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APPSC GROUP 1 · 1,000 TOPICS IN 100 DAYS

DAY 23
MCQs and explanations

Topics 221-230 · English

> 20 questions across 10 topics, with answer explanations and distractor analysis. Try all questions before reading the solutions.

221	Non-Cooperation and Khilafat movements
222	Dandi March and Salt Satyagraha
223	President: executive, legislative and veto powers
224	Union Budget: structure and key terms
225	Rotation of the Earth and its effects
226	India's energy resources and import dependence
227	Chandrayaan missions
228	Letter series and alphabet position tricks
229	Arithmetic mean: shortcuts and the deviation method
230	Current affairs: natural farming in Andhra Pradesh and the NTR district model

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Topic 221
Non-Cooperation and Khilafat movements

Day 23 · History & Culture | Unit A-5 · English

Practice questions

Q1 · Topic question 1

Consider the following statements about the Non-Cooperation movement:

1. Chauri Chaura, where a police station was set on fire in February 1922, was in the Bombay Presidency.
2. Baba Ramchandra, who led the peasants of Awadh, was a sanyasi who had earlier been to Fiji as an indentured labourer.
3. Under the Inland Emigration Act of 1859, plantation workers in Assam were not permitted to leave the tea gardens without permission.
4. In the Chirala-Perala struggle, the residents left their town in protest against a tax on grazing cattle in the forests.

Which of the statements given above is/are correct?

(1) 1 and 4 only

(2) 2 and 3 only

(3) 3 only

(4) 1, 2 and 4

Q2 · Topic question 2

Match List I (Congress meeting) with List II (What it did or decided):

List I (Congress meeting)	List II (What it did or decided)
A. The Working Committee meeting at Bardoli	1. Changed the creed of the Congress to the attainment of swaraj by all legitimate and peaceful means
B. The Nagpur session	2. Gandhi convinced other leaders here of the need to start non-co-operation in support of Khilafat as well as for swaraj
C. The All India Congress Committee meeting at Bezwada	3. Resolved that civil disobedience be suspended because of the violence at Chauri Chaura
D. The Calcutta special session	4. Fixed a target of one crore rupees for the Tilak Swaraj Fund

(1) A-1, B-3, C-4, D-2

(2) A-3, B-1, C-2, D-4

(3) A-1, B-3, C-2, D-4

(4) A-3, B-1, C-4, D-2

Topic 222
Dandi March and Salt Satyagraha

Day 23 · History & Culture | Unit A-6 · English

Practice questions

Q3 · Topic question 1

Match List I (Place) with List II (What happened there in 1930):

List I (Place)	List II (What happened there in 1930)
A. Dharasana	1. Crowds faced armoured cars and police firing, and soldiers of a battalion of the Garhwal Rifles refused to fire on them
B. Vedaranyam	2. Volunteers were beaten down by the police without raising an arm to fend off the blows; a journalist's report of it appeared in 1,350 newspapers
C. Peshawar	3. Industrial workers attacked police posts, municipal buildings, law courts and railway stations after Gandhi's arrest
D. Sholapur	4. A salt march that set out from Trichinopoly on 13 April 1930 reached it on 28 April

(1) A-4, B-2, C-3, D-1

(2) A-2, B-4, C-3, D-1

(3) A-2, B-4, C-1, D-3

(4) A-4, B-2, C-1, D-3

Q4 · Topic question 2

Consider the following statements about the Civil Disobedience Movement and the events around it:

1. The Gandhi-Irwin Pact allowed people living near the sea-coast to collect or make salt.
2. Gandhi attended the First Round Table Conference in London as the representative of the Congress.
3. The Congress session of 1931 at Karachi, presided over by Vallabhbhai Patel, endorsed the Gandhi-Irwin Pact.
4. In October 1929, Lord Irwin announced a vague offer of dominion status for India in an unspecified future.

Which of the statements given above is/are correct?

(1) 1, 3 and 4 only

(2) 1, 2 and 3 only

(3) 2 and 4 only

(4) 3 and 4 only

Topic 223
President: executive, legislative and veto powers

Day 23 · Constitution, Polity, Social Justice & IR | Unit B-2 · English

Practice questions

Q5 · Topic question 1

Consider the following statements about the powers of the President of India:

1. Article 72 empowers the President to grant pardons in all cases where the punishment or sentence is by a Court Martial.
2. If the two Houses of Parliament reassemble on different dates, the six weeks after which an Ordinance ceases to operate are counted from the later of those dates.
3. If the Houses pass again, with amendments, a Bill that the President has returned for reconsideration, the President may withhold assent from it.
4. Under Article 143, the President may refer to the Supreme Court for its opinion a question of fact, and not only a question of law.

Which of the statements given above is/are correct?

