Agniveer Army GD 3 July 2025 (Shift 1) Memory-Based Paper (Previous Year Paper)

Army GD Agniveer • 2025 • 50 questions • 60 minutes • Answer key and solutions

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GENERAL KNOWLEDGE

Q1. Which Mughal Emperor built the Taj Mahal?

(a) Shah Jahan
(b) Bhahadur Shah
(c) Akbar
(d) Aurangzeb

Q2. Badaga tribe belongs to which state?

(a) Karnataka
(b) Kerala
(c) Andhra Pradesh
(d) Tamil Nadu

Q3. Which dance style was recognised by the famous 'Tanjore Quartet' of the nineteenth century?

(a) Kathakali
(b) Bharatanatyam
(c) Kathak
(d) Mohiniattam

Q4. Which of the following practices is least harmful in the conservation of forests and wildlife?

(a) Using forests as a source of raw material for industries
(b) Converting forests to plantations
(c) Collecting non-timber forest produce
(d) Building roads and dams in forested areas

Q5. Who appoints the chairman and other members of the 'Union Public Service Commission'?

(a) President of India
(b) Chief Justice of Supreme Court of India
(c) Prime Minister of India
(d) CEO of NITI Aayog

Q6. 'Kuno National Park' has become famous recently because of—

(a) reintroduction of the 'Dodo bird' from Europe
(b) reintroduction of the 'Cheeta' from Central Asia
(c) reintroduction of the 'Cheeta' from Africa
(d) reintroduction of the 'Lion' from Africa

Q7. Who was the first woman President of the Indian National Congress?

(a) Annie Besant
(b) Vijaya laxmi Pandit
(c) Sarojini Naidu

(d) Aruna Asaf Ali

Q8. Which article of the Indian constitution specifies equality before the law?

(a) Article 19
(b) Article 23
(c) Article 14
(d) Article 36

Q9. Which of the following events was led by Sardar Vallabhbhai Patel?

(a) Dandi March
(b) Bardoli Satyagraha
(c) Chittagong Armoury Raid
(d) Kakori Conspiracy

Q10. What is the primary function of Air Force maintenance?

(a) To train pilots for combat operations
(b) To ensure aircraft remain serviceable, safe, and mission-ready
(c) To manage air traffic control and communication systems
(d) To plan and conduct aerial surveillance missions

Q11. Which Constitutional Amendment Act was given to Sikkim as the full state of the Union of India?

(a) 34th Constitutional Amendment
(b) 36th Constitutional Amendment
(c) 42nd Constitutional Amendment
(d) 38th Constitutional Amendment

Q12. The percentage of the total land area of the earth is

(a) 32.0
(b) 30.0
(c) 29.0
(d) 28.4

Q13. Which actor from Tamil Nadu received the Padma Bhushan award in 2025?

(a) Rajinikanth
(b) Vijay
(c) Ajith Kumar
(d) Suriya

Q14. The aim of ‘Directive Principles of State Policy’ is :

(a) To establish a socialist state
(b) To establish an independent society
(c) To establish a welfare state
(d) To establish ‘Ram Rajya’ of Gandhiji

Q15. Which organisation released the “Energy Statistics India 2025” report?

(a) NITI Aayog
(b) Ministry of Power
(c) National Statistical Office (NSO)
(d) Central Electricity Authority (CEA)

GENERAL SCIENCE

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Q16. Who propounded the theory of gravity?

(a) Einstein
(b) Aryabhatta
(c) Newton
(d) Ramanujan

Q17. A distance of 1 km means

(a) 100 m
(b) 1000 cm
(c) 1000 m
(d) 100 cm

Q18. In the food chain, grass eating species are known as

(a) Primary Consumers
(b) Producers
(c) Autotrophs
(d) They are not part of the food chain

Q19. Tuberculosis is caused by:

(a) Micrococci
(b) Streptococcus Bacilli
(c) Mycobacterium Tuberculosis
(d) Meningococci

Q20. Identify the incorrect statement.

(a) Heavier and lighter components of a mixture can be separated by winnowing.
(b) Blowing wind is used to separate the components of mixture in the process of winnowing.
(c) Sieving is used when components of a mixture have same size.
(d) Bran remain on the sieve and the pure flour passes through holes of sieve while removing bran from flour.

Q21. Which among the following statements are correct with respect to Threshing?

1. used to separate heavier and lighter components of a mixture by wind or by blowing air is called threshing.
2. The process of threshing is done by beating only the stalks, which are beaten to free the grain seeds.

(a) Only 1
(b) Only 2
(c) Both 1 and 2
(d) None of the above

Q22. Which of the following is example/s for chemical change of substance?

(a) Rusting of iron
(b) Ripening of fruits
(c) Both 1 and 2
(d) None of the above

Q23. Which of the following are the sources of fats?

(a) Oil, ghee, butter
(b) Apple
(c) Rice, wheat, potatoes
(d) Iron, calcium

Q24. Identify the substance which can dissolve in water:

(a) Glucose
(b) Urea
(c) Acetone
(d) All of the above

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Q25. The human heart has _____(number) chambers.

(a) One
(b) Two
(c) Three
(d) Four

Q26. The long term effect of cutting down of trees in large areas of rain forests is

(a) increased rainfall in those areas
(b) decreased rainfall in those areas
(c) increase in wind speeds in those areas
(d) increased rate of soil erosion in those areas

Q27. Electric bell works on the principle of -

(a) Magnetic effect of current
(b) Chemical effect of current
(c) Heating effect of current
(d) All of the above

Q28. Which of the following is classified as an autotrophic organism?

(a) Fungi
(b) Human
(c) Plant
(d) Animal

Q29. _____ alloy consists of nickel, copper and zinc.

(a) Solder
(b) German silver
(c) Bell Metal
(d) Rose Metal

Q30. Which of the following metals does not form amalgams?

(a) Zinc
(b) Copper
(c) Magnesium
(d) Iron

MATHEMATICS

Q31. A man completes a work in 200 days. Find the number of days required by 40 men to complete the same work.

(a) 40 days
(b) 200 days
(c) 5 days
(d) 50 days

Q32. What is the largest 4 digit number?

(a) 4444
(b) 1111
(c) 9999
(d) 1000

Q33. 21 × 3 ÷ 9 = ?

(a) 3
(b) 1/3
(c) 9
(d) 7

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Q34. Simplify: 700 cm : 12 m.

(a) 7 : 120
(b) 7 : 12
(c) 700 : 12
(d) 70 : 120

Q35. 35% of 650 liters is:

(a) 275.5 L
(b) 257.5 L
(c) 237.5 L
(d) 227.5 L

Q36. Find the simple interest on a principal of 200 Rs at the rate of 39% per annum for 23years.

(a) 1974
(b) 1749
(c) 1794
(d) 1874

Q37. If perimeter of a regular hexagon is 474m then find the length of its side.

