } (B+C) = \frac{360}{40} = 9 \text{ units/day}$$

$$\text{Rate of } (A+C) = \frac{360}{72} = 5 \text{ units/day}$$

Key idea

Add the rates of $(B+C)$ and $(A+C)$ and subtract the rate of $(A+B)$.

$$(B+C) + (A+C) - (A+B) = 2C$$

Why does this work?

Each addition $(B+C)$ and $(A+C)$ contains the work rate of C, so C is counted twice. When we subtract $(A+B)$, the work rates of A and B cancel out.

$$(B+C) = B + C$$
$$(A+C) = A + C$$
$$-(A+B) = -A - B$$
$$2C$$

B cancels with − B
A cancels with − A
C remains twice.

Calculation

$$2C = 9 + 5 - 10$$
$$= 4 \text{ units/day}$$

$$C = \frac{4}{2} = 2 \text{ units/day}$$

Time taken by C alone

$$C \text{ alone} = \frac{360}{2} = 180 \text{ days}$$

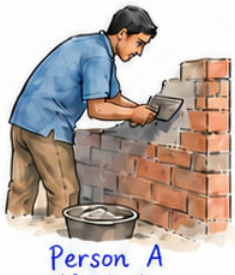
Important

Do not use $(A+B)+(B+C)-(A+C)$ to find C. This gives 2B, not 2C.

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Time and efficiency move in opposite directions

For equal job, more efficient person takes less time. Hence, time and efficiency are inversely related.



Person A (faster)
Rate = 3 units/day
Time = 2 days



Person B (slower)
Rate = 2 units/day
Time = 3 days

- For the same work, if rates of A : B = 3 : 2, then times taken are in the ratio 2 : 3.
- Higher rate (efficiency) → Less time.
- Lower rate (efficiency) → More time.

Two-worker formula (equal work)

If two persons can complete a work in x days and y days respectively, then time taken by both working together (at their stated steady rates) is

$$T = \frac{xy}{x+y}$$

Here, $x > 0$, $y > 0$ (rates are positive constants).

Why?

Let total work = W units.

A's rate = $\frac{W}{x}$, B's rate = $\frac{W}{y}$

Together rate = $\frac{W}{x} + \frac{W}{y} = W\left(\frac{1}{x} + \frac{1}{y}\right)$

Time taken,

$$T = \frac{W}{W\left(\frac{1}{x}+\frac{1}{y}\right)} = \frac{1}{\frac{1}{x}+\frac{1}{y}} = \frac{xy}{x+y}$$

Example : 12 and 18 days

If A can complete the work in 12 days and B in 18 days, then together

$$T = \frac{12 \times 18}{12+18} = \frac{216}{30} = 7.2 \text{ days.}$$

Here, $6 < T < 9$

(Together time is less than the smaller time and greater than half of it).

Special case : Equal individual times

If both can complete the work in the same time, i.e., $x = y$, then

$$T = \frac{x \cdot x}{x+x} = \frac{x^2}{2x} = \frac{x}{2}$$

So, together they take exactly half the time.



Together time is never longer (under usual assumptions)

For positive x, y,

$$T = \frac{xy}{x+y} < \frac{xy}{x} = y \quad \text{and} \quad T < \frac{xy}{y} = x.$$

Hence, A and B together cannot take longer time than either of them alone.

Important note on adding rates

We can add the individual rates only if both persons work throughout at their stated steady rates on the same work. If one works for only part of the time, or if rates change, then the simple sum of rates is not applicable.



Current affairs: 100 per cent FDI in insurance and the insurance law amendments of 2025

1. Concept in one line

The Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025 lets foreign investment in an Indian insurance company go up to 100 per cent of its paid-up equity capital, where the limit was 74 per cent, and makes other changes in three insurance laws. The examination asks about the dates of the law, what it changes in each of the three Acts, how the limit rose in steps from 26 per cent, and what the law leaves out.