(1) 1, 2 and 4 only

(2) 1 and 3 only

(3) 2, 3 and 4 only

(4) 1 and 2 only

Q6 · Topic question 2

Match List I (Article of the Constitution) with List II (What it provides):

List I (Article of the Constitution)	List II (What it provides)
A. Article 74	1. An order authenticated in the manner laid down by rules cannot be called in question on the ground that it was not made or executed by the President
B. Article 75	2. A Minister who for six consecutive months is not a member of either House of Parliament ceases to be a Minister at the end of that period
C. Article 77	3. The Prime Minister must furnish such information about the administration of the Union and proposals for legislation as the President may call for
D. Article 78	4. The question whether any advice, and if so what advice, was tendered by Ministers to the President shall not be inquired into in any court

(1) A-2, B-4, C-1, D-3

(2) A-4, B-2, C-3, D-1

(3) A-4, B-2, C-1, D-3

(4) A-2, B-4, C-3, D-1

Topic 224
Union Budget: structure and key terms

Day 23 · Indian & AP Economy and Planning | Unit C-4 · English

Practice questions

Q7 · Topic question 1

Consider the following statements about the Union Budget 2026-27:

1. In the Budget at a Glance, the proceeds of disinvestment are counted as non-tax revenue.
2. The Budget Speech mentions a target of bringing the debt of the Central Government to 50 ± 1 per cent of GDP by 2030-31.
3. In the Budget's chart of where the rupee goes, interest payments take the largest share.
4. In the Budget at a Glance, the recoveries of loans given by the government are counted as revenue receipts.

Which of the statements given above is/are correct?

(1) 1 and 2 only

(2) 3 and 4 only

(3) 1, 3 and 4 only

(4) 2 only

Q8 · Topic question 2

Match List I (measure of deficit in the Union Budget) with List II (what it is):

List I (Measure of deficit)	List II (What it is)
A. Revenue deficit	1. What is left when the interest payments of the year are taken out of another, larger measure of deficit
B. Fiscal deficit	2. Equal to the borrowings and other liabilities of the year, as the Budget at a Glance shows them
C. Effective revenue deficit	3. The excess of the spending that creates no assets for the Union government over its tax and non-tax receipts
D. Primary deficit	4. What is left when the grants in aid for creation of capital assets are taken out of another, larger measure of deficit

(1) A-2, B-3, C-4, D-1

(2) A-3, B-2, C-4, D-1

(3) A-2, B-3, C-1, D-4

(4) A-3, B-2, C-1, D-4

Topic 225
Rotation of the Earth and its effects

Day 23 · Geography | Unit D-1 · English

Practice questions

Q9 · Topic question 1

Consider the following statements about the rotation of the Earth and its effects:

1. The Earth's equatorial diameter is greater than its polar diameter by roughly 43 km.
2. Seen from above the North Pole, the Earth rotates clockwise.
3. The plane of swing of a Foucault pendulum turns fastest at the equator.
4. With only rare exceptions, tropical cyclones do not form within 5° of latitude of the equator.

Which of the statements given above is/are correct?

(1) 1 and 2 only

(2) 1 and 4 only

(3) 2 and 3 only

(4) 3 and 4 only

Q10 · Topic question 2

At a place on longitude 37°30' E, the local time is 10:00 a.m. At that moment, what is the local time on India's standard meridian, 82°30' E?

(1) 1:00 a.m.

(2) 7:00 a.m.

(3) 10:45 a.m.

(4) 1:00 p.m.

Topic 226
India's energy resources and import dependence

Day 23 · Science & Technology | Item 21 · English

Practice questions

Q11 · Topic question 1

Match List I (Energy resource) with List II (State holding the largest share of India’s reserves or resources of it; coal and lignite as the Ministry of Coal gives them for 2025, uranium as the Department of Atomic Energy gives it for June 2024, and coal-bed methane as MoSPI’s Energy Statistics India 2025 gives it for 1 April 2024):

List I (Energy resource)	List II (State with the largest share)
A. Coal	1. Tamil Nadu
B. Uranium	2. Odisha
C. Lignite	3. West Bengal
D. Coal-bed methane	4. Andhra Pradesh

(1) A-1, B-3, C-2, D-4

(2) A-2, B-3, C-1, D-4

(3) A-2, B-4, C-1, D-3

(4) A-1, B-4, C-2, D-3

Q12 · Topic question 2

Consider the following statements about India’s energy resources:

1. In MoSPI’s Energy Statistics India 2025, Rajasthan held larger estimated reserves of crude oil than onshore Gujarat on 1 April 2024.
2. Of the three strategic petroleum reserve facilities that make up the built capacity of 5.33 million tonnes, the one at Visakhapatnam has the largest capacity.
3. In the Ministry of Coal’s count as on 1 April 2025, coking coal makes up less than one-tenth of India’s Gondwana coal resources.
4. In MoSPI’s Energy Statistics India 2025, the Eastern Offshore held a larger share of India’s natural gas reserves than the Western Offshore on 1 April 2024.

Which of the statements given above is/are correct?

