Day 28 | 20 MCQs with complete explanations

English

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Topics 271–280. Updated 1 November 2026.

Topic	Contents
271	Early political associations and the founding of the Indian National Congress
272	Ambedkar and the making of the Constitution
273	74th Amendment and urban local bodies
274	Agricultural credit: institutional sources, KCC and NABARD
275	Population of Andhra Pradesh: size, density and growth
276	Communication satellites: INSAT and GSAT series
277	Energy policy of India: key policies and targets
278	Coding-decoding: number and position codes
279	Area of triangles: base-height and Heron's formula
280	Current affairs: HPV vaccination for girls and the prevention of cervical cancer

Topic 271 | Early political associations and the founding of the Indian National Congress

Q1. Match List I (Association) with List II (Year of founding):

List I (Association)	List II (Year of founding)
A. East India Association	1. 1843
B. Bengal British India Society	2. 1851
C. Indian Association	3. 1866
D. British Indian Association	4. 1876

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

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

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

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

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

- Why it is correct: Dadabhai Naoroji founded the East India Association in London in 1866 (A-3). The Bengal British India Society was formed in Calcutta in 1843 (B-1). Surendranath Banerjea and Ananda Mohan Bose founded the Indian Association in Calcutta in 1876 (C-4). The British Indian Association was formed at Calcutta on 29 October 1851, after the Landholders' Society and the Bengal British India Society had merged into it (D-2).
- Why (1) is wrong: it exchanges the East India Association and the Indian Association. The London body of Naoroji came ten years before the Bengal body of Banerjea and Bose.
- Why (3) is wrong: it exchanges the two Calcutta bodies with almost the same name. The Bengal British India Society was the older one; it merged into the British Indian Association, so it cannot be the body of 1851.
- Why (4) is wrong: it exchanges both pairs, so all four matches are wrong.

Q2. Consider the following statements about the founding of the Indian National Congress and its background:

1. The first session of the Congress had been planned for Poona, but it was moved to Bombay because of an outbreak of cholera.
2. Badruddin Tyabji presided over the Congress session held at Madras in 1887.
3. According to NCERT, the Vernacular Press Act was passed after the Ilbert Bill controversy.

4. According to Britannica, A.O. Hume served as general secretary of the Congress for its first 22 years.

Which of the statements given above is/are correct?

(1) 1 and 3 only

(2) 2, 3 and 4 only

(3) 1 and 2 only

(4) 1, 2 and 4 only

Q2. Answer: (4) 1, 2 and 4 only

- Statement 1 is correct: a notice of March 1885 convened the Indian National Union at Poona for December; an outbreak of cholera in Poona moved the meeting to Bombay, where it met at Gokuldas Tejpal Sanskrit College from 28 to 31 December 1885.
- Statement 2 is correct: the third session, at Madras in 1887, was presided over by Badruddin Tyabji. Naoroji presided at Calcutta in 1886, and George Yule at Allahabad in 1888.
- Statement 3 is wrong: NCERT gives the Vernacular Press Act in 1878 and the Ilbert Bill controversy in 1883. The Act came five years before the controversy, not after it.
- Statement 4 is correct: Britannica says Hume was one of the conveners of the first session and served as general secretary of the Congress for its first 22 years.
- Why the other options are wrong: (1) includes statement 3, which is wrong, and leaves out statements 2 and 4. (2) includes statement 3, which is wrong, and leaves out statement 1. (3) leaves out statement 4, which is correct.

Topic 272 | Ambedkar and the making of the Constitution

Q1. Consider the following statements about the work of the Drafting Committee of the Constituent Assembly:

1. The Drafting Committee submitted the Draft Constitution to the President of the Constituent Assembly in February 1948.
2. In moving the Draft Constitution on 4 November 1948, Dr B.R. Ambedkar told the Assembly that it contained 395 Articles and 8 Schedules.
3. According to Dr Ambedkar's speech of 25 November 1949, approximately 7,635 amendments to the Draft Constitution were tabled, and 2,473 were actually moved in the House.
4. T.T. Krishnamachari told the Assembly on 5 November 1948 that all seven members named to the Drafting Committee had taken a full part in its work.