2. Revision notes

2.1 From the Budget to the Gazette

- **FDI:** FDI stands for foreign direct investment. The limit discussed here is the ceiling on the share of an Indian insurance company's paid-up equity capital that foreign investors may hold. FDI policy as a whole belongs to another day's topic.
- **Budget, 1 February 2025:** Paragraph 95 of the Budget Speech for 2025-26 said: "The FDI limit for the insurance sector will be raised from 74 to 100 per cent." It added a condition: "This enhanced limit will be available for those companies which invest the entire premium in India." It also said that the guardrails and conditionalities attached to foreign investment would be reviewed and simplified.
- **Cabinet, 12 December 2025:** The news agency IANS reported on 12 December 2025 that the Union Cabinet, chaired by the Prime Minister, had approved the proposal that day. The report called the coming Bill the Insurance Laws (Amendment) Bill, 2025. The Bill's Statement of Objects and Reasons, signed by the Finance Minister, is dated 12 December 2025.
- **The Bill:** It was introduced in the Lok Sabha on 16 December 2025 as Bill No. 195 of 2025, under the title "Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Bill, 2025". The Lok Sabha passed it the same day. The Rajya Sabha passed it on 17 December 2025.
- **The Act:** The President gave assent on 20 December 2025. It is Act No. 40 of 2025, published in the Gazette of India on 21 December 2025. Its short title is the Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025. It has 95 sections in four Chapters.
- **The three Acts amended:** the Insurance Act, 1938 (Chapter II, sections 2 to 76 of the amending Act), the Life Insurance Corporation Act, 1956 (Chapter III, sections 77 to 86) and the Insurance Regulatory and Development Authority Act, 1999 (Chapter IV, sections 87 to 95). The last two are called the LIC Act and the IRDA Act below. LIC is the Life Insurance Corporation of India. IRDAI is the Insurance Regulatory and Development Authority of India, the regulator set up under the IRDA Act.
- **Commencement:** Section 1(2) leaves the date to the Central Government. By notification S.O. 490(E) dated 3 February 2026, the Central Government, through the Department of Financial Services, appointed 5 February 2026 for all provisions of the Act except section 25.

Section 25 substitutes a new section 32A in the Insurance Act. The new section 32A bars a director or officer of an insurer from being a director or officer of another insurer of the same class, of a banking company or of an investment company. That notification appoints no date for section 25. The notification of 3 February 2026 therefore brought the Act into force on 5 February 2026, except for section 25.

2.2 What the Act changes in each of the three Acts

Act amended	Subject	What the Act of 2025 does
Insurance Act, 1938	Foreign investment	New section 3AA, headed "Foreign investment in equity": the holdings of foreign investors, including portfolio investors, in an Indian insurance company may extend up to 100 per cent of its paid-up equity capital, subject to the conditions and manner that may be prescribed. The limit before was 74 per cent
Insurance Act, 1938	Definition of "Indian insurance company", section 2(7A)	Rewritten: a public company formed and registered under the Companies Act, 2013, whose sole purpose is to carry on life, general, re-insurance or health insurance business. The definition now carries no percentage
Insurance Act, 1938	Foreign re-insurers, section 6(2)	A foreign company that does re-insurance business through a branch in India needs a net owned fund of not less than Rs 1,000 crore to be registered. The figure before was Rs 5,000 crore
Insurance Act, 1938	Transfer of shares, section 6A	The threshold above which a transfer of an insurer's shares needs the prior approval of IRDAI rises from 1 per cent to 5 per cent of the paid-up capital
Insurance Act, 1938	Insurance intermediaries, sections 2(10B) and 42D	The definition now also includes managing general agents and insurance repositories. A registration "shall remain in force subject to payment of such annual fee as may be specified by the regulations"; IRDAI may suspend or cancel it. Official releases call this one-time registration