(a) 86m
(b) 76m
(c) 79m
(d) 89m

Q38. 39% of 200 = ?

(a) 78
(b) 68
(c) 82
(d) 72

Q39. The average of 150 and 120 is:

(a) 130
(b) 135
(c) 140
(d) 125

Q40. Find the square of 16:

(a) 144
(b) 196
(c) 289
(d) 256

Q41. Which number when it is added by twice of itself gives 144?

(a) 12
(b) 72
(c) 48
(d) 24

Q42. If 12% of a number x is equivalent to 11% of another number y, what is the ratio of x to y?

(a) 1 : 11
(b) 12 : 11
(c) 12 : 1
(d) 11 : 12

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Q43. 50 millimeters = _ Centimeter

(a) 50
(b) 0.5
(c) 5
(d) 500

Q44. HCF of 65 and 39 is:

(a) 13
(b) 65
(c) 39
(d) 1

Q45. What is the number of vertices in an isosceles triangle?

(a) 2
(b) 3
(c) 1
(d) 0

LOGICAL REASONING

Q46. Find the WRONG TERM in the given series.

37, 41, 57, 93, 155, 257

(a) 57
(b) 155
(c) 93
(d) 41

Q47. Mayank ranks 12^(th) from the top and 20^(th) from the bottom. How many maximum students are there in the class?

(a) 38
(b) 31
(c) 40
(d) 32

Q48. If 19 June 2001 is Tuesday, then what will be the day of the week on 14 August 2007?

(a) Sunday
(b) Monday
(c) Tuesday
(d) Friday

Q49. A person is standing facing south. He turns 135° in an anti-clockwise direction and then 180° in a clockwise direction. In which direction is he standing now?

(a) North - East
(b) South - West
(c) South - East
(d) West

Q50. Introducing Kaumudi to a guest, a boy Mihir said, "She is the only daughter of my mother's brother-in-law". How is Mihir related to Kaumudi?

(a) father
(b) uncle
(c) cousin
(d) brother

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ANSWER KEY

1	a	2	d	3	b	4	c	5	a	6	c	7	a	8	c	9	b	10	b
11	b	12	c	13	c	14	c	15	c	16	c	17	c	18	a	19	c	20	c
21	d	22	c	23	a	24	d	25	d	26	b	27	a	28	c	29	b	30	d
31	c	32	c	33	d	34	b	35	d	36	c	37	c	38	a	39	b	40	d
41	c	42	d	43	c	44	a	45	b	46	b	47	b	48	c	49	b	50	c

SOLUTIONS

Q1. Answer: (a) Shah Jahan

The correct answer is Shah Jahan.

• The construction of the Taj Mahal is credited to the Mughal emperor Shah Jahan who erected this mausoleum in memory of his beloved wife, Mumtaj Mahal.

• The construction of the Taj Mahal was started in A.D. 1632 and completed at the end of 1648 A.D. in Agra.

• Amanat Khan Shirazi was the calligrapher of the Taj Mahal, his name occurs at the end of an inscription on one of the gates of the Taj.

• Poet Ghyasuddin had designed the verses on the tombstone, while Ismail Khan Afridi of Turkey was the dome maker.

• The designer of Taj Mahal was Ustad Ahmad Lahauri.

• The central dome is 187 feet high at the center. White marbles and red sandstones were used to build the monument.

Additional Information

Mughal King	Timeline	Important Points
Shah Jahan	1627-1658	Mughal campaigns continued in the Deccan under Shah Jahan after Akbar and Jahangir. Shah Jahan was imprisoned by his son Aurangazeb for the rest of his life in Agra.
Akbar	1556 - 1605	During 1st five years of Akbars reign, Bairam khan acted as his regent & consolidated Mughal empire. He was the greatest king of the Mughal dynasty. Akbar married Rajput princess Jodha, daughter of Raja Bhairomal of Amber. He fought the Battle of Panipat (1556) against Hemu and Battle of Haldighati against Maharana Pratap (1576).
Bahadur Shah	1837 - 1857	He was the last Mughal emperor of India. He died in 1862 in Rangoon (Myanmar).
Aurangzeb	1658 - 1707	Assumed the title Alamgir (or World Conqueror). Reimposed Jiziya & pilgrimage tax (in 1679). Was against Sikhs & executed 9th Sikh Guru Teg Bahadur, which resulted in the transformation of Sikhs into the warring community.

Q2. Answer: (d) Tamil Nadu

The correct answer is Tamil Nadu.

Key Points

• Correct option: The Badaga tribe is primarily associated with the Nilgiri Hills and therefore belongs to the state of Tamil Nadu. This is the accurate choice. (Correct)

• Karnataka: While some Badaga communities are found in areas near the Nilgiri border, Karnataka is not their primary state of residence; presence in Karnataka is secondary. (Incorrect as a primary answer)

• Kerala does not host the Badaga as a significant or primary population; the Nilgiri cultural zone is distinct from Kerala's

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highlands. (Incorrect)

Additional Information

• Location & region: The Badaga are concentrated in the Nilgiri Hills — a mountainous area of the Western Ghats in Tamil Nadu. The Nilgiri district straddles the border region with Karnataka, which explains limited cross-border presence.

• Language & influences: The Badaga speech is a distinct idiom with clear influences from both Kannada and Tamil, reflecting the community's position at a linguistic crossroads.

• Occupation & lifestyle: Traditionally, the Badaga community engages in agricultural practices adapted to hill farming; their economy and social life are closely tied to cultivation and local markets.

• Community significance: In the Nilgiri Hills the Badaga form one of the larger indigenous communities, contributing to the region's cultural landscape through customs, dress, and local institutions.

Q3. Answer: (b) Bharatanatyam

The Correct answer is Bharatanatyam.

Key Points

• Bharatanatyam is one of the oldest classical dance forms of India and is believed to have originated in Tamil Nadu.

• The Tanjore Quartet, comprising four brothers—Chinnayya, Ponnayya, Sivanandam, and Vadivelu—were instrumental in codifying and organizing Bharatanatyam in the 19th century.

• They were musicians, composers, and dance teachers who worked under the patronage of the Maratha rulers of Thanjavur (Tanjore).

• The Tanjore Quartet systematized the structure of Bharatanatyam performances into the traditional Margam, which includes sections like Alarippu, Jathiswaram, Varnam, Padam, and Thillana.

• Bharatanatyam is deeply rooted in religious and spiritual themes and is often dedicated to Hindu deities, especially Lord Shiva (Nataraja).

• This dance form is known for its intricate footwork, graceful expressions, and strong emphasis on abhinaya (expressive acting).

• The name Bharatanatyam is derived from the combination of 'Bhava' (expression), 'Raga' (melody), 'Tala' (rhythm), and 'Natyam' (dramatic art).

Additional Information

• Kathakali

• Kathakali is a classical dance form from Kerala, known for its elaborate costumes, makeup, and storytelling.