Which of the statements given above is/are correct?

(1) 1 and 4 only

(2) 2 and 3 only

(3) 1 and 3 only

(4) 2 and 4 only

Q1. Answer: (3) 1 and 3 only

- Statement 1 is correct: the Drafting Committee submitted the Draft Constitution to the President of the Constituent Assembly on 21 February 1948. It was then published and circulated among the public. On 4 November 1948 Ambedkar referred to "my letter of the 21st February 1948".
- Statement 2 is wrong: Ambedkar said, "It contains 315 Articles and 8 Schedules." The figure of 395 Articles belongs to the Constitution as adopted on 26 November 1949, which had 395 Articles in 22 Parts and 8 Schedules.
- Statement 3 is correct: in his concluding speech Ambedkar said the amendments tabled numbered "approximately 7,635", and that those "actually moved in the House were 2,473".
- Statement 4 is wrong: T.T. Krishnamachari said the opposite. Of the seven members, one had resigned and been replaced, one had died and was not replaced, one was away in America and another was engaged in State affairs. So "the burden of drafting this constitution fell on Dr. Ambedkar".

- Why the other options are wrong: (1) includes statement 4, which is wrong, and leaves out statement 3, which is correct. (2) includes statement 2, which is wrong, and leaves out statement 1, which is correct. (4) includes statements 2 and 4, both wrong, and leaves out the correct statements 1 and 3.

Q2. Match List I (words used by Dr B.R. Ambedkar in the Constituent Assembly) with List II (what he used them about):

List I (Ambedkar's words)	List II (What he used them about)
A. "the very soul of the Constitution and the very heart of it"	1. The choice of the parliamentary system of executive in the Draft Constitution
B. "a dead letter"	2. Draft Article 25, on the remedies for enforcing the Fundamental Rights
C. "has preferred more responsibility to more stability"	3. Unconstitutional methods of protest, where constitutional methods are open
D. "the Grammar of Anarchy"	4. The draft Articles for the failure of constitutional machinery in a province

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

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

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

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

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

- A-2: on 9 December 1948, replying on draft Article 25, the remedies for enforcing the Fundamental Rights, Ambedkar said: "It is the very soul of the Constitution and the very heart of it". In the Constitution as adopted, this remedy is in Article 32.
- B-4: on 4 August 1949, on the Articles for the failure of constitutional machinery in a province (draft Article 278, now Article 356), he hoped "that such articles will never be called into operation and that they would remain a dead letter".
- C-1: on 4 November 1948 he said the Draft Constitution, "in recommending the Parliamentary system of Executive has preferred more responsibility to more stability".
- D-3: on 25 November 1949 he said that where constitutional methods are open, "there can be no justification for these unconstitutional methods", and that "These methods are nothing but the Grammar of Anarchy".
- Why (2) is wrong: it exchanges A and C. The "very soul" was draft Article 25, not the parliamentary system; responsibility and stability were the tests he applied to the executive.
- Why (3) is wrong: it exchanges B and D. "Dead letter" was his hope for the emergency Articles on a province; the "Grammar of Anarchy" was his name for unconstitutional methods of protest.
- Why (4) is wrong: it makes both exchanges, so all four of its pairs are wrong.

Topic 273 | 74th Amendment and urban local bodies

Q1. Match List I (Article of Part IXA) with List II (What the Article provides):

List I (Article)	List II (What it provides)
A. Article 243X	1. Recommendations made to the Governor are laid before the State Legislature with an explanatory memorandum on the action taken
B. Article 243Y	2. Not less than two-thirds of the members are elected by, and from amongst, the elected members of Municipalities and the Chairpersons of Panchayats
C. Article 243ZD	3. Not less than four-fifths of the members are elected in proportion to the ratio between the rural and the urban population
D. Article 243ZE	4. A State law may authorise the local body to levy, collect and appropriate duties, tolls and fees, subject to limits