Act amended	Subject	What the Act of 2025 does
Insurance Act, 1938	Directions and disgorgement, section 34	IRDAI may issue directions to insurers and to insurance intermediaries. An Explanation says the power includes directing a person who made a profit or averted a loss by a contravention to disgorge an amount equivalent to the wrongful gain made or loss averted
Insurance Act, 1938	Penalties, sections 102 and 105E	Penalty of up to Rs 1 lakh for each day of failure, subject to a maximum of Rs 10 crore; the maximum before was Rs 1 crore. New section 105E lists the factors IRDAI is to weigh in fixing a penalty
Insurance Act, 1938	Other powers of IRDAI	IRDAI may supersede the Board of Directors of an insurer whose business is run in a way prejudicial to policyholders, and appoint an Administrator. It may approve a scheme of arrangement between an insurer and a company that is not an insurer. Under amended section 114A, draft regulations are generally published for public comments and regulations are reviewed periodically; the section permits specified exceptions to prior publication
LIC Act, 1956	Zonal offices, section 18(2)	"The Corporation shall establish zonal offices at Mumbai, Kolkata, Delhi, Kanpur and Chennai, and may establish such other zonal offices as it thinks fit." The Bill's note on this clause says the aim is to let LIC set up zonal offices on its own, without prior approval of the Central Government
LIC Act, 1956	Foreign branches, sections 24(3) and 28(4)	The funds of a branch of LIC in another country are kept, and its surplus is used, in accordance with the laws of that country

Act amended	Subject	What the Act of 2025 does
IRDA Act, 1999	Policyholders' Education and Protection Fund, new section 16A	The Fund is set up and administered by IRDAI. Credited to it: grants and donations from the Central Government, State Governments, IRDAI, companies or other institutions; the sums IRDAI realises by way of penalties; other sums specified by regulations
IRDA Act, 1999	The Authority and its regulations, sections 5(1), 14A to 14E and 26	As amended, the term of the Chairperson and whole-time members is five years or till the age of 65 years, whichever is earlier, with eligibility for reappointment. New sections cover the collection and confidentiality of policy information. Draft regulations are generally published for public comments before regulations are made, subject to the specified exceptions

2.3 How the limit on foreign investment rose

Step	Limit on foreign holding in an Indian insurance company	Law
Sector opened to private companies (2000)	26 per cent	The Statement of Objects and Reasons of the 2025 Bill records that when the insurance business was opened to the private sector, FDI up to 26 per cent was permitted. The IRDA Act is of 1999, and IRDAI was incorporated in April 2000

Step	Limit on foreign holding in an Indian insurance company	Law
2015	49 per cent	Insurance Laws (Amendment) Act, 2015 (Act No. 5 of 2015; assent on 20 March 2015; deemed to have come into force on 26 December 2014). Holdings of foreign investors, including portfolio investors, were not to exceed 49 per cent, and the company was to be "Indian owned and controlled". The Act amended the Insurance Act, 1938, the General Insurance Business (Nationalisation) Act, 1972 and the IRDA Act, 1999
2021	74 per cent	Insurance (Amendment) Act, 2021 (Act No. 6 of 2021; assent on 25 March 2021). The Bill was passed by the Rajya Sabha on 18 March 2021 and by the Lok Sabha on 22 March 2021. The Act amended the Insurance Act, 1938, raised the limit from 49 per cent and removed the restrictions on foreign ownership and control
2025	100 per cent	Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025, new section 3AA of the Insurance Act; in force since 5 February 2026

At the steps of 2015, 2021 and 2025 the limit was written in the Insurance Act, 1938, not in the IRDA Act.

The FDI policy after the Act. Press Note No. 1 (2026 Series) of the Department for Promotion of Industry and Internal Trade (DPIIT), dated 9 February 2026, amended paragraph 5.2.22 of the Consolidated FDI Policy of 2020. As amended, it reads:

Entity	FDI limit	Entry route
Insurance company	100 per cent	Automatic
Insurance intermediaries (brokers, corporate agents, third party administrators and the like)	100 per cent	Automatic

Entity	FDI limit	Entry route
Life Insurance Corporation of India	20 per cent	Automatic

- On the automatic route no prior approval of the Government is needed. Here the route is subject to approval or verification by IRDAI.
- At least one among the Chairperson, the Managing Director and the Chief Executive Officer of the company is to be a resident Indian citizen.
- The Press Note takes effect from the date of the notification under the Foreign Exchange Management Act (FEMA).