(1) 1 and 3 only

(2) 3 only

(3) 1, 2 and 4 only

(4) 2 and 4 only

Topic 227
Chandrayaan missions

Day 23 · Science & Technology | Item 20 · English

Practice questions

Q13 · Topic question 1

Consider the following statements about the Chandrayaan missions:

1. ISRO counts 11 instruments on Chandrayaan-1, five of them Indian and six foreign.
2. NASA reported that the water signal seen by the Moon Mineralogy Mapper (M3) on Chandrayaan-1 was stronger near the Moon's equator than at its higher latitudes.
3. The Union Cabinet approved Chandrayaan-4, a lunar sample return mission, with an outlay of Rs 2,104.06 crore.
4. After its work in lunar orbit, the Propulsion Module of Chandrayaan-3 was brought back to an orbit around the Earth.

Which of the statements given above is/are correct?

(1) 1 and 2 only

(2) 2, 3 and 4 only

(3) 1 and 3 only

(4) 1, 3 and 4 only

Q14 · Topic question 2

Match List I (Craft of a Chandrayaan mission) with List II (What it did, as ISRO and the Government report it):

List I (Craft)	List II (What it did)
A. Pragyan rover of Chandrayaan-3	1. Was meant to land softly, but came down hard after contact with it was lost during the descent
B. Vikram lander of Chandrayaan-2	2. Separated from the main spacecraft and struck the surface near the south pole on 14 November 2008
C. Vikram lander of Chandrayaan-3	3. Confirmed through in-situ measurements that sulphur is present on the surface near the south pole
D. Moon Impact Probe of Chandrayaan-1	4. Gave a temperature profile of the topsoil to a depth of 10 cm, which ISRO calls the first such profile for the lunar south pole

(1) A-4, B-1, C-3, D-2

(2) A-3, B-1, C-4, D-2

(3) A-4, B-2, C-3, D-1

(4) A-3, B-2, C-4, D-1

Topic 228
Letter series and alphabet position tricks

Day 23 · General Mental Ability: Reasoning & Psychological | Item 2 · English

Practice questions

Q15 · Topic question 1

Which pair of letters comes next in the series PK, SH, VE, YB, ?

(1) BY

(2) AZ

(3) BX

(4) BE

Q16 · Topic question 2

In the English alphabet, which letter is the 6th to the left of the 10th letter from the right end?

(1) D

(2) J

(3) K

(4) L

Topic 229
Arithmetic mean: shortcuts and the deviation method

Day 23 · General Mental Ability: Quantitative & Data | Item 8 · English

Practice questions

Q17 · Topic question 1

The weights of 40 packets of rice are given below.

Weight in grams	Number of packets
470	5
480	8
490	11
500	7
510	6
520	3

What is the mean weight of a packet?

(1) 490.25 g

(2) 492.5 g

(3) 495 g

(4) 506.67 g

Q18 · Topic question 2

The mean of 8 values is 45. When a ninth value is added, the mean of the 9 values becomes 48. What is the ninth value?

(1) 24

(2) 51

(3) 69

(4) 72

Topic 230
Current affairs: natural farming in Andhra Pradesh and the NTR district model

Day 23 · Current Affairs | CA-AP · English

Practice questions

Q19 · Topic question 1

Consider the following statements about natural farming in Andhra Pradesh:

1. Among the nine principles of natural farming listed by APCNF is that the soil should be ploughed deeply before every crop.
2. Pre-monsoon dry sowing (PMDS) involves sowing seeds in dry soil before the monsoon and using crop residue as mulch.
3. In the NTR district plan reported in February 2026, the QR code-based traceability system was meant to let farmers buy bio-inputs on credit.
4. Rythu Sadhikara Samstha, which runs APCNF, is a not-for-profit organisation fully owned by the Government of Andhra Pradesh.

Which of the statements given above is/are correct?

(1) 1 and 3 only

(2) 1 and 2 only

(3) 2 and 4 only

(4) 3 and 4 only

Q20 · Topic question 2

Match List I (programmes and schemes for natural or organic farming) with List II (a fact about each):

List I	List II
A. APCNF	1. Began with a pilot in 615 Gram Panchayats with 40,000 farmers
B. National Mission on Natural Farming	2. Rs 31,500 per hectare over three years, of which Rs 15,000 is paid by direct benefit transfer for inputs
C. Bharatiya Prakritik Krishi Paddhati	3. A target of 7.5 lakh hectares through 15,000 clusters in willing Gram Panchayats
D. Paramparagat Krishi Vikas Yojana	4. Gave Rs 12,200 per hectare for three years for cluster formation, capacity building and certification

(1) A-1, B-3, C-4, D-2

(2) A-3, B-1, C-4, D-2

(3) A-1, B-3, C-2, D-4

(4) A-3, B-1, C-2, D-4

Answer key and explanations

Check your answers only after attempting all 20 questions.