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

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

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

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

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

- Why it is correct: Article 243X lets a State law authorise a Municipality to levy, collect and appropriate taxes, duties, tolls and fees, within procedure and limits (A-4). Article 243Y makes the Finance Commission constituted under Article 243-I review the finances of Municipalities; the Governor lays its recommendations, with an explanatory memorandum on the action taken, before the State Legislature (B-1). Article 243ZD sets up the District Planning Committee, in which not less than four-fifths of the members are elected from the district Panchayat and the Municipalities in proportion to the rural and urban population (C-3). Article 243ZE sets up the Metropolitan Planning Committee, in which not less than two-thirds are elected by, and from amongst, the elected members of the Municipalities and the Chairpersons of the Panchayats in the area (D-2).
- Why (2) is wrong: it exchanges Articles 243X and 243Y. Both deal with the money of Municipalities, but 243X is the power to levy, and 243Y is the review by the Finance Commission whose report goes before the State Legislature.

- Why (3) is wrong: it exchanges Articles 243ZD and 243ZE. Both Committees have elected majorities, but the share is four-fifths in the District Planning Committee and two-thirds in the Metropolitan Planning Committee.
- Why (4) is wrong: it makes both exchanges, so all four of its pairs are wrong.

Q2. Consider the following statements about Municipalities under Part IXA of the Constitution:

1. Under Article 243Q, a Nagar Panchayat is constituted for a smaller urban area.
2. Article 243Q provides that a Municipality may not be constituted in an urban area that the Governor, by public notification, specifies to be an industrial township.
3. According to Article 243W, the matters listed in the Twelfth Schedule stand transferred to Municipalities by the Constitution itself.
4. Under Article 243S, the smallest population at which a Municipality must have Wards Committees is ten lakhs.

Which of the statements given above is/are correct?

(1) 1 and 2 only

(2) 3 and 4 only

(3) 2 only

(4) 1, 3 and 4 only

Q2. Answer: (3) 2 only

- Statement 1 is wrong: Article 243Q provides a Nagar Panchayat for a transitional area. A Municipal Council is for a smaller urban area, and a Municipal Corporation for a larger urban area.
- Statement 2 is correct: the proviso to Article 243Q says that a Municipality may not be constituted in an urban area that the Governor, by public notification, specifies to be an industrial township, having regard to the size of the area and the municipal services being provided, or proposed to be provided, by an industrial establishment there.
- Statement 3 is wrong: Article 243W says that the State Legislature “may, by law, endow” Municipalities with powers, including those on the Twelfth Schedule matters. The Constitution itself transfers nothing; the matters pass only through a State law.
- Statement 4 is wrong: Article 243S requires Wards Committees in a Municipality having a population of three lakhs or more, so the smallest such population is three lakhs. Ten lakhs is the figure in the definition of a Metropolitan area (Article 243P).
- 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. (4) includes statements 1, 3 and 4, all wrong, and leaves out statement 2.

Topic 274 | Agricultural credit: institutional sources, KCC and NABARD

Q1. Consider the following statements about agricultural credit in India:

1. According to the Economic Survey 2025-26, ground level credit to agriculture in 2024-25 fell short of the target of Rs 27.5 lakh crore.
2. The Economic Survey 2025-26 puts the share of non-institutional sources in agricultural credit at 23.4 per cent in 2021-22.
3. Under the RBI's Priority Sector Lending Directions, 2025, a farmer with land up to 1 hectare is a marginal farmer.
4. Under the same Directions, the sub-target for small and marginal farmers is 10 per cent of ANBC or CEOBSE, whichever is higher.

Which of the statements given above is/are correct?

(1) 1, 2 and 4 only

(2) 1 and 3 only

(3) 2 and 3 only

(4) 2, 3 and 4 only

Q1. Answer: (4) 2, 3 and 4 only

- Statement 1 is wrong: the Survey says ground level credit reached Rs 28.69 lakh crore in 2024-25, surpassing the target of Rs 27.5 lakh crore.
- Statement 2 is correct: the Survey says non-institutional credit fell from 90 per cent in 1950 to 23.4 per cent in 2021-22.
- Statement 3 is correct: the RBI defines a marginal farmer as one with land up to 1 hectare. This differs from the Agriculture Census, which puts a holding of exactly 1.00 hectare in the small class; the statement names the RBI.
- Statement 4 is correct: the PSL Directions set agriculture at 18 per cent and, within it, small and marginal farmers at 10 per cent of ANBC or CEOBSE, whichever is higher.
- Why the other options are wrong: (1) and (2) contain statement 1, which is wrong. (3) leaves out statement 4, which is correct.