• It is performed as a combination of dance, drama, and music, often depicting stories from the Ramayana and Mahabharata.

• Kathakali performers use intricate hand gestures and facial expressions to convey emotions.

• Kathak

• Kathak is a classical dance form originating from North India, primarily associated with storytelling through dance.

• It incorporates intricate footwork, spins, and rhythmic patterns, often accompanied by Hindustani classical music.

• Kathak evolved in royal courts and later incorporated elements of Mughal culture.

• Mohiniattam

• Mohiniattam is a classical dance form from Kerala, characterized by graceful, feminine movements.

• The word 'Mohini' refers to the enchanting female form, often associated with the mythology of Lord Vishnu as Mohini.

• Mohiniattam is performed in solo and is set to Carnatic music.

Q4. Answer: (c) Collecting non-timber forest produce

The correct answer is Collecting non-timber forest produce.

Key Points

• Non-timber forest produce (NTFP) refers to goods and services that are obtained from forests other than timber.

• These include fruits, nuts, honey, medicinal plants, and other resources that can be harvested sustainably without damaging the forest ecosystem.

• Collecting NTFP can provide livelihoods for local communities and reduce their dependence on unsustainable activities such as logging and poaching.

• This can help to conserve forests and wildlife in the long term.

• Unlike other activities such as building roads and dams, collecting NTFP does not require major infrastructure development that can have negative impacts on the environment and local communities.

Additional Information

• Using forests as a source of raw material for industries can lead to overexploitation of forest resources and contribute to climate change through emissions from processing and transportation of wood products.

• Converting forests to plantations, especially monoculture plantations, can have negative impacts on biodiversity, soil fertility,

water availability, and local livelihoods.

• Agroforestry and mixed-species plantations can be more sustainable alternatives.

• Building roads and dams in forested areas can fragment habitats, facilitate illegal activities such as hunting and logging, and displace local communities.

• Proper environmental impact assessments and community consultations are necessary to minimize these impacts.

Q5. Answer: (a) President of India

The correct answer is President of India.

Key Points

• The Chairman and members of the Union Public Service Commission (UPSC) are appointed by the President of India as per Article 316 of the Indian Constitution.

• They hold office for a term of six years or until the age of 65 years, whichever is earlier.

• The UPSC is responsible for conducting examinations for appointments to the services of the Union and advising on matters related to recruitment, promotion, and disciplinary actions.

• The composition and functions of the UPSC are defined in Part XIV of the Indian Constitution under Articles 315 to 323.

• The President also has the authority to remove a member or the Chairman of the UPSC under certain conditions laid out in the Constitution.

Additional Information

• Union Public Service Commission (UPSC):

• UPSC is a constitutional body under Article 315 of the Indian Constitution.

• It conducts the prestigious Civil Services Examination (CSE) for recruitment to IAS, IPS, IFS, and other Group A and Group B services.

• The Commission consists of a Chairman and other members, the number of whom is determined by the President.

• Role of the President in Appointments:

• The President of India is responsible for appointing members of several key constitutional bodies, including the UPSC, Election Commission, and the Comptroller and Auditor General (CAG).

• This ensures the independence and impartiality of these institutions.

• Removal of UPSC Members:

• UPSC members can only be removed by the President on the grounds of misbehavior after an inquiry conducted by the Supreme Court.

• Other grounds for removal include insolvency, engagement in paid employment outside the office, or infirmity of mind or body.

• Historical Context:

• The UPSC was established on October 1, 1926, as the Public Service Commission under the Government of India Act, 1919.

• It was later reconstituted as the Federal Public Service Commission under the Government of India Act, 1935, and eventually became the UPSC after independence.

Q6. Answer: (c) reintroduction of the 'Cheeta' from Africa

The correct answer is reintroduction of the 'Cheeta' from Africa.

Key Points

• Kuno National Park is a national park and wildlife sanctuary in Madhya Pradesh, India.

• It was chosen as the site for the reintroduction of the cheetah to India because of its suitable habitat and prey base.

• The cheetah was declared extinct in India in 1952 due to overhunting and habitat loss.

• In September 2022, eight cheetahs from Namibia were released into Kuno National Park.

• This was a historic moment for India, as it marked the return of the cheetah to the country after more than 70 years.

Additional Information

• The reintroduction of the cheetah to India is a significant conservation milestone.

• It is a testament to the hard work and dedication of conservationists and scientists who have worked tirelessly to make this dream a reality.

• The cheetah is a top predator, and its presence in India will help to restore the ecological balance of the country's ecosystems.

Q7. Answer: (a) Annie Besant

Get a detailed explanation of ‘Who was the first woman President of the Indian National Congress?’ as asked in WBCS 2015. Know the correct answer with key facts & analysis.

The correct answer is Annie Besant.

Key Points

• Annie Besant was selected as the first woman president of the Indian National Congress in 1917.

• She is popularly known as Annie Wood.

• She was a reputed theosophist, women's rights activist, writer, and orator.

• In 1916, along with Lokmanya Tilak, she launched the Home Rule League.

• She was declared a World Teacher after her lecture on Theosophy in 1926.

• She had founded the Central Hindu College in 1898 in Varanasi and this college was later gifted to Pandit Madan Mohan Malviya for the latter to get it converted into Banaras Hindu University.

Important Points

Vijaya laxmi Pandit	**• She is a former ambassador of India to the United States. - She was the head of the Indian delegation to the United Nations in 1946-48, and again in 1952-53. - She was the president of the All-India Women's Conference between 1941 and 1943.**
Sarojini Naidu	• Sarojini Naidu was an Indian political activist, a member of the Indian National Congress, and a poet. - She was the first female Indian governor. - She was titled 'Nightingale of India' by Mahatma Gandhi. - Her first guru was Gopal Krishna Gokhale who encouraged her to fight for the country and ignited the fire of patriotism in her. - The British government also awarded her the Kaisar-i-Hind Medal for her work during the plague epidemic in India. - Some books written by the Sarojini Naidu are The Golden Threshold, Mohammad Jinnah: An Ambassador of Unity, The Indian Fantasy, The Royal Tombs of Golconda, The Snake Charmer, etc.
Aruna Asaf Ali	• She was an Indian educator, political activist, and publisher. - During Quit India Movement in 1942, the first time Indian Tricolor was hoisted when Aruna Asaf Ali hoisted the Indian Tricolour in the Gowalia Tank Maidan proudly.

Q8. Answer: (c) Article 14

The correct answer is Article 14.

Key Points

• Article 14

• Article 14 of the Indian Constitution is about 'Equality Before Law' and it states:

• "The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India."

• This article is a fundamental right under Part III of the Constitution of India, which talks about Rights to Equality.

• The principle of 'Equality before law' is of British origin, while 'Equal protection of the laws' is borrowed from the Constitution of the United States.