2.4 What the Act leaves out

- **The Budget condition:** Section 3AA does not itself list the conditions for foreign investment. It leaves them to be prescribed by rules. The Indian Insurance Companies (Foreign Investment) Amendment Rules, 2025 were notified on 30 December 2025 as G.S.R. 928(E), with effect from publication. These amendments do not insert the Budget's ‘entire premium invested in India’ condition; they link the permitted foreign-investment percentage to the Insurance Act and revise governance conditions.
- **Composite licence:** The IANS report of 12 December 2025 expected the Bill to bring a composite licence (one insurer doing life and general business together) and lower paid-up capital requirements. The word "composite" does not occur in the clauses of the Bill as introduced or in the Act, and the new definition of "Indian insurance company" has the words "sole purpose".
- **Capital of insurance companies:** The Act does not change the minimum paid-up capital of insurance companies. It does remove the minimum paid-up share capital of Rs 100 crore for insurance co-operative societies.
- **LIC:** The Act amends the LIC Act, but the FDI limit for LIC remains 20 per cent in the FDI policy.
- **The fourth Act:** The Statement of Objects and Reasons names four Acts as the legislative framework of the sector: the Insurance Act, the IRDA Act, the LIC Act and the General Insurance Business (Nationalisation) Act, 1972. The Act of 2025 amends the first three and leaves the fourth untouched.
- **Bill and Act:** The Bill as introduced and the Act as published both have four Chapters and 95 clauses or sections. The main provisions (sections 3AA, 6, 6A, 34, 42D, 102 and 114A of the Insurance Act, section 18 of the LIC Act and section 16A of the IRDA Act) stand in both.

2.5 The sector and the regulator

- **Insurance penetration** is the premium collected in a year as a percentage of GDP. In 2024-25 it was 3.7 per cent (life 2.7 per cent, non-life 1 per cent).
- **Insurance density** is the premium per person. In 2024-25 it was USD 97.0.
- The PIB note of 23 April 2026 says 74 insurers are operational. The sector's assets under management were Rs 74.44 lakh crore as on 31 March 2025.

- **"Insurance for All by 2047":** the aim that every citizen has adequate life, health and property insurance cover and every enterprise has suitable insurance protection.
- **Three plans of IRDAI, as described in February 2025:** Bima Sugam is a one-stop digital marketplace for buying and managing policies and making claims. Bima Vistaar is a composite product that covers death, personal accident, property and surgical hospitalisation. Bima Vahak is a localised, women-centric field force that takes insurance to the doorstep.
- **IRDAI:** a statutory body under the Ministry of Finance, constituted under the IRDA Act, 1999 and incorporated in April 2000. Its headquarters is at Hyderabad. Its Chairperson, as on 11 October 2026, is Shri Ajay Seth.
- The insurance and pension sector as a whole and the crop insurance scheme are other days' topics.

2.6 Arguments for and against

- **For (the Government's press release of 18 December 2025):** 100 per cent FDI will bring more foreign players, capital, advanced technology and global best practices, and create jobs. "Increased competition would drive efficiency in products and services."
- **For (the Finance Minister in the Rajya Sabha, 17 December 2025):** the country needs wider insurance cover for people, businesses and agriculture, and the rural and social sector obligations bind all insurers and are monitored by the regulator.
- **Against (Opposition members in the Rajya Sabha, 17 December 2025):** the Bill was brought in a hurry, and profiteering by private companies cannot be supported.
- **Against (the same debate):** the Bill strengthens capital but weakens accountability and leaves policyholders exposed, and the States were not consulted enough.

3. Extra section: timeline of the law, and the figures to remember

Date	What happened
20 March 2015	Assent to the Insurance Laws (Amendment) Act, 2015: limit of 49 per cent
18 and 22 March 2021	The Rajya Sabha and then the Lok Sabha pass the Bill for the Insurance (Amendment) Act, 2021; assent follows on 25 March 2021: limit of 74 per cent
1 February 2025	Budget Speech for 2025-26 announces 100 per cent for companies that invest the entire premium in India
12 December 2025	Cabinet approval reported by IANS; the Statement of Objects and Reasons carries this date
16 December 2025	Bill No. 195 of 2025 introduced in the Lok Sabha and passed by it