Topic	Q1	Q2
221	Q1: (2)	Q2: (4)
222	Q3: (3)	Q4: (1)
223	Q5: (1)	Q6: (3)
224	Q7: (4)	Q8: (2)
225	Q9: (2)	Q10: (4)
226	Q11: (3)	Q12: (1)
227	Q13: (4)	Q14: (2)
228	Q15: (1)	Q16: (3)
229	Q17: (2)	Q18: (4)
230	Q19: (3)	Q20: (1)

Topic 221
Non-Cooperation and Khilafat movements

Day 23 · History & Culture | Unit A-5 · English

Answer explanations

Q1 · Topic question 1

Q1. Answer: (2) 2 and 3 only

- Statement 1 is wrong: Chauri Chaura was in the Gorakhpur district of the United Provinces (now Uttar Pradesh). Bardoli, where the Working Committee met a week later to suspend civil disobedience, is a different place.
- Statement 2 is correct: NCERT (Class X) describes Baba Ramchandra, who led the Awadh peasants, as a sanyasi who had earlier been to Fiji as an indentured labourer.
- Statement 3 is correct: NCERT (Class X) says that under the Inland Emigration Act of 1859 plantation workers were not permitted to leave the tea gardens without permission; for them swaraj meant the right to move freely.
- Statement 4 is wrong: the people of Chirala left their town in protest against the plan to make Chirala and Perala a municipality, with its heavier taxes. The tax on grazing cattle in the forests, the pullari, was the issue of the Palnadu satyagraha.
- Why the other options are wrong: (1) contains statements 1 and 4, both wrong. (3) leaves out statement 2, which is correct. (4) contains statements 1 and 4, both wrong.

Q2 · Topic question 2

Q2. Answer: (4) A-3, B-1, C-4, D-2

- Why it is correct: The Working Committee meeting at Bardoli resolved on 12 February 1922 that civil disobedience be suspended in view of Chauri Chaura (A-3). The Nagpur session of December 1920 changed the creed to swaraj by all legitimate and peaceful means (B-1). The target of one crore rupees for the Tilak Swaraj Fund is recorded as fixed at Bezwada, where the All India Congress Committee met on 31 March and 1 April 1921 (C-4). At the Calcutta special session of September 1920 Gandhi convinced other leaders of the need to start non-cooperation for Khilafat and for swaraj (D-2).
- Why (1) is wrong: It exchanges Bardoli and Nagpur, giving the new creed to Bardoli and the suspension to Nagpur. The Nagpur session (December 1920) met more than a year before Chauri Chaura (February 1922); the suspension came only after Chauri Chaura, at Bardoli, and the creed was changed at Nagpur.
- Why (2) is wrong: It exchanges Bezwada and Calcutta. Calcutta, in 1920, was where the leaders were won over; the Tilak Swaraj Fund target belongs to the Bezwada meeting of 1921.
- Why (3) is wrong: It makes both exchanges: it gives the creed to Bardoli, the suspension to Nagpur, the winning over of the leaders to Bezwada and the fund target to Calcutta. Nagpur met more than a year before Chauri Chaura, and the suspension came after it, at Bardoli; the leaders were won over at Calcutta in September 1920, and the fund target was fixed in 1921 at Bezwada.

Topic 222
Dandi March and Salt Satyagraha

Day 23 · History & Culture | Unit A-6 · English

Answer explanations

Q3 · Topic question 1

Q1. Answer: (3) A-2, B-4, C-1, D-3

- Why it is correct: At the Dharasana salt works on 21 May 1930, volunteers led by Sarojini Naidu were beaten down without raising an arm, and Webb Miller's report of it appeared in 1,350 newspapers (A-2). C. Rajagopalachari's salt march set out from Trichinopoly on 13 April 1930 and reached Vedaranyam on 28 April (B-4). At Peshawar, after the arrest of Ghaffar Khan, crowds faced armoured cars and police firing, and soldiers of a Garhwal Rifles battalion refused to fire (C-1). At Sholapur, after Gandhi's arrest, industrial workers attacked police posts, municipal buildings, law courts and railway stations (D-3).
- Why (1) is wrong: it exchanges both couples. It gives the march from Trichinopoly to Dharasana and the beating of the volunteers to Vedaranyam, and it also gives the Sholapur workers to Peshawar and the Peshawar firing to Sholapur.
- Why (2) is wrong: it exchanges Peshawar and Sholapur. The Garhwali soldiers refused to fire at Peshawar; the attack by industrial workers on police posts and railway stations was at Sholapur.
- Why (4) is wrong: it exchanges the two salt actions. Sarojini Naidu led the raid at Dharasana in Gujarat; Rajagopalachari led the march to Vedaranyam on the east coast.