Additional Information

Article	Description
Article 19	This article guarantees six fundamental freedoms to all citizens of India: - Freedom of Speech and Expression, - Freedom to Assemble Peaceably and Without Arms, - Freedom to form Associations or Unions, - Freedom to Move Freely Throughout the Territory of India, - Freedom to Reside and Settle in Any Part of the Territory of India, and - Freedom to Practice Any Profession, or to Carry on Any Occupation, Trade or Business.
Article 23	• Article 23 prohibits human trafficking, forced labour, and any form of exploitation. It states: "Traffic in human beings and begar and other similar forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with law."

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Article 36	• This article is part of the Directive Principles of State Policy, which are guidelines or directions given to the state for creating a social order characterized by justice – social, economic, and political. Article 36 defines the 'State' to include the government and Parliament of India and the government and legislatures of each of the states and all local or other authorities within the territory of India or under the control of the Government of India.

Q9. Answer: (b) Bardoli Satyagraha

The correct answer is Bardoli Satyagraha.

Key Points

• Bardoli Satyagraha was led by Sardar Vallabhbhai Patel.

• The Bardoli Satyagraha was a major episode of civil disobedience and the Indian Independence Movement.

• It took place in Gujarat in February 1928.

• The Satyagraha was organised by Sardar Vallabhbhai Patel.

• He led the movement in Bardoli, a taluka in Gujarat against the enhancement of land revenue.

• The success of the movement made Patel one of the most influential leaders in the independence movement.

• The struggle was widely publicised and generated immense sympathy in many parts of India.

Additional Information

• The Salt March, also known as the Salt Satyagraha, Dandi March and the Dandi Satyagraha, was an act of nonviolent civil disobedience in colonial India led by Mahatma Gandhi.

• Chittagong armoury raid, also known as the Chittagong uprising, was an attempt on 18 April 1930 to raid the armoury of police and auxiliary forces from the Chittagong armoury in the Bengal Presidency of British India by armed Indian independence fighters led by Surya Sen.

• The Kakori Train Robbery was a train robbery that took place at Kakori, a village near Lucknow, on 9 August 1925, during the Indian Independence Movement against the British Raj.

• It was organised by Hindustan Republican Association.

Q10. Answer: (b) To ensure aircraft remain serviceable, safe, and mission-ready

The correct answer is To ensure aircraft remain serviceable, safe, and mission-ready.

Key Points

• Primary function: Air Force maintenance ensures the airworthiness of aircraft through routine inspections, repairs, and replacements so that platforms remain mission-ready.

• Safety assurance: Maintenance activities identify and mitigate mechanical and structural failures to protect aircrew and assets — this makes the option correct.

• Maintenance levels: Includes line maintenance (pre-flight checks), intermediate/base maintenance (component swaps, system troubleshooting), and depot-level overhauls (major refurbishments).

• Planned maintenance: Uses scheduled checks based on flight hours, calendar time, and cycles to prevent unscheduled failures.

• Logistics & supply: Ensures availability of spare parts, consumables, and test equipment; a robust supply chain reduces aircraft downtime.

• Documentation & standards: Maintains technical logs, maintenance records and follows service regulations and published maintenance manuals and quality standards.

• Training & personnel: Skilled technicians, engineers and inspectors receive continual training in avionics, propulsion, and structural repair techniques.

• Other options explained:

• To train pilots for combat operations — this is primarily the role of flight training units and operational conversion units, not maintenance. (Incorrect).

• To manage air traffic control and communication systems — handled by ATC units and communications/CSOC organizations; maintenance supports avionics but does not perform ATC. (Incorrect).

• To plan and conduct aerial surveillance missions — operational squadrons plan and fly these missions; maintenance enables platforms but does not plan/execute missions. (Incorrect).

Additional Information

• Types of work: Preventive (scheduled checks), corrective (fault rectification), and modification (upgrades and service bulletins).

• Examples: In many air forces, a routine A-check occurs after a set number of flying hours, while a C- or D-check involves deeper inspection and partial disassembly.

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• Regulatory context: Military aviation follows internal service regulations; when operating civil-registered aircraft, civilian standards (e.g., DGCA or equivalent) and airworthiness directives may apply.

• Performance metrics: Common metrics include mean time between failures (MTBF), mission-capable rate, and turnaround time.

• Country context: For example, the Indian Air Force maintains squadrons and depots across bases in India, while other countries follow similar tiered maintenance structures tailored to their fleets.

Important Points

• Reliability & availability: Effective maintenance maximizes aircraft availability for operations and reduces lifecycle costs.

• Safety culture: A strict safety and inspection culture, supported by clear records and reporting, prevents accidents and maintains operational trust.

• Interdependence: Maintenance, logistics, and operations are interdependent — strong maintenance capability is a force multiplier for any air force.

Q11. Answer: (b) 36th Constitutional Amendment

The correct answer is option 2, i.e. 36^(th) Constitutional Amendment.

The 36^(th) Constitutional Amendment Act made Sikkim a full-fledged state of the Union of India.

Amendment act	Provisions
34^(th) Constitutional Amendment Act, 1974	This act included land tenure and land reforms acts. It was added in various states of Ninth schedule.
36^(th) Constitutional Amendment Act, 1975	This act made Sikkim a full-fledged state. It included Article 371-F in the constitution. Some of the provisions are: - Legislative assembly of not less than 30 members. - One seat in Loksabha and one parliamentary constituency. - Governor is having the responsibility of maintaining law and order, socio-economic development in the state. - President can extend any law to the Sikkim as applied in other states.
42^(nd) Constitutional Amendment Act, 1976	It was the most comprehensive amendment and also known as Mini constitution. - Added socialist, secular and integrity to the Preamble and fundamental duties(Part IV A) - It also made the President bound by the cabinet and take constitutional amendment beyond judicial scrutiny. - It also added some Directive principles and directive principles cannot be declared as invalid on the violation of fundamental rights.
38^(th) Constitutional Amendment Act, 1975	• This act made the declaration of an emergency as non-justiciable matter. It also gave the power to the President to declare a national emergency on different grounds simultaneously. - It also included ordinances by President, Governors and administration of union territories as non-justiciable.

Q12. Answer: (c) 29.0

Earth is the third planet from the Sun and the fifth largest planet in the Solar System with the highest density. Earth is the only planet where life is known to exist.

A Few Facts About Our Planet Earth:

• Total surface area of earth: 510,072,000 sq km

• Total water surface area: 70.8% (361,132,000 sq km)

• Total land surface area: 29.2% (148,940,000 sq km)

• About 29.2% of Earth's surface is land consisting of continents and islands.

• The remaining 70.8% is covered with water, both freshwater, and saltwater bodies.

The area of land is about 29% of the total surface of the Earth.

• The earth’s surface is, 20% covered by snow land, 20% mountains, 20% dry land, 30% good land that can be farmed, 10% land that doesn't have topsoil.