Date	What happened
17 December 2025	The Rajya Sabha passes the Bill
18 December 2025	Press release of the Ministry of Finance on the Bill
20 December 2025	President's assent: Act No. 40 of 2025
21 December 2025	The Act is published in the Gazette of India
30 December 2025	Indian Insurance Companies (Foreign Investment) Amendment Rules, 2025 notified
3 February 2026	Notification S.O. 490(E) on commencement
5 February 2026	The Act comes into force, except section 25
9 February 2026	DPIIT Press Note No. 1 (2026 Series)

Item	Figure
Steps of the limit	26, 49, 74 and 100 per cent
Net owned fund of a foreign re-insurer's branch	Rs 1,000 crore; before, Rs 5,000 crore
Share transfer needing IRDAI's prior approval	Above 5 per cent of paid-up capital; before, 1 per cent
Maximum penalty under section 102	Rs 10 crore; before, Rs 1 crore; up to Rs 1 lakh for each day
FDI limit for LIC	20 per cent, automatic route
Size of the Act	95 sections in four Chapters
Term of the Chairperson and whole-time members of IRDAI	Five years or till 65 years of age, whichever is earlier
Insurance penetration, 2024-25	3.7 per cent
Insurance density, 2024-25	USD 97.0

4. Three common exam traps

1. **Three amending laws, three names, three limits.** The 49 per cent limit came with the Insurance Laws (Amendment) Act, 2015, the 74 per cent limit with the Insurance (Amendment) Act, 2021, and the 100 per cent limit with the Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025. Before its introduction the 2025 Bill was reported as the "Insurance Laws (Amendment) Bill, 2025", and many compilations still print that name; it is not the title of the Bill or of the Act. The 26 per cent figure belongs to the opening of the sector, not to 2015.

2. **"100 per cent" is a ceiling, and only for one kind of entity.** The words are "up to": no company has to take foreign investment. The ceiling is for Indian insurance companies; the FDI policy keeps LIC at 20 per cent. All three entries in the policy are on the automatic route, but automatic does not mean free of the regulator: the investment is subject to approval or verification by IRDAI.
3. **Announced is not enacted.** The Budget tied the higher limit to companies that invest the entire premium in India; section 3AA does not list conditions and leaves them to rules. A composite licence and lower capital for insurance companies were expected but are not in the Act. Bima Vistaar is a composite product, which is a different thing from a composite licence.

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Full source-use descriptions are retained in the complete HTML review copy.

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Insurance reform: proposal, law, commencement

1 Budget Proposal



Policy proposal to amend insurance laws announced in the Union Budget (1 February 2025).

2 Parliament Legislation



The proposal introduced, debated and passed by both Houses of Parliament as a Bill.

3 Presidential Assent



The Bill, after being passed by both Houses, received the assent of the President of India.

4 Gazette Publication



The Act was published in the Official Gazette of India.

5 Commencement Notification

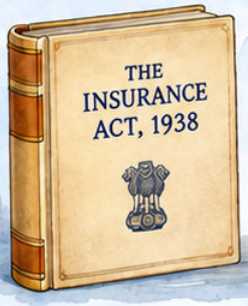


A notification dated 3 February 2026 brought the Act into force on 5 February 2026 except section 25.

Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Act, 2025

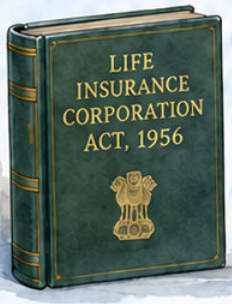
Act 40 of 2025

Three insurance laws amended



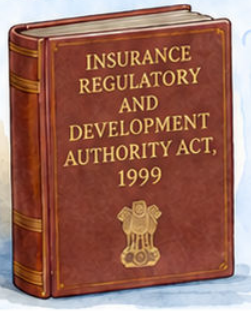
Insurance Act, 1938

Amended by the Act 40 of 2025.



Life Insurance Corporation Act, 1956

Amended by the Act 40 of 2025.



Insurance Regulatory and Development Authority Act, 1999

Amended by the Act 40 of 2025.

Commencement notification



Notification dated 3 February 2026 issued in the Official Gazette of India.



Brought the Act into force on 5 February 2026 except section 25.

Note

Commencement is separate from assent. This timeline records the 3 February 2026 notification.