Q2. Match List I (Arrangement in farm credit) with List II (Year it began or took effect):

List I (Arrangement in farm credit)	List II (Year it began or took effect)
A. Kisan Credit Card, by the RBI's first circular on it	1. 1998

List I (Arrangement in farm credit)	List II (Year it began or took effect)
B. Modified Interest Subvention Scheme, as a Central Sector Scheme	2. 2025
C. National Bank for Agriculture and Rural Development	3. 2006-07
D. Rs 2 lakh ceiling for collateral-free agricultural loans	4. 1982

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

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

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

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

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

- Why it is correct: the RBI's first circular on Kisan Credit Cards is dated 5 August 1998 (A-1). PIB says the Modified Interest Subvention Scheme was introduced as a Central Sector Scheme in 2006-07 (B-3). NABARD came into existence on 12 July 1982 (C-4). The collateral-free limit for agricultural loans was raised from Rs 1.6 lakh to Rs 2 lakh per borrower by an RBI circular of 6 December 2024, in force from 1 January 2025 (D-2).
- Why (1) is wrong: it exchanges the Kisan Credit Card and NABARD. NABARD came first, in 1982, and itself prepared the model KCC scheme that the RBI's 1998 circular launched.
- Why (3) is wrong: it makes both exchanges: the KCC and NABARD, as in (1), and the interest subvention scheme and the collateral-free ceiling, as in (4).
- Why (4) is wrong: it exchanges the interest subvention scheme and the collateral-free ceiling. The scheme began in 2006-07; 2025 is the year of the Budget announcement about its loan limit, not of its start. The Rs 2 lakh ceiling took effect on 1 January 2025.

Topic 275 | Population of Andhra Pradesh: size, density and growth

Q1. Match List I (district of Andhra Pradesh as it stood in the 2011 Census) with List II (density of population in 2011, persons per sq km):

List I (district, 2011)	List II (density, 2011)
A. Srikakulam	1. 384
B. Visakhapatnam	2. 188
C. YSR Kadapa	3. 463
D. Chittoor	4. 275

Select the correct answer using the code given below:

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

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

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

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

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

- A-3: Srikakulam had a density of 463 per sq km in 2011, though it was the least urbanised district.
- B-1: Visakhapatnam had a density of 384, though it was the most urbanised district. A big city does not make a district the densest.
- C-2: YSR Kadapa was the least dense district, at 188.
- D-4: Chittoor had a density of 275, well above Kadapa's 188, though both are Rayalaseema districts.
- Why the other options are wrong: (4) exchanges YSR Kadapa and Chittoor. Both are Rayalaseema districts, but Kadapa was the least dense district of the State and Chittoor was well above it. (1) exchanges Srikakulam and Visakhapatnam, the trap of thinking that the district with the big city must be denser. (3) makes both exchanges.

Q2. Consider the following statements about the population of Andhra Pradesh:

1. The Technical Group on Population Projections projected Andhra Pradesh and Telangana together, on the 2011 population of the undivided State.
2. In the National Family Health Survey-5 (2019-21), Andhra Pradesh had a total fertility rate below the replacement level.

3. According to the Andhra Pradesh Socio-Economic Survey, on the 2011 Census figures recast for the present State, Andhra Pradesh ranks 10th among the States in population.
4. According to the Andhra Pradesh Socio-Economic Survey, the decadal growth rate of the State's population was lower in 1981-91 than in 1961-71.

Which of the statements given above is/are correct?