• The highest point on land is Mount Everest and the lowest land point is the Dead Sea Depression with an elevation amounting to approximately 413 meters below sea level.

• From space, Earth looks like a blue marble with white swirls and areas of brown, yellow, green, and white.

• The blue is water, which covers about 71 percent of the Earth's surface.

• The white swirls are clouds.

• The areas of brown, yellow, and green are land. And the areas of white are ice and snow.

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Hence, it can be seen that the percentage of the total land area of the earth is 29 percent.

Q13. Answer: (c) Ajith Kumar

The correct answer is Ajith Kumar.

Key Points

• Recipient & Award: Ajith Kumar was conferred the Padma Bhushan in 2025 for his contributions to Indian cinema.

• Ceremony & Confirmation: The conferment was part of the official Padma Awards 2025 list published by the Government of India; Ajith received the honour at the investiture ceremony at Rashtrapati Bhavan. Why other options are incorrect:

• Rajinikanth: A legendary actor from Tamil Nadu, but he was not the Padma Bhushan recipient listed for 2025 in this question's context. (Incorrect)

• Vijay: Another leading Tamil actor; not listed as a Padma Bhushan awardee in 2025. (Incorrect)

• Suriya: Prominent Tamil actor and philanthropist; not the Padma Bhushan recipient referenced here. (Incorrect)

(These clarifications are based on the official 2025 award list.)

• Context: The Padma Bhushan is India's third-highest civilian honour, awarded for distinguished service of a high order in any field; Ajith's award recognises his long-standing contribution to cinema.

Q14. Answer: (c) To establish a welfare state

The correct answer is To establish a welfare state.

• The aim of Directive Principles of State Policy is to establish a welfare state.

Additional Information

• Directive Principles of State Policy (DPSP) is mentioned in Part IV of the Indian constitution from articles 36 to 51.

• Features of DPSP

• It denotes the ideals that the State should keep in mind while formulating policies and enacting laws.

• It resembles the 'Instrument of Instructions' enumerated in the Government of India Act of 1935.

• It constitutes a very comprehensive economic, social and political programme for a modern democratic State.

• They promote social and economic democracy. They embody the concept of a 'welfare state'

• DPSP are non-justiciable.

• Classification of Directive Principles of State Policy (DPSP)

• The Constitution of India does not formally classify the Directive Principles of State Policy but for better understanding and on the basis of content and direction- they can be classified into three categories: Socialistic Principles, Gandhian Principles, and Liberal-Intellectual Principles.

• Socialistic Principles

• These principles contemplate the ideology of socialism and lay down the framework of a democratic socialist state. The concept envisages providing social and economic justice, so that state should achieve the optimum norms of the welfare state. They direct the state through- Article 38, Article 39, Article 39 A, Article 41, Article 42, Article 43, Article 43 A and Article 47.

• Gandhian Principles

• These principles reflect the programme of reconstruction enunciated by Gandhi during the national movement. In order to fulfil the dreams of Gandhi, some of his ideas were included in DPSP and they direct the state through- Article 40, Article 43, Article 43 B, Article 46, Article 47 and Article 48.

• Liberal-Intellectual Principles

• These principles inclined towards the ideology of liberalism and they direct the state through- Article 44, Article 45, Article 48, Article 48 A, Article 49, Article 50 and Article 51.

Important Points

• Article 40 - To organise village panchayats to function as units of self-government.

• Article 44 - To secure for all citizens a uniform civil code throughout the country.

• Article 45 - To provide early childhood care and education for all children until they complete the age of six years.

• Article 47 - To prohibit the consumption of intoxicating drinks and drugs which are injurious to health.

• Article 48 - To prohibit the slaughter of cows, calves and other milch and draught cattle and to improve their breeds.

• Article 48A - To protect and improve the environment and to safeguard forests and wildlife.

• Article 50 - To separate the judiciary from the executive in the public services of the State.

• Article 51 - Promote international peace and security and maintain just and honourable relations between nations, Foster respect for international law and treaty obligations and encourage settlement of international disputes by arbitration.

• Directive Principles of State Policy are borrowed from the Constitution of Ireland.

• Dr B R Ambedkar described these principles as 'Novel features' of the Constitution.

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Q15. Answer: (c) National Statistical Office (NSO)

The correct answer is National Statistical Office (NSO).

Key Points

• Publisher: The National Statistical Office (NSO), under the Ministry of Statistics and Programme Implementation (MoSPI), released the “Energy Statistics India 2025” report.

• Report focus: The publication compiles national-level data on reserves, installed capacity, production, consumption, and trade across energy commodities — including coal, petroleum, natural gas, and renewables. (Correct)

• Key findings highlighted: For FY 2023–24 the report notes a rise in Total Primary Energy Supply (TPES) by 7.8%, growth in renewable energy capacity, reduced transmission & distribution losses, and increased per-capita energy consumption. (Correct)

• New chapter: The 2025 edition introduces Energy Accounting with asset accounts and supply–use tables, aligning the statistics to international frameworks for integrated energy accounts.

Additional Information

• About NSO: The NSO is the central agency responsible for producing official statistics in India; it publishes annual compendia and thematic statistical reports used by policymakers, researchers, and institutions.

• Why not other options:

• NITI Aayog: A policy think-tank that issues strategy papers and roadmaps but does not publish the national statistical compendium titled Energy Statistics India.

• Ministry of Power: Produces sectoral reports and data on electricity but the integrated national energy statistics compendium is released by NSO/MoSPI.

• Central Electricity Authority (CEA): Authoritative for electricity-sector metrics; however, the broader energy statistics report is an NSO publication.

• Practical exam tip: Answer precisely: National Statistical Office (NSO); adding the linkage to MoSPI can earn full credit.

Important Points

• Year & data: The report pertains to Energy Statistics India 2025 and summarises indicators for FY 2023–24.

• Memorize: TPES +7.8%, enhanced renewable capacity, and the introduction of Energy Accounting are key facts to recall.

• Verification: For authoritative confirmation, refer to the MoSPI/NSO official release or the government press note.

Q16. Answer: (c) Newton

The correct answer is Newton.

Key Points

• Newton propounded the theory of gravity.

• Isaac Newton published a theory of gravity in his book, Principia Mathematica, in 1687.

• Newton’s law of universal gravitation states that every mass attracts every other mass in the universe, and the gravitational force between two bodies is proportional to the product of their masses and inversely proportional to the square of the distance between them.

• Newton also developed the three laws of motion which form the basic principles of modern physics.

Additional Information

• Albert Einstein is best known for his equation $E = mc^2$, which states that energy and mass (matter) are the same things, just in different forms.

• He is also known for his discovery of the photoelectric effect, for which he won the Nobel Prize for Physics in 1921.

• Aryabhata discovered an approximation of pi.

• He also correctly believed that the planets and the Moon shine by reflected sunlight and that the motion of the stars is due to Earth's rotation.