Q4 · Topic question 2

Q2. Answer: (1) 1, 3 and 4 only

- Statement 1 is correct: under the Pact of 5 March 1931, people near the sea-coast were allowed to collect or make salt. NCERT Class XII words it "salt manufacture allowed along the coast".
- Statement 2 is wrong: the Congress kept away from the First Round Table Conference, which opened on 12 November 1930; NCERT says it was held "without the pre-eminent political leader in India". Gandhi attended the Second Round Table Conference, in 1931, as the sole representative of the Congress.
- Statement 3 is correct: Vallabhbhai Patel presided over the Karachi session of March 1931. There, on 30 March, the Congress endorsed the Pact, and on 31 March it adopted the resolution on fundamental rights.
- Statement 4 is correct: NCERT Class X says that in October 1929 Irwin announced "a vague offer of 'dominion status' for India in an unspecified future". The Congress found it inadequate, and the Lahore session of December 1929 adopted Purna Swaraj.
- Why the other options are wrong: (2) includes statement 2, which is wrong, and leaves out statement 4, which is correct. (3) includes statement 2 and leaves out statements 1 and 3. (4) leaves out statement 1, which is correct.

Topic 223
President: executive, legislative and veto powers

Day 23 · Constitution, Polity, Social Justice & IR | Unit B-2 · English

Answer explanations

Q5 · Topic question 1

Q1. Answer: (1) 1, 2 and 4 only

- Statement 1 is correct: Article 72(1)(a) covers all cases where the punishment or sentence is by a Court Martial. Article 161 gives the Governor no such clause.
- Statement 2 is correct: the Explanation to Article 123(2) says that where the Houses are summoned to reassemble on different dates, the six weeks are reckoned from the later of those dates.
- Statement 3 is wrong: under the proviso to Article 111, if the Houses pass the Bill again “with or without amendment”, the President “shall not withhold assent therefrom”. Amendments made on reconsideration do not revive the power to withhold.
- Statement 4 is correct: Article 143(1) speaks of “a question of law or fact”.
- Why the other options are wrong: (2) includes statement 3, which is wrong, and leaves out statements 2 and 4, which are correct. (3) includes statement 3, which is wrong, and leaves out statement 1, which is correct. (4) leaves out statement 4, which is correct.

Q6 · Topic question 2

Q2. Answer: (3) A-4, B-2, C-1, D-3

- A-4: Article 74(2) bars any court from inquiring whether, and what, advice was tendered by Ministers to the President.
- B-2: Article 75(5) says a Minister who for six consecutive months is not a member of either House ceases to be a Minister at the end of that period.
- C-1: Article 77(2) says an order or instrument authenticated as the rules lay down cannot be called in question on the ground that it was not made or executed by the President.
- D-3: Article 78(b) makes it the duty of the Prime Minister to furnish the information on administration and proposals for legislation that the President calls for.
- Why (1) is wrong: it exchanges Articles 74 and 75. Both deal with the Council of Ministers, but the bar on courts is in Article 74 and the six-month rule for a non-member Minister is in Article 75.
- Why (2) is wrong: it exchanges Articles 77 and 78. Article 77 is about action taken in the President’s name and how it is authenticated; Article 78 lists the duties of the Prime Minister towards the President.
- Why (4) is wrong: it makes both exchanges.

Topic 224
Union Budget: structure and key terms

Day 23 · Indian & AP Economy and Planning | Unit C-4 · English

Answer explanations

Q7 · Topic question 1

Q1. Answer: (4) 2 only

- Statement 1 is wrong: disinvestment proceeds are capital receipts. The Budget at a Glance shows them as “other receipts” under capital receipts (Rs 80,000 crore in BE 2026-27), not as non-tax revenue.
- Statement 2 is correct: paragraph 92 of the Budget Speech of 1 February 2026 recalls that in Budget 2025-26 the Central Government indicated it would target a debt to GDP ratio of 50 ± 1 per cent by 2030-31. Debt is 55.6 per cent of GDP in BE 2026-27.
- Statement 3 is wrong: the largest share of the rupee that goes out is the States’ share of taxes, 22 paise. Interest payments come second, at 20 paise.
- Statement 4 is wrong: recoveries of loans are capital receipts (Rs 38,397 crore in BE 2026-27). With other receipts they make up the non-debt capital receipts.
- Why the other options are wrong: (1) includes statement 1, which is wrong. (2) includes statements 3 and 4, which are wrong, and leaves out statement 2, which is correct. (3) includes statements 1, 3 and 4, which are all wrong, and leaves out statement 2.

Q8 · Topic question 2

Q2. Answer: (2) A-3, B-2, C-4, D-1

- A-3: the revenue deficit is revenue expenditure minus revenue receipts. Revenue expenditure is the spending that creates no assets for the Union; revenue receipts are the tax and non-tax receipts.
- B-2: in the Budget at a Glance the fiscal deficit (Rs 16,95,768 crore in BE 2026-27) is equal to the borrowings and other liabilities of the year.
- C-4: the effective revenue deficit is the revenue deficit minus the grants in aid for creation of capital assets. Here the larger measure is the revenue deficit.
- D-1: the primary deficit is the fiscal deficit minus interest payments. Here the larger measure is the fiscal deficit.
- Why (1) is wrong: it exchanges the revenue and the fiscal deficit. The revenue deficit is the gap on the revenue account; it is the fiscal deficit that equals the borrowings and other liabilities.
- Why (3) is wrong: it makes both exchanges. It exchanges the revenue and the fiscal deficit, and it also exchanges the effective revenue deficit and the primary deficit. All four pairs are wrong.
- Why (4) is wrong: it exchanges the effective revenue deficit and the primary deficit. The primary deficit takes the interest payments out of the fiscal deficit; the effective revenue deficit takes the grants in aid for creation of capital assets out of the revenue deficit.