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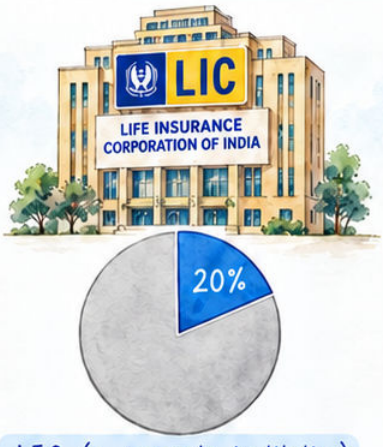
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100% FDI does not mean every insurer



Insurance companies

- FDI allowed up to 100% under the amended Insurance Act.
- Subject to applicable conditions.
- This is the statutory cap on foreign investment.



LIC (a separate institution)

- FDI capped at 20%.
- LIC is a separate institution from private insurance companies.
- Different ownership limit applies.



Insurance intermediaries

- FDI allowed up to 100%.
- Includes eligible intermediary entities, such as brokers and third-party administrators, subject to applicable rules.

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1. Statutory cap
(how much FDI is allowed?)



- Insurance companies : up to 100%.
- Insurance intermediaries : up to 100%.
- LIC : 20%.
- Read each limit with its applicable legal framework; LIC has a separate regime.

2. Entry route
(how investment comes in?)



- FDI in the insurance sector is permitted through the automatic route.
- Investors are not required to take prior government approval, subject to compliance with applicable laws and conditions.

3. Regulatory conditions
(what else must be complied with?)



- FDI is subject to regulatory conditions specified under the Insurance Act, the rules and IRDAI regulations.
- The amended framework also revises governance conditions for insurers.
- Investors must comply with all applicable conditions.



- Rules dated 30 December 2025 link the permissible percentage of FDI to the Insurance Act and revise various governance conditions.
- These amendments revise conditions for Indian insurance companies; do not apply that statement indiscriminately to LIC.

This is educational legal-policy content for APPSC Group 1 preparation.
It is not investment advice and does not imply that every insurance company is already foreign-owned.

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Policyholders and regulatory powers



- Fair treatment
- Financial security
- Disclosure & transparency
- Grievance redressal
- Responsible market conduct



1 Foreign reinsurer – Net Owned Fund requirement reduced

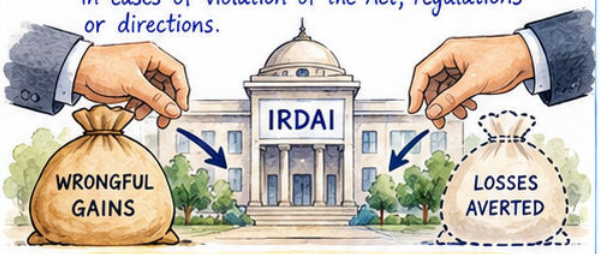


- Net Owned Fund (NOF) requirement for a foreign reinsurer reduced from ₹5,000 crore to ₹1,000 crore.
- Eases entry and participation of qualified foreign reinsurers in the Indian insurance market.

2 IRDAI – Disgorgement power

- IRDAI can recover:
  - wrongful gains made by a person, or
  - losses averted by a person,

  in cases of violation of the Act, regulations or directions.



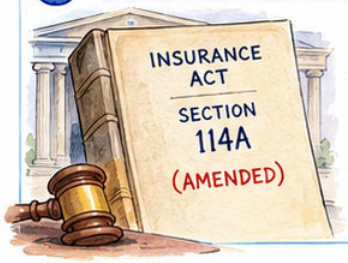
Ensures no one profits from violations and strengthens market integrity.

3 Insurance Intermediaries – Registration framework



- A registration framework for insurance intermediaries (e.g., agents, brokers, corporate agents etc.).
- Governance requirements.
- Information powers to seek information and call for documents from intermediaries.

4 Section 114A – Amended (not newly inserted)



- Section 114A has been amended, not newly inserted.
- Draft regulations are generally published for public comments before finalisation.
- Specified exceptions apply.
- Periodic review of regulations is envisaged.