• Ramanujan is known for his contributions to number theory and infinite series.

• He worked out the Riemann series, the elliptic integrals, the hypergeometric series, the functional equations of the zeta function, and his own theory of divergent series.

Q17. Answer: (c) 1000 m

The correct answer is 1000 m.

Key Points

• 1 km is equal to 1000 m.

• The length of the space between two points is called Distance.

Additional Information

• Important units and their conversion.

Unit Length	Conversion Factor
1 cm	10 mm
1 foot	12 inches, 30.48 cm
1 inch	2.54 cm, 0.0833 ft
1 Kilometer	1000m, 3280.84 ft
1 meter	100 cm, 39.3701 in, 3.28084 ft
1 mile	1.60934 km, 5280 ft
1 Yard	36 inches, 0.91444 m
1 acre	0.4047 hectare

Q18. Answer: (a) Primary Consumers

The correct answer is Primary Consumers.

Key Points

• Food Chains

• The food chain is the sequence of transfer of matter and energy in the form of food from organism to organism.

• Food chains intertwine locally into a food web because most organisms consume more than one type of animal or plant.

• Links of the Chain-

• Producers: Plants are producers because they produce energy for the ecosystem.

• Consumers: Animals are consumers because they don't produce energy, they just use it up.

• Decomposers: They eat decaying matters like dead plants and animals. They help put nutrients back into the soil for plants to eat.

• Primary Consumers

• They are also called herbivores animals who eat producers or plants.

• Sometimes, these primary consumers become prey for other animals that sit higher on the food chain.

• It makes up the second trophic level.

• Examples: Rabbits, Bears, Giraffes, Horses, etc.

Additional Information

• Producers

• Producers are those who make their own food, which creates energy for them to grow, reproduce and survive.

• They are the only living things on Earth that can make their own source of energy in the form of food.

• Producers are organisms capable of creating simple carbohydrates such as glucose, from gaseous carbon dioxide.

• Autotrophs

• Autotrophs are organisms that can produce their own food, using materials from inorganic sources.

• Autotrophs are extremely important because, without them, no other forms of life can exist.

• There are two major types of Autotrophes-

• Phototrophs - Phototrophs use the energy from the sun to convert carbon dioxide into carbohydrates.

• Chemotrophs- Chemotrophs are organisms that obtain energy by the oxidation of reduced compounds.

Q19. Answer: (c) Mycobacterium Tuberculosis

Concept:

• Tuberculosis is caused by Mycobacterium Tuberculosis.

• It is a gram-positive aerobic bacteria.

• It belongs to the family Mycobacteriaceae.

• Tuberculosis is an upper respiratory tract infection.

Explanation:

Micrococci	**pneumonia, meningitis, septic arthritis, bacteremia, peritonitis, and endocarditis.**
Streptococcus Bacilli	endocarditis, meningitis, bacterial pneumonia, and endocarditis

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Meningococci	Neisseria meningitidis

Additional Information

• M. tuberculosis has a coating on the surface.

• It is diagnosed with the help of a tuberculin skin test, acid-fast stain, PCR, and culture.

• Symptoms of TB:

• Coughing for three or more weeks

• Haemoptysis

• Chest pain

• Pain with breathing or coughing

• Unintentional weight loss and loss of appetite

• Fatigue

• Fever

• Night sweats

• Management:

• the first-line agents: isoniazid (INH), rifampin (RIF), ethambutol (EMB), pyrazinamide (PZA)

• the second-line agents: levofloxacin (group A), cycloserine (group B), ethambutol, amikacin, or streptomycin (group C).

Q20. Answer: (c) Sieving is used when components of a mixture have same size.

Concept:

Separation of substances

• Substances are separated from the mixture in process of removing impurities or obtaining useful substances out of the mixture.

• Separation of butter from milk, separating salt from seawater, separating grains from grain from stalks, etc. are some usual examples of separations.

• Different methods of separations are threshing, winnowing, sieving, etc.

Winnowing

• Winnowing is used to separate heavier and lighter components of a mixture by wind or by blowing air.

• This is a commonly used method to separate lighter husk particles from heavier seeds of grain.

• The lighter husk gets carried away with wind and seeds get collected down nearby.

Sieving

• It is the process of separating particles of different sizes using a sieve.

• The mixture is made to pass through a sieve, the small size particles pass through the sieve.

• The large particles remain on the sieve.

• The method is used to separate impurities and bran from the flour.

• The bran having larger size couldn't pass through the sieve though flour with smaller particles can pass.

• In this way, the bran is separated from the flour.

• Sieving can also be seen at construction sites where Pebbles and stones are removed from sand by sieving.

• Sieving cannot separate a mixture of the same sizes. If the size is different, then only smaller particles can pass.

• For example, if we need to separate sand from flour, both have almost equal size and both will pass through the sieve and there will be no meaning of separation.

Conclusion:

• Heavier and lighter components of a mixture can be separated by winnowing.

• Blowing wind is used to separate the components of the mixture in the process of winnowing.

• Bran remains on the sieve and the pure flour passes through holes of the sieve while removing bran from the flour.

• If size of particles is the same, sieving cannot be used.

The only incorrect statement and the correct option is 'Sieving is used when components of a mixture have same size.'

Additional Information

Threshing

• This method of separation is used to separate grains from stalks.

• The stalk is beaten to free it from grains.

• This is followed as this kind of separation cannot be done by handpicking due to similar size of both particles.

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Q21. Answer: (d) None of the above

The correct answer is None of the above.

Important Points

• The process that is used to separate the grain from stalks etc. is called threshing. Hence statement 1 is incorrect.

• In this process, the stalks are beaten to free the grain seeds and are also done with the help of bullocks and machines. Hence statement 2 is incorrect.

• Machines are used to thresh large quantities of grain.

Additional Information

• Winnowing is used to separate heavier and lighter components of a mixture by wind or by blowing air.

Q22. Answer: (c) Both 1 and 2

Chemical Change-Chemical changes occur when a substance combines with another to form a new substance.

Key Points

• In a chemical change, the chemical composition of the substance also changed.

• During the chemical change of any substance, bonds are broken and new ones are formed.

• Change in temperature, color, the formation of bubbles is the basic indicator of chemical change. Usually, chemical change can not reversed back.

• Iron Rusting- In the presence of moisture and oxygen the exposure of iron contributes to rust formation. Rust is an iron oxide. In iron rusting process iron oxide produced after chemical reaction with iron in the presence of moisture and oxygen. Iron rusting is a chemical change process because new substance iron oxide(rust) produced after a chemical reaction.

• Ripening of fruits- Ripening of fruits is a chemical change. Several changes take place during the ripening phase like the color and texture of the fruit changes. The chemical composition of the fruit also change the fruit's sugar level increases, and the fruit becomes sweeter.

Both 1 and 2 are an example of chemical change.