(1) 2 and 3 only

(2) 1 and 4 only

(3) 1 and 2 only

(4) 3 and 4 only

Q2. Answer: (1) 2 and 3 only

- Statement 1 is wrong: the Technical Group projected Andhra Pradesh and Telangana separately, on their recast 2011 populations (49,577 thousand and 35,004 thousand). It used the undivided State's combined SRS estimates only for the years before 2014.
- Statement 2 is correct: the NFHS-5 TFR of Andhra Pradesh was 1.7, and a Lok Sabha answer of 20 December 2024 lists the State among those with fertility below the replacement level.
- Statement 3 is correct: on the 2011 Census figures recast for the present State, the Socio-Economic Survey calls Andhra Pradesh the 10th largest State in population, with about 4.1 per cent of India's people.
- Statement 4 is wrong: growth rose from 18.88 per cent in 1961-71 to 21.13 per cent in 1981-91. The sharp fall came after that, down to 9.21 per cent in 2001-11.
- Why the other options are wrong: (2) has both wrong statements, 1 and 4, and leaves out 2 and 3. (3) has statement 1, which is wrong, and leaves out statement 3. (4) has statement 4, which is wrong, and leaves out statement 2.

Topic 276 | Communication satellites: INSAT and GSAT series

Q1. Consider the following statements about India's communication satellites:

1. Besides its communication transponders, INSAT-2A carried a Very High Resolution Radiometer for meteorological observation.
2. A communication transponder receives a signal on an uplink frequency and, after converting and amplifying it, sends it back to the earth on a downlink frequency.
3. GSAT-30 was meant to take over the services of INSAT-4A, with coverage in the C and Ku bands.
4. NSIL calls GSAT-20 (GSAT-N2) its first demand-driven mission and GSAT-24 its second.

Which of the statements given above is/are correct?

(1) 1 and 4 only

(2) 2 and 3 only

(3) 1, 2 and 3 only

(4) 1, 3 and 4 only

Q1. Answer: (3) 1, 2 and 3 only

- Statement 1 is correct: ISRO's INSAT-2A page lists, besides the C, extended C and S-band transponders, a Very High Resolution Radiometer (2 km resolution in the visible band, 8 km in the infrared) and a data relay transponder for meteorological data. That is why ISRO calls it a multipurpose satellite.
- Statement 2 is correct: this is ISRO's own account of a transponder: it receives on an uplink frequency, converts the signal to a downlink frequency, amplifies it and beams it back to the earth.
- Statement 3 is correct: ISRO says GSAT-30 serves as a replacement for the services of INSAT-4A and works in the C and Ku bands, with Ku-band coverage over the Indian mainland and islands and C-band coverage reaching the Gulf, many Asian countries and Australia.
- Statement 4 is wrong: the order is the other way round. GSAT-24 (June 2022) was NSIL's first demand-driven mission, and NSIL calls GSAT-N2 (GSAT-20, November 2024) its second.
- Why the other options are wrong: (1) includes statement 4, which is wrong, and leaves out statements 2 and 3. (2) leaves out statement 1, which is correct. (4) includes statement 4 and leaves out statement 2.

Q2. Match List I (Communication satellite) with List II (Launch vehicle that carried it):

List I (Communication satellite)	List II (Launch vehicle)
A. GSAT-7A	1. Falcon 9 of SpaceX
B. CMS-01	2. GSLV
C. GSAT-20 (GSAT-N2)	3. PSLV
D. CMS-03	4. LVM3

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

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

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

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

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

- Why it is correct: GSAT-7A was launched by GSLV-F11 on 19 December 2018 (A-2). CMS-01 was launched by PSLV-C50 on 17 December 2020 (B-3). GSAT-20 (GSAT-N2), 4,700 kg, was launched by SpaceX's Falcon 9 from Cape Canaveral on 19 November 2024 (C-1). CMS-03, about 4,400 kg, was launched by LVM3-M5 from Sriharikota on 2 November 2025 (D-4).
- Why (1) is wrong: it exchanges both pairs. It puts GSAT-7A on PSLV and CMS-01 on GSLV, and GSAT-20 on LVM3 and CMS-03 on Falcon 9.
- Why (2) is wrong: it exchanges GSAT-7A and CMS-01. GSAT-7A went on GSLV-F11; CMS-01, of the CMS series, went on PSLV-C50.
- Why (3) is wrong: it exchanges GSAT-20 and CMS-03. GSAT-20 was too heavy for LVM3 and went on Falcon 9; CMS-03 is the one that went on LVM3 from Indian soil.