5 Capital threshold vs FDI percentage – Clear distinction

Capital threshold



- Refers to minimum financial requirement (e.g., Net Owned Fund) for a foreign reinsurer to be eligible.
- In this context, reduced from ₹5,000 crore to ₹1,000 crore.
- Relates to financial strength and eligibility.

FDI percentage



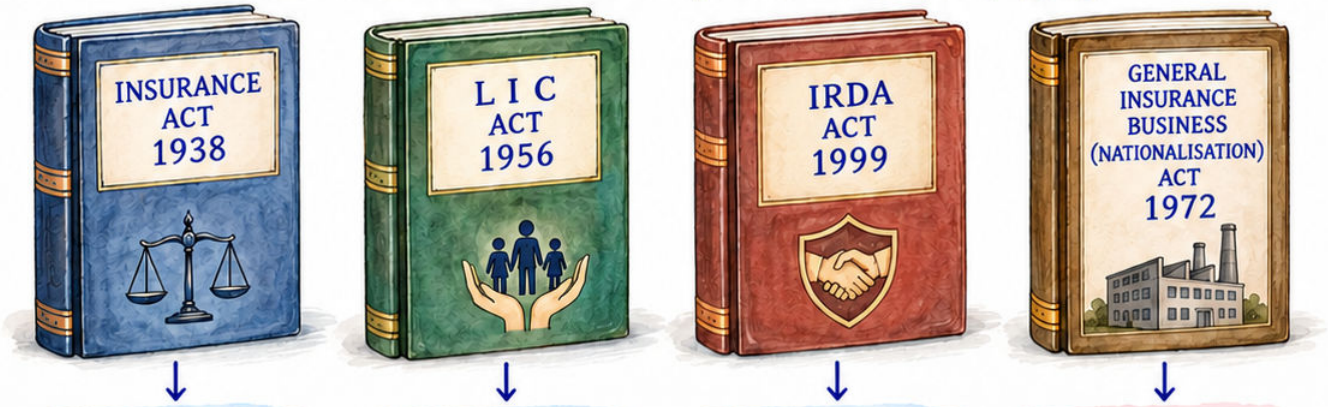
- Refers to the permitted extent of foreign investment in an Indian insurance company.
- A separate concept from capital threshold.
- One deals with how much capital a foreign reinsurer must have; the other deals with how much foreign equity can be held.

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Read the reform without mixing legal steps

Sabka Bima Sabki Raksha Act, 2025 · Act 40 of 2025



Amended by Act 40 of 2025	Amended by Act 40 of 2025	Amended by Act 40 of 2025	Not amended by Act 40 of 2025

No composite insurance licence created by this Act.



- Act 40 of 2025 did not create a composite insurance licence.
- Do not read this Act as having introduced a single licence to carry on multiple lines of insurance business.

Budget 'entire premium invested in India' proposal is not inserted by the 30 December 2025 amendments.



- The proposal to mandate that the entire premium is invested in India is not inserted by the 30 December 2025 amendments.
- Do not infer the absence of other investment obligations.

Legislative assent and commencement are different dates.



- Legislative assent is the date on which the Bill receives the formal approval of the competent authority.
- Commencement is the date on which the provisions come into force, which may be the same or a different date from the date of assent.
- Always check both dates separately. Do not assume they are the same.