Q23. Answer: (a) Oil, ghee, butter

A balanced diet has an equal or proper quantity of nutrients, water, and roughage necessary to maintain good health.

Key Points

• There are six main components of a balanced diet – carbohydrates, protein, fats, protein, vitamins, minerals, and water.

• Fats are substances that our body stores for future use.

• The major sources of fats are oil, ghee, butter, milk, cheese, eggs, fish, and meat.

• Proteins are the building blocks of our bodies. Protein is essential for the growth and repair of muscle.

• Carbohydrates are the main source of energy for our bodies. starch, sugar, and cellulose are the three major categories of carbohydrates.

• Vitamins and minerals are protective nutrients in a balanced diet.

Hence, we can conclude that Oil, ghee, and butter are the sources of fats.

Q24. Answer: (d) All of the above

The correct answer is Option 4.

Key Points

• Glucose: Glucose is a carbohydrate and a type of sugar. It is highly soluble in water due to its ability to form hydrogen bonds with water molecules. Glucose dissolves readily in water to form a clear, colourless solution.

• Urea: Urea is a compound produced in the liver from ammonia and excreted by the kidneys in urine. It is highly solubilized in water. Urea molecules can form hydrogen bonds with water molecules, allowing them to dissolve easily in water.

• Acetone: Acetone is a polar organic solvent that is miscible with water. Although acetone molecules do not form hydrogen bonds with water molecules like glucose and urea, it is still able to dissolve in water due to their polarity. Acetone has a polar carbonyl group that interacts favourably with water molecules, enabling it to mix homogeneously with water.

So, all of the substances mentioned (glucose, urea, and acetone) can dissolve in water, either due to their ability to form hydrogen bonds (glucose and urea) or their polarity (acetone). Therefore, option 4 is the correct answer.

Q25. Answer: (d) Four

The correct answer is Four.

Important Points

• The human heart has four chambers which include the right atrium, right ventricle, left atrium, and left ventricle.

• The heart is a muscular organ that pumps blood through the blood vessels of the circulatory system. In humans, heart is located

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between the lungs in the middle compartment of the chest and its size is approximately the size of a closed fist.

• Atrioventricular valves are the valves between the atria and ventricles of the heart.

• Nowadays, the most common cause of death is Cardio vascular diseases which is caused by the following factors being overweight, smoking, high blood pressure, high cholesterol, etc.

Additional Information

• Humans have two lungs as their primary organs of the respiratory system.

• The function of Lungs is to extract oxygen from the atmosphere and circulate it into the bloodstream and to release carbon dioxide to the atmosphere from the blood stream.

Q26. Answer: (b) decreased rainfall in those areas

Forests play many important ecological roles. From helping to mitigate climate change to providing homes for many species of plants and animals, providing food, medicine and livelihoods for people around the globe, however, these essential ecological powerhouses are currently at risk.

Rain Forests:

• Rainforests are the world's most oldest living ecosystems. An ecosystem is not just the plants, but also the birds, mammals, reptiles, fish, amphibians, bacteria and even the non-living elements like soil, water and air.

• Rainforests produce, store, and filter water, protecting against soil erosion, floods and drought.

• Deforestation is endangering rainforests worldwide, driven by logging, mining, agriculture, and ranching.

• Before humans started destroying the rainforests, they covered 15% of the Earth's land area, today, they cover only 6%.

• Rainforests influence the carbon cycle (green plants take up carbon dioxide for photosynthesis, a process during which oxygen is released into the air) and also have a profound effect on rainfall.

• When trees are cut down in a forest, it eliminates or decreases the amount of transpiration, which means that the amount of rainfall in that area will decrease.

Hence, it can be concluded that the long term effect of cutting down of trees in large areas of rain forests is decreased rainfall in those areas.

Q27. Answer: (a) Magnetic effect of current

The Correct Answer is Magnetic effect of current.

Key Points

• Electric bell works on the principle of electromagnetism.

• The circuit of an electric bell consists of a coil of wire wound on an iron piece.

• The coil act like an electromagnet.

• An iron strip with a hammer at one end is kept close to the electromagnet.

• There is a contact screw near the iron strip.

• When the iron strip is in contact with the screw, the current flows through the coil which becomes an electromagnet.

• The hammer at the end of the strip strikes the gong of the bell to produce a sound.

• When the electromagnet pulls the iron strip, it also breaks the circuit, and the current through the coil stops flowing.

• The coil is no longer an electromagnet once the current through it stops flowing.

• The circuit completes when the iron strip comes back to its original position and touches the contact screw again.

Q28. Answer: (c) Plant

The correct answer is Plant.

Key Points

• Plants are autotrophs, which means they produce their own food.

• They use the process of photosynthesis to transform water, sunlight, and carbon dioxide into oxygen, and simple sugars that the plant uses as fuel.

• Plants use chlorophyll, a green pigment, to trap light energy from the sun.

• This energy is used to convert water and carbon dioxide into glucose and oxygen

• Most plants are autotrophs, including mosses and fir trees.

Additional Information

• Autotrophs are organisms that can produce their own food, using materials from inorganic sources by using basic energy sources such as sunlight.

• Plants are the main example of autotrophs, using photosynthesis.

• Some autotrophs, such as green plants and algae, are phototrophs, they convert electromagnetic energy from sunlight into chemical energy in the form of glucose. So, Spinach, Tomato, Banana are also examples of autotrophs.

• Heterotrophic: Animals and most other organisms take in ready-made food prepared by the plants. They are called heterotrophs (heteros = other).

• Examples are Protozoa, viruses, fungi, dogs, birds, fish, humans, etc.

Q29. Answer: (b) German silver

The correct answer is German Silver.

| Alloys | Composition | Uses | | --- | --- | --- | | German Silver | Cu+Zn+Ni | In making utensils. | | Solder | Pb+Sn | For soldering. | | Bell Metal | Cu+Sn | For casting bells and statues. | | Rose Metal | Bi+Pb+Sn | For making automatic fuse. |	**Alloys**	**Composition**	**Uses**	**German Silver**	**Cu+Zn+Ni**	**In making utensils.**	**Solder**	**Pb+Sn**	**For soldering.**	**Bell Metal**	**Cu+Sn**	**For casting bells and statues.**	**Rose Metal**	**Bi+Pb+Sn**	**For making automatic fuse.**
Alloys	Composition	Uses													
German Silver	Cu+Zn+Ni	In making utensils.													
Solder	Pb+Sn	For soldering.													

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Bell Metal	Cu+Sn	For casting bells and statues.													
Rose Metal	Bi+Pb+Sn	For making automatic fuse.													

Important Points

Alloys	Composition	Uses
Bronze	Cu + Sn	in making coins, bell, and utensils
Rolled Gold	Cu + Al	in making cheap ornaments
Gun Metal	Cu + Sn + Zn + Pb	in making guns, barrels gears, and bearing

Q30. Answer: (d) Iron

Concept:

• Alloys are substances which possess metallic character and are obtained by mixing of metal with another metal or another element.