Topic 277 | Energy policy of India: key policies and targets

Q1. Match List I (Energy or climate target of India) with List II (Year or period by which it is to be met, as the official source states it):

List I (Target)	List II (By when)
A. Net zero	1. 2047
B. Nuclear power capacity of at least 100 GW	2. 2070
C. At least five indigenously developed small modular reactors in operation	3. 2030
D. 500 GW of non-fossil energy capacity	4. 2033

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

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

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

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

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

- Why it is correct: net zero is for 2070 (Panchamrit, COP26, 1 November 2021) (A-2). The Union Budget 2025-26 set at least 100 GW of nuclear energy by 2047 (B-1). The same Budget set up a Nuclear Energy Mission for small modular reactors, with at least 5 indigenously developed SMRs to be in operation by 2033 (C-4). The same Panchamrit commitments set 500 GW of non-fossil energy capacity by 2030 (D-3).
- Why (1) is wrong: it exchanges net zero and the 500 GW target. 500 GW of non-fossil capacity is for 2030; net zero is for 2070.
- Why (2) is wrong: it exchanges the two nuclear targets. 2047 is the year for 100 GW of nuclear capacity; the five SMRs are due by 2033.
- Why (3) is wrong: it makes both exchanges, so all four of its pairs are wrong.

Q2. Consider the following statements about India's energy and climate policies:

1. According to India's updated NDC of August 2022, the 45 per cent cut in the emissions intensity of GDP by 2030 is measured from the 2005 level.
2. The SHANTI Act, 2025 amends the Civil Liability for Nuclear Damage Act, 2010 and keeps it in force.

3. According to the Prime Minister's National Statement at COP26 in Glasgow, India will reduce its total projected carbon emissions by one billion tonnes from then till 2047.
4. The Bureau of Energy Efficiency was set up under the Electricity Act, 2003.

Which of the statements given above is/are correct?

(1) 2 and 4 only

(2) 1, 2 and 3 only

(3) 1 only

(4) 3 and 4 only

Q2. Answer: (3) 1 only

- Statement 1 is correct: the updated NDC states the target as reducing the emissions intensity of GDP by 45 per cent by 2030, from the 2005 level.
- Statement 2 is wrong: section 91 of the SHANTI Act, 2025 provides for repeal of the Civil Liability for Nuclear Damage Act, 2010, along with the Atomic Energy Act, 1962. This question compares the enacted provisions; actual commencement requires notification under section 1(2), and assent alone does not establish that every provision is in force.
- Statement 3 is wrong: the COP26 statement promised to reduce total projected carbon emissions by one billion tonnes from then till 2030, not till 2047.
- Statement 4 is wrong: the BEE was set up on 1 March 2002 under the Energy Conservation Act, 2001, not under the Electricity Act, 2003.
- Why the other options are wrong: (1) contains statements 2 and 4, both wrong, and leaves out statement 1. (2) contains statements 2 and 3, both wrong. (4) contains statements 3 and 4, both wrong, and leaves out statement 1.

Topic 278 | Coding-decoding: number and position codes

Q1. In a certain code, GOLD is written as 20-12-15-23. How is SILVER written in that code?