Topic 225
Rotation of the Earth and its effects

Day 23 · Geography | Unit D-1 · English

Answer explanations

Q9 · Topic question 1

Q1. Answer: (2) 1 and 4 only

- Statement 1 is correct: NASA gives an equatorial radius of 6,378.137 km and a polar radius of 6,356.752 km, so the diameters are about 12,756 km and 12,714 km. Worked from the exact radii, the difference is 2 × 21.385 = 42.77 km, about 43 km. Rotation makes the equator bulge and the poles flatten.
- Statement 2 is wrong: the Earth rotates from west to east, which seen from above the North Pole is anticlockwise.
- Statement 3 is wrong: the plane of a Foucault pendulum does not turn at all at the equator. It turns fastest at the poles, 15° an hour, because its rate goes with the sine of the latitude.
- Statement 4 is correct: NOAA says that, with only the rarest exceptions, tropical cyclones do not form within 5° of latitude of the equator. The Coriolis force there is too weak (zero at the equator itself), so a low gets filled instead of getting intensified.
- Why the other options are wrong: (1) includes statement 2, which is wrong, and leaves out statement 4. (3) includes statements 2 and 3, both wrong. (4) includes statement 3, which is wrong, and leaves out statement 1.

Q10 · Topic question 2

Q2. Answer: (4) 1:00 p.m.

- Worked solution: both places are east of Greenwich, so subtract the longitudes: 82°30' - 37°30' = 45°.
- At 4 minutes a degree: 45 × 4 = 180 minutes = 3 hours (or 45 ÷ 15 = 3 hours).
- 82°30' E lies to the east of 37°30' E, so it is ahead: add 3 hours to 10:00 a.m. The answer is 1:00 p.m. on the same day.
- Why (1) is wrong: 1:00 a.m. comes from ignoring a.m. and p.m.: 10 + 3 = 13 is written as 1:00 and the “a.m.” of the starting time is kept. 13 o’clock is 1:00 p.m.
- Why (2) is wrong: 7:00 a.m. finds the 3 hours correctly but subtracts them. That is the mirror of adding instead of subtracting for a place to the west: the place whose time is wanted lies to the east, so the time must be added.
- Why (3) is wrong: 10:45 a.m. uses 1 minute a degree (45 minutes) instead of 4 minutes a degree (180 minutes).

Topic 226
India's energy resources and import dependence

Day 23 · Science & Technology | Item 21 · English

Answer explanations

Q11 · Topic question 1

Q1. Answer: (3) A-2, B-4, C-1, D-3

- Why it is correct: Odisha holds the largest coal resources, 1,00,975.78 MT of 4,00,715.45 MT as on 1 April 2025, about 25.2 per cent (A-2). Andhra Pradesh holds 2,52,220 of India's 4,23,222 tonnes of U3O8, about 59.6 per cent, most of it in the YSR Tummalapalle group (B-4). Tamil Nadu holds about 79 per cent of the lignite (C-1). West Bengal holds 44.37 BCM of the 73.61 BCM of coal-bed methane, about 60 per cent (D-3).
- Why (1) is wrong: it makes both exchanges, so all four of its pairs are wrong.
- Why (2) is wrong: it exchanges uranium and coal-bed methane. Andhra Pradesh holds about 59.6 per cent of the uranium, so uranium does not go to West Bengal. West Bengal's lead is in coal-bed methane, with about 60 per cent; Andhra Pradesh has no coal-bed methane row in MoSPI's table.
- Why (4) is wrong: it exchanges coal and lignite. Odisha leads in coal, with about 25.2 per cent; Tamil Nadu leads in lignite, with about 79 per cent. So neither State can take the other's place.

Q12 · Topic question 2

Q2. Answer: (1) 1 and 3 only

- Statement 1 is correct: on 1 April 2024 Rajasthan held 131.50 MMT of crude oil (19.59 per cent), more than onshore Gujarat's 118.86 MMT (17.70 per cent). MoSPI counts Gujarat's offshore fields in the Western Offshore.
- Statement 2 is wrong: Padur, with 2.5 MMT, is the largest of the three built facilities. Mangaluru has 1.5 MMT and Visakhapatnam 1.33 MMT, the smallest.
- Statement 3 is correct: coking coal is 37,372.98 MT of the 3,99,020.80 MT of Gondwana coal, about 9.4 per cent, which is less than one-tenth.
- Statement 4 is wrong: the Western Offshore held the larger share of gas, 342.29 BCM (31.28 per cent), against 263.34 BCM (24.07 per cent) in the Eastern Offshore.
- Why the other options are wrong: (2) leaves out statement 1, which is correct. (3) includes statements 2 and 4, which are wrong, and leaves out statement 3, which is correct. (4) includes statements 2 and 4, which are wrong, and leaves out statements 1 and 3, which are correct.