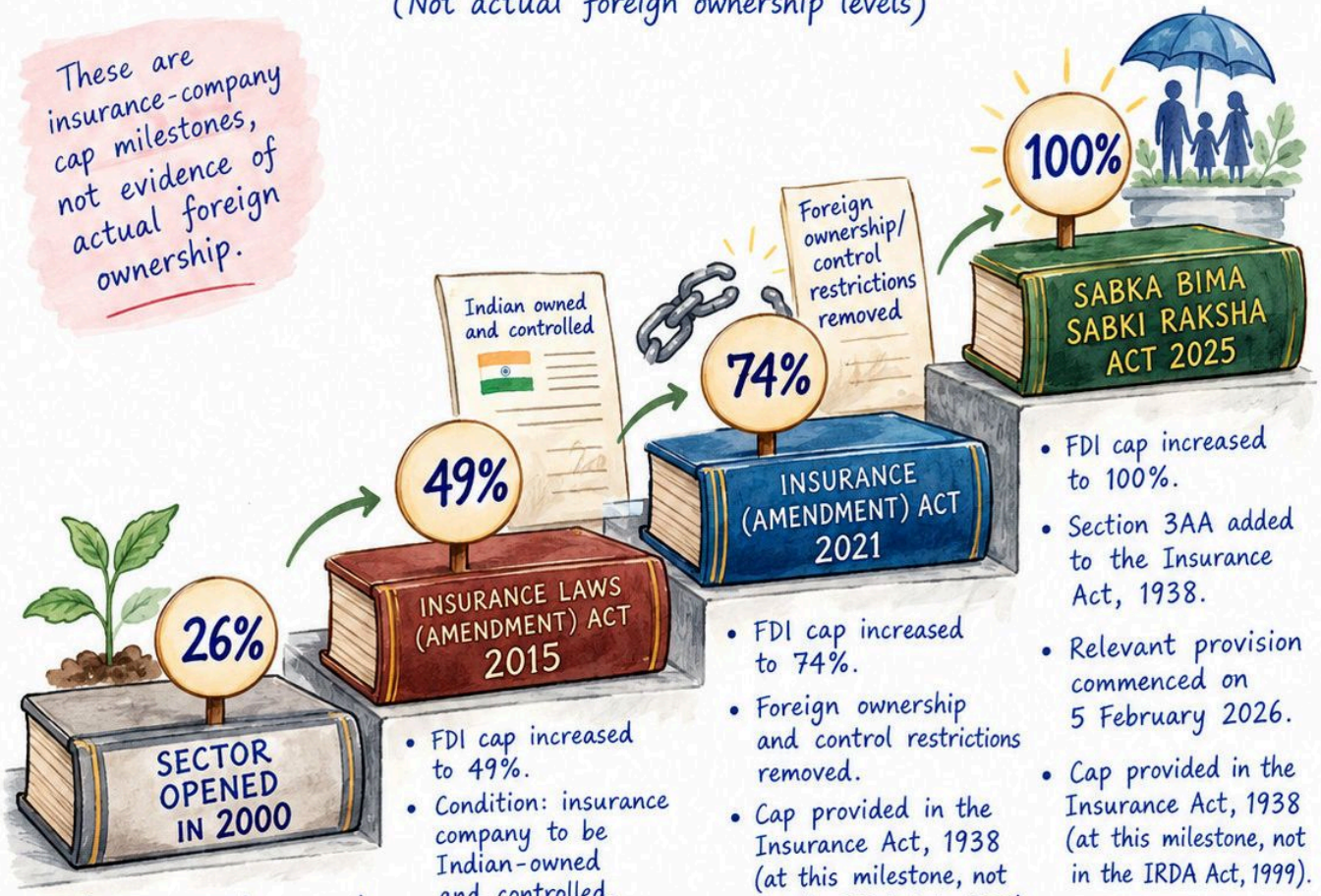
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Foreign-investment limits: four steps

Key milestones in the cap on foreign investment in Indian insurance companies
(Not actual foreign ownership levels)

These are insurance-company cap milestones, not evidence of actual foreign ownership.



- Insurance sector opened to private players in 2000.
- FDI cap: 26%.

- FDI cap increased to 49%.
- Condition: insurance company to be Indian-owned and controlled.
- Cap provided in the Insurance Act, 1938 (at this milestone, not in the IRDA Act, 1999).

- FDI cap increased to 74%.
- Foreign ownership and control restrictions removed.
- Cap provided in the Insurance Act, 1938 (at this milestone, not in the IRDA Act, 1999).

- FDI cap increased to 100%.
- Section 3AA added to the Insurance Act, 1938.
- Relevant provision commenced on 5 February 2026.
- Cap provided in the Insurance Act, 1938 (at this milestone, not in the IRDA Act, 1999).

Important: Cap, entry route and regulatory conditions are three separate questions.

Cap
Maximum foreign investment permitted (in %).

Entry route
Automatic route or Government route (as applicable).

Regulatory conditions
Sector-specific and other conditions (e.g., fit and proper criteria, corporate governance, etc.).

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