(1) 8-18-15-5-22-9

(2) 19-9-12-22-5-18

(3) 7-17-14-4-21-8

(4) 22-12-15-25-8-21

Q1. Answer: (1) 8-18-15-5-22-9

- Find the rule: G (7) → 20, O (15) → 12, L (12) → 15, D (4) → 23. At every letter the position and the code add up to 27, so each letter is written as its reverse position, 27 - position.
- Apply: S (19) → 27 - 19 = 8. I (9) → 18. L (12) → 15. V (22) → 5. E (5) → 22. R (18) → 9.
- So SILVER is written as 8-18-15-5-22-9. Check: 8 + 19, 18 + 9, 15 + 12, 5 + 22, 22 + 5 and 9 + 18 are all 27.
- Why (2) is wrong: 19-9-12-22-5-18 is the forward positions of SILVER. It uses the forward position instead of the reverse position; the example shows G as 20, not 7.
- Why (3) is wrong: 7-17-14-4-21-8 takes 26 - position, which is one less at every letter. The off-by-one rule would make GOLD 19-11-14-22, not 20-12-15-23.
- Why (4) is wrong: 22-12-15-25-8-21 is each forward position plus 3. That rule is taken from one letter only: L (12) → 15 fits it, but by the same rule G would be 10, not 20, and O would be 18, not 12. Test a rule on every letter of the example before you use it.

Q2. In a certain code, '1 8 6' means 'fresh green leaves', '5 6 3' means 'green tea cup' and '8 2 5' means 'fresh cup water'. What is the code for 'cup'?

(1) 3

(2) 5

(3) 6

(4) 8

Q2. Answer: (2) 5

- 'cup' appears in statements 2 and 3 ('green tea cup' and 'fresh cup water'), and in no other. The code that statements 2 and 3 share is 5 ('5 6 3' and '8 2 5'). So cup = 5.

- Check the rest: statements 1 and 2 share ‘green’ and 6, so green = 6; statements 1 and 3 share ‘fresh’ and 8, so fresh = 8. In statement 2, green = 6 and cup = 5, so tea = 3. Every code is used once.
- Why (1) is wrong: 3 comes from matching by order. ‘cup’ is the third word of ‘green tea cup’ and 3 is the third code of ‘5 6 3’; but the order of the codes need not follow the order of the words, and 3 is the code for tea.
- Why (3) is wrong: 6 is the code common to statements 1 and 2, which share ‘green’, not ‘cup’. It compares the wrong pair of statements.
- Why (4) is wrong: 8 is the code common to statements 1 and 3, which share ‘fresh’, not ‘cup’. It also compares the wrong pair of statements.

Topic 279 | Area of triangles: base-height and Heron's formula

Q1. A triangular plot of land has sides 170 m, 250 m and 280 m. What is its area?

(1) 1.05 hectares

(2) 2.1 hectares

(3) 210 hectares

(4) 44,100 hectares

Q1. Answer: (2) 2.1 hectares

- Worked solution, step 1: s = (170 + 250 + 280)/2 = 700/2 = 350 m. Then s - a = 180 m, s - b = 100 m, s - c = 70 m.
- Step 2: Area = √(350 × 180 × 100 × 70) = √441,000,000 = 21,000 m². (In primes: 350 × 180 × 100 × 70 = $2^6 \times 3^2 \times 5^6 \times 7^2$, whose root is $2^3 \times 3 \times 5^3 \times 7$ = 21,000.)
- Step 3: 1 hectare = 10,000 m², so 21,000 m² = 21,000 ÷ 10,000 = 2.1 hectares.
- Why (1) is wrong: 1.05 hectares is half of the right answer. It halves Heron's result again, as if it were ½ × base × height; but Heron's formula already gives the whole area.
- Why (3) is wrong: 210 hectares = 21,000 ÷ 100. It converts square metres to hectares with the factor 100, as if 1 hectare were 100 m². The factor is 10,000 (100 × 100).
- Why (4) is wrong: 44,100 hectares = 441,000,000 ÷ 10,000. It leaves out the square root and converts s(s - a)(s - b)(s - c) itself.

Q2. The perimeter of an equilateral triangle is 96 cm. What is its area?

(1) 128√3 cm²

(2) 144√3 cm²

(3) 192√3 cm²

(4) 256√3 cm²

Q2. Answer: (4) 256√3 cm²

- Worked solution: side = 96 ÷ 3 = 32 cm. Area = (√3/4) × 32^2 = (√3/4) × 1024 = 256√3 cm² (about 443.41 cm²).
- Check by Heron's formula: s = 48 cm and s - a = 16 cm for each side, so area = √(48 × 16 × 16 × 16) = √196608 = 256√3 cm².
- Check by ½ × base × height: height = (√3/2) × 32 = 16√3 cm, and ½ × 32 × 16√3 = 256√3 cm².