• Either the mixture/alloy of mercury (Hg) with any other metal is called an amalgam whereas Tungsten, Platinum, Iron, and Tantalum are exceptions that do not form an amalgam.

• The alloys of mercury with any other metal are termed as amalgams and depending upon the proportion of mercury, they can be liquid, paste or solid in nature.

• One of the best examples of Amalgam is a mixture of mercury and silver which is used by the dentist for a dental filling.

Explanation:

From the above explanation, we can see that amalgams are an alloy of mercury and other metal like zinc copper magnesium except iron

i.e., Iron or Fe is the metal which can not be used to form amalgum alloy.

Q31. Answer: (c) 5 days

Given:

1 man can complete the work in 200 days

Number of men = 40

Formula used:

Work prop. to Number of men × Days (constant)

=> M1 × D1 = M2 × D2

Calculation:

=> 1 × 200 = 40 × D2

=> D2 = 200 ÷ 40

=> D2 = 5

Therefore 40 men will complete the work in 5 days.

Q32. Answer: (c) 9999

Given:

We need the largest 4-digit number.

Concept used:

Smallest 4-digit number = 1000

Largest 4-digit number = 1 less than 10000

Calculation:

=> 10000 − 1 = 9999

Therefore Largest 4-digit number = 9999.

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Q33. Answer: (d) 7

Given:
21 × 3 ÷ 9 = ?
Formula used:
Follow BODMAS rule (× and ÷ from left to right)
Calculation:
=> (21 × 3) ÷ 9
=> 63 ÷ 9
=> 7
Therefore 21 × 3 ÷ 9 = 7.

Q34. Answer: (b) 7 : 12

Given:
700 cm : 12 m
Formula used:
1 m = 100 cm
Calculation:
=> 12 m = 12 × 100 = 1200 cm
=> Ratio = 700 : 1200
=> Divide both by 100 → 7 : 12
Therefore Simplified ratio = 7 : 12.

Q35. Answer: (d) 227.5 L

Given:
Total = 650 liters
Percentage = 35%
Formula used:
Required value = (Percentage × Total) ÷ 100
Calculation:
=> (35 × 650) ÷ 100
=> 22750 ÷ 100 = 227.5
Therefore 35% of 650 liters = 227.5 liters.

Q36. Answer: (c) 1794

Given:
Principal (P) = Rs. 200
Rate (R) = 39% per annum
Time (T) = 23 years
Formula used:
Simple Interest (SI) = (P × R × T) ÷ 100
Calculation:
=> SI = (200 × 39 × 23) ÷ 100
=> SI = (179400) ÷ 100
=> SI = Rs. 1794
Therefore Simple Interest = Rs. 1794.

Q37. Answer: (c) 79m

Given:
Perimeter of regular hexagon = 474 m
Formula used:
Perimeter = 6 × Side
Calculation:
=> 474 = 6 × Side

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=> Side = 474 ÷ 6
=> Side = 79 m
Therefore Length of each side = 79 m.

Q38. Answer: (a) 78

Given:
Percentage = 39%, Number = 200
Formula used:
Percentage of a number = (Percentage × Number) ÷ 100
Calculation:
=> (39 × 200) ÷ 100
=> 7800 ÷ 100 = 78
Therefore 39% of 200 = 78.

Q39. Answer: (b) 135

Given:
Numbers = 150, 120
Formula used:
Average = (Sum of numbers) ÷ (Total numbers)
Calculation:
=> (150 + 120) ÷ 2
=> 270 ÷ 2 = 135
Therefore Average = 135.

Q40. Answer: (d) 256

Given:
Number = 16
Formula used:
Square = Number × Number
Calculation:
=> 16 × 16 = 256
Therefore Square of 16 = 256.

Q41. Answer: (c) 48

Given:
Number = x
Formula used:
x + 2x = 144
Calculation:
=> 3x = 144
=> x = 144 ÷ 3
=> x = 48
Therefore The required number = 48

Q42. Answer: (d) 11 : 12

Given:
12% of x = 11% of y
Formula used:
Percentage equation: (percentage × number)
Calculation:
=> (12/100) × x = (11/100) × y
=> 12x = 11y
=> x / y = 11 / 12
Therefore Ratio of x : y = 11 : 12.

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Q43. Answer: (c) 5

Given:

Length = 50 millimeters

Formula used:

1 centimeter = 10 millimeters

Calculation:

=> 50 millimeters = 50 ÷ 10 centimeters

=> 50 millimeters = 5 centimeters

Therefore 50 millimeters = 5 centimeters.

Q44. Answer: (a) 13

Given:

Numbers = 65 and 39

Formula used:

HCF = Highest common factor of given numbers

Calculation:

Factors of 65 = 1, 5, 13, 65

Factors of 39 = 1, 3, 13, 39

Common factors = 1, 13

=> HCF = 13

Therefore HCF of 65 and 39 = 13.

Q45. Answer: (b) 3

Given:

Figure: Isosceles triangle

Concept used:

Any triangle, whether scalene, isosceles, or equilateral, has the same number of vertices, sides, and angles.

Calculation:

Number of vertices in a triangle = 3

Therefore The number of vertices in an isosceles triangle = 3.

Q46. Answer: (b) 155

The Pattern followed here is:-

Hence, 155 is the wrong term.

Q47. Answer: (b) 31

From top Mayank rank is 12^(th) and he ranks 20^(th) from the bottom.

So total number of students will be 20 + 12 – 1 = 31

Hence, there are 31 student.

Q48. Answer: (c) Tuesday

An ordinary year has 1 odd day and a leap year has 2 odd days.

So, the day on the same date for an ordinary year will be 1 day ahead and the day on the same date for a leap year will be 2 days ahead for the next year.

If 19 June 2001 is Tuesday, then the day on these dates will be:

19 June 2002 → Wednesday

19 June 2003 → Thursday

19 June 2004 → Saturday

19 June 2005 → Sunday

19 June 2006 → Monday

19 June 2007 → Tuesday

Number of days between 19 June 2007 to 14 August 2007 = (11 + 31 + 14) = 56

56 when divided by 7, we get 0 as remainder.

Tuesday + 0 = Tuesday

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Therefore, it will be Tuesday on 14 August 2007.
Hence, ‘Tuesday’ is the correct answer.

Q49. Answer: (b) South - West

Given:
A person is standing facing south,
He turns 135° in an anti-clockwise direction,
Then 180° in a clockwise direction.
The below given diagram shows the direction of a man.
So, he is facing south-west now.
Hence, the correct answer is "Option (2)".

Q50. Answer: (c) cousin

By using the symbols in the table given below, we can draw the following family tree:
Clearly, Mihir is the cousin of Kaumudi.
Hence, ‘cousin’ is the correct answer.

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