Topic 227
Chandrayaan missions

Day 23 · Science & Technology | Item 20 · English

Answer explanations

Q13 · Topic question 1

Q1. Answer: (4) 1, 3 and 4 only

- Statement 1 is correct: ISRO's Chandrayaan-1 page lists 11 payloads, five Indian (TMC, HySI, LLRI, HEX and the Moon Impact Probe) and six foreign (CIXS, SIR-2, SARA, Mini SAR, M3 and RADOM).
- Statement 2 is wrong: NASA's release of 24 September 2009 says the water signal of M3 appeared stronger at the Moon's higher latitudes, and that the water molecules were found in the polar regions. The equator is the wrong end.
- Statement 3 is correct: the Union Cabinet approved Chandrayaan-4 on 18 September 2024 with an outlay of Rs 2,104.06 crore, to land on the Moon, collect samples and bring them back to Earth.
- Statement 4 is correct: ISRO reported on 4 December 2023 that the Propulsion Module, which still had over 100 kg of fuel, was moved out of lunar orbit and into an orbit around the Earth, passing its first Earth perigee on 22 November 2023.
- Why the other options are wrong: (1) includes statement 2, which is wrong, and leaves out statements 3 and 4, which are correct. (2) includes statement 2 and leaves out statement 1, which is correct. (3) leaves out statement 4, which is correct.

Q14 · Topic question 2

Q2. Answer: (2) A-3, B-1, C-4, D-2

- Why it is correct: The LIBS instrument on Chandrayaan-3's Pragyan rover confirmed sulphur near the south pole through in-situ measurements; APXS, also on the rover, later detected sulphur too (A-3). Chandrayaan-2's Vikram was meant to land softly, but contact was lost during its descent in September 2019 and it made a hard landing; on 26 August 2023 the Prime Minister named the crash spot Tiranga Point (B-1). The ChaSTE experiment on Chandrayaan-3's Vikram lander gave a temperature profile of the topsoil to a depth of 10 cm, which ISRO calls the first such profile for the lunar south pole (C-4). Chandrayaan-1's Moon Impact Probe separated from the main spacecraft and crashed near the south pole on 14 November 2008, Nehru's birthday, and the site was named Jawahar Sthal (D-2).
- Why (1) is wrong: It exchanges A and C, the two Chandrayaan-3 craft. It gives the topsoil temperature profile to the rover and the sulphur finding to the lander. In fact ChaSTE, which made the temperature profile, was on the Vikram lander, and LIBS, which confirmed sulphur, was on the Pragyan rover. B-1 and D-2 are right.
- Why (3) is wrong: It exchanges both pairs. It makes the A and C mistake of (1) and also the B and D mistake of (4).
- Why (4) is wrong: It exchanges B and D. Chandrayaan-2 was launched in 2019, so its lander cannot have struck the Moon on 14 November 2008; that was Chandrayaan-1's Moon Impact Probe. The probe was never a soft landing; it was Chandrayaan-2's Vikram that was meant to land softly and came down hard. A-3 and C-4 are right.

Topic 228
Letter series and alphabet position tricks

Day 23 · General Mental Ability: Reasoning & Psychological | Item 2 · English

Answer explanations

Q15 · Topic question 1

Q1. Answer: (1) BY

- First letters: P (16), S (19), V (22), Y (25). Each step is +3. Next: 25 + 3 = 28, and 28 - 26 = 2, which is B (going round past Z).
- Second letters: K (11), H (8), E (5), B (2). Each step is -3. Next: 2 - 3 = -1, and -1 + 26 = 25, which is Y (going round past A).
- Check: in every pair the positions add up to 27 (16 + 11, 19 + 8, 22 + 5, 25 + 2), so each pair is a pair of opposite letters. B (2) + Y (25) = 27 also fits.
- Why (2) is wrong: AZ comes from going round wrongly: subtracting 27 instead of 26 (28 - 27 = 1, A), and adding 27 instead of 26 (-1 + 27 = 26, Z). It is one place short at both letters; counting the starting letter as the first step gives the same result.
- Why (3) is wrong: BX has the right first letter, but takes the opposite-letter position of B as 26 - 2 = 24, X, instead of 27 - 2 = 25, Y. B and X add up to 26, not 27.
- Why (4) is wrong: BE moves the second letter forward instead of backward: 2 + 3 = 5, E. The second letters of the series fall, so they must keep falling.