- Why (1) is wrong: $128\sqrt{3} = \frac{1}{2} \times 32 \times 8\sqrt{3}$. It takes the height as $(\sqrt{3}/4) \times 32$, putting the coefficient of the area formula in place of the coefficient $\sqrt{3}/2$ of the height. The result is half the right area.
- Why (2) is wrong: $144\sqrt{3} = (\sqrt{3}/4) \times 24^2$. It finds the side as 96 ÷ 4 = 24 cm, as for a square. A triangle has three sides, so the side is 96 ÷ 3 = 32 cm.
- Why (3) is wrong: $192\sqrt{3} = (\sqrt{3}/4) \times (16\sqrt{3})^2 = (\sqrt{3}/4) \times 768$. It finds the height, $16\sqrt{3}$ cm, and then puts the height in place of the side.

Topic 280 | Current affairs: HPV vaccination for girls and the prevention of cervical cancer

Q1. Consider the following statements about HPV vaccination and cervical cancer:

1. In the nationwide campaign launched on 28 February 2026, the HPV vaccine is given as a single intramuscular dose of 0.5 ml.
2. Under the WHO's global strategy, the 2030 target for screening is that 90 per cent of women are screened with a high-performance test by 35 years of age and again by 45 years of age.
3. The virus-like particles in Cervavac contain no viral DNA, so they cannot infect cells.
4. According to the WHO, in a woman with a normal immune system it usually takes 15 to 20 years for abnormal cervical cells to become cancer.

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

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

- Statement 1 is correct: the MoHFW release of 28 February 2026 gives a single dose of 0.5 ml by intramuscular injection in the left upper arm.
- Statement 2 is wrong: the screening target is 70 per cent of women screened by 35 and again by 45. The figure of 90 per cent belongs to the vaccination target (girls fully vaccinated by age 15) and to the treatment target.
- Statement 3 is correct: the product information of Cervavac says that because the virus-like particles contain no viral DNA, they cannot infect cells, reproduce or cause disease.
- Statement 4 is correct: the WHO fact sheet gives 15 to 20 years with a normal immune system, and 5 to 10 years with a weakened immune system such as untreated HIV.
- Why the other options are wrong: (2) and (3) include statement 2, which is wrong. (4) leaves out statement 1, which is correct.

Q2. Match List I (bodies) with List II (their part in the prevention of cervical cancer, as the official sources describe it):

List I	List II
A. SAGE	1. Concluded in 2022 that a single dose of HPV vaccine gives protection comparable to two-dose schedules

List I	List II
B. Gavi	2. Partnered a Union Government department and the Bill and Melinda Gates Foundation in the work that produced Cervavac
C. BIRAC	3. Adopted in 2020 the resolution behind the global strategy to accelerate the elimination of cervical cancer
D. WHA	4. The partner through which the doses for India's 2026 HPV campaign are procured

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

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

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

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

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

- Why it is correct: the WHO's Strategic Advisory Group of Experts on Immunization (SAGE) concluded in 2022 that a single dose gives protection comparable to two doses (A-1). The vaccine for India's 2026 campaign is procured in partnership with Gavi, the Vaccine Alliance (B-4). PIB described Cervavac as an outcome of a partnership of the DBT and BIRAC with the Bill and Melinda Gates Foundation (C-2). The World Health Assembly (WHA) adopted resolution WHA73.2 in 2020, on which the WHO's global strategy rests (D-3).
- Why (1) is wrong: it swaps SAGE and the WHA. SAGE is the WHO's advisory group of experts on immunization, and it gave the advice on doses; the 2020 resolution on eliminating cervical cancer was adopted at the World Health Assembly.
- Why (2) is wrong: it swaps Gavi and BIRAC. BIRAC, set up by the DBT, was a partner in developing Cervavac; Gavi is the partner for procuring the campaign's doses.
- Why (4) is wrong: it makes both swaps, so all four pairs are wrong.