Q16 · Topic question 2

Q2. Answer: (3) K

- The 10th letter from the right end is at position 27 - 10 = 17 from the left, which is Q.
- The 6th letter to the left of Q is at position 17 - 6 = 11, which is K. Count six steps from Q towards A: P, O, N, M, L, K.
- Why (1) is wrong: D comes from counting from the wrong end: the 10th letter from the left is J (10), and 10 - 6 = 4, D.
- Why (2) is wrong: J comes from a wrong reverse position: 26 - 10 = 16, P, and 16 - 6 = 10, J. The reverse position is 27 minus the position, not 26 minus it.
- Why (4) is wrong: L comes from counting Q itself as the first of the six letters, which gives only five steps: 17 - 5 = 12, L.

Topic 229
Arithmetic mean: shortcuts and the deviation method

Day 23 · General Mental Ability: Quantitative & Data | Item 8 · English

Answer explanations

Q17 · Topic question 1

Q1. Answer: (2) 492.5 g

- Worked solution: take the assumed mean a = 490, the weight with the most packets, near the middle. The deviations d = x - 490 are -20, -10, 0, 10, 20, 30.
- f × d = -100, -80, 0, 70, 120, 90, so Σfd = 100. The total frequency is 40.
- Mean = 490 + 100 ÷ 40 = 490 + 2.5 = 492.5 g.
- Check by step-deviation: h = 10 gives u = -2 to 3 and Σfu = 10; mean = 490 + 10 × 10/40 = 492.5. Check by the direct method: Σfx = 19,700, and 19,700 ÷ 40 = 492.5.
- Why (1) is wrong: 490.25 = 490 + 10 ÷ 40. It uses the step deviations u (Σfu = 10) but forgets to multiply by h = 10.
- Why (3) is wrong: 495 = (470 + 480 + 490 + 500 + 510 + 520) ÷ 6. It is the plain average of the six weights and ignores the number of packets at each weight; each weight must be weighted by its frequency, as each group's mean is weighted by its size in 2.5.
- Why (4) is wrong: 506.67 = 490 + 100 ÷ 6 (to two decimal places). It divides Σfd by the number of rows (6) instead of the total frequency (40).

Q18 · Topic question 2

Q2. Answer: (4) 72

- Worked solution: total of the 8 values = 8 × 45 = 360. Total of the 9 values = 9 × 48 = 432.
- Ninth value = 432 - 360 = 72.
- Check another way: the ninth value must bring the new mean, 48, for itself and also supply 3 more for each of the other 8 values: 48 + 8 × 3 = 72. Check: (360 + 72) ÷ 9 = 48.
- Why (1) is wrong: 24 = 8 × 48 - 8 × 45. It forgets to change the count: the new total belongs to 9 values, not 8.
- Why (2) is wrong: 51 comes from (45 + x) ÷ 2 = 48. It averages the old mean with the new value as if the old mean were a single value; the old mean stands for 8 values.
- Why (3) is wrong: 69 = 45 + 8 × 3. It starts from the old mean, 45, instead of the new mean, 48: the ninth value itself must also be at the new level.

Topic 230
Current affairs: natural farming in Andhra Pradesh and the NTR district model

Day 23 · Current Affairs | CA-AP · English

Answer explanations

Q19 · Topic question 1

Q1. Answer: (3) 2 and 4 only

- Statement 1 is wrong: the fourth principle is the opposite. APCNF asks farmers to minimise soil disturbance and reduce tillage, and to keep the soil covered with living crops or crop residues.
- Statement 2 is correct: APCNF describes PMDS as sowing seeds in dry soil before the monsoon, with crop residue mulch; with pelleted seeds it allows up to three harvests a year.
- Statement 3 is wrong: the Collector said the QR code-based system helps consumers track produce from seed to sale. It is about traceability for buyers, not credit for farmers.
- Statement 4 is correct: APCNF's own page describes RySS as a not-for-profit organisation established and fully owned by the Government of Andhra Pradesh.
- Why the other options are wrong: (1) and (2) contain statement 1, which is wrong; (1) and (4) contain statement 3, which is wrong.

Q20 · Topic question 2

Q2. Answer: (1) A-1, B-3, C-4, D-2

- Why it is correct: APCNF began in 2016 with a pilot in 615 Gram Panchayats with 40,000 farmers (A-1). The NMNF, approved on 25 November 2024, aims at 7.5 lakh hectares through 15,000 clusters in willing Gram Panchayats (B-3). BPKP was the sub-scheme of PKVY that gave Rs 12,200 per hectare for three years and has been up-scaled into the NMNF (C-4). PKVY gives Rs 31,500 per hectare over three years, of which Rs 15,000 goes by DBT for organic inputs (D-2).
- Why (2) is wrong: it exchanges APCNF and the NMNF. The 2016 pilot was the start of the State programme; the 15,000-cluster target belongs to the national mission of 2024.
- Why (3) is wrong: it exchanges BPKP and PKVY. BPKP is the sub-scheme with Rs 12,200 per hectare; PKVY is the parent scheme with Rs 31,500 per hectare.
- Why (4) is wrong: it makes both exchanges, so all four of its pairs are wrong.