

AFCAT 1 2025 Practice Paper 02

Q1. A private space-tech start-up ships three consignments of small-satellite bus components to three foreign customers. Consignment-P (cost Rs. 6,00,000) is billed at 22% gross profit; Consignment-Q (cost Rs. 4,50,000) is billed at a loss of 8%; and Consignment-R (cost Rs. 3,50,000) is billed at 15% gross profit. If a uniform export authorisation fee of 2.5% is then deducted from the aggregate billed amount, the start-up's overall net profit percent on total cost is closest to:

- (A) 7.5% (B) 7.8%
(C) 8.2% (D) 8.7%

Q2. Synonym of obviate: 'The redundancy in the flight-control software was designed to obviate any single-point-of-failure catastrophe.'

- (A) Aggravate (B) Preclude or prevent
(C) Delay (D) Investigate

Q3. The 'SSLV-D3' mission of ISRO, successfully conducted in August 2024, placed which primary satellite into a near-equatorial low-Earth orbit?

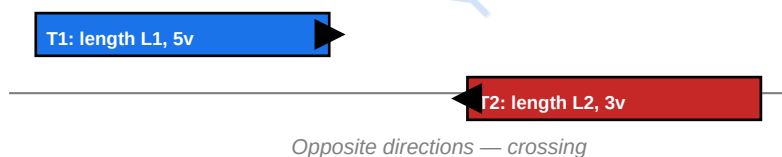
- (A) EOS-08 (B) INSAT-3DS
(C) XPoSat (D) Aditya-L1

Q4. [Direction Puzzle] A ground-crew technician marches 60 m due North from the ATC tower, turns 45° to her right and marches $40\sqrt{2}$ m, then turns 90° to her left and marches a further 40 m. Her net displacement (magnitude and direction) from the ATC tower is:



- (A) 100 m due North-East (B) 100 m due East
(C) 60 m due East (D) 140 m North-East

Q5. Two trains approaching each other on parallel tracks have speeds in the ratio 5 : 3. They cross each other completely in 20 seconds. If the combined length of the two trains is 800 metres, find the speed of the FASTER train in km/h.



- (A) 72 (B) 81
(C) 90 (D) 96

Q6. Identify the segment with the error: 'Not only the mission commander / but also the entire crew of the sortie / were awarded / a unit citation.'

- (A) Not only the mission commander (B) but also the entire crew of the sortie
(C) were awarded (D) a unit citation

Q7. The 'Astra' beyond-visual-range air-to-air missile was successfully test-fired for the first time from the Sukhoi Su-30MKI at a range of over 100 km in the year:

- (A) 2015 (B) 2017
(C) 2019 (D) 2021

Q8. In a certain code, if 'NASA' is coded as '14-1-19-1' (positions in alphabet) and rearranged in reverse, the same code for 'ISRO' would be:

- (A) 15-18-19-9 (B) 19-15-18-9
(C) 15-19-18-9 (D) 9-19-18-15

Q9. A sum of Rs. 25,000 is invested at 10% p.a. compound interest compounded half-yearly for $1\frac{1}{2}$ years. The compound interest earned is approximately:

- (A) Rs. 3,940 (B) Rs. 3,878
(C) Rs. 3,972 (D) Rs. 4,041

Q10. The 'PSLV-C58' mission of January 2024 primarily placed which pioneering Indian scientific satellite into orbit?

- (A) INSAT-3DS (B) XPoSat (X-ray Polarimeter Satellite)
(C) EOS-06 (D) Aditya-L1

Q11. Antonym of garrulous:

- (A) Loquacious (B) Voluble
(C) Reticent (D) Effusive

Q12. Statements: (1) All quantum computers are advanced. (2) Some advanced machines are experimental. (3) No experimental machine is fully certified. Conclusions: I. Some quantum computers are experimental. II. Some advanced machines are not fully certified. III. All experimental machines are advanced.

- (A) Only I follows (B) Only II follows
(C) Only II and III follow (D) All follow

Q13. The 'One Nation One Election (ONOE)' High-Level Committee submitted its final report to the President of India in March 2024. The committee was chaired by:

- (A) Former President Ram Nath Kovind (B) Former President Pranab Mukherjee (posthumous work)
(C) Former Chief Justice N. V. Ramana (D) Former Vice President M. Venkaiah Naidu

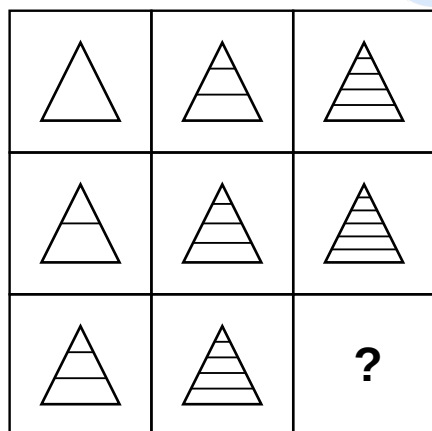
Q14. A container has 96 L of a milk-water mixture in the ratio 5 : 3. 24 L of the mixture is drawn off and replaced with pure water. From the resulting mixture, 24 L is again drawn off and again replaced with water. What is the final quantity of milk left in the container (in L)?

- (A) 33.75 (B) 36.00
(C) 34.50 (D) 32.50

Q15. One-word substitute: 'A political system where governance is exercised by the wealthiest few.'

- (A) Oligarchy (B) Plutocracy
(C) Aristocracy (D) Theocracy

Q16. [Visual Matrix] Consider a 3×3 figure matrix. In each row, the number of horizontal bars inside the outline triangle increases by exactly two going left to right (starting from row-specific base values: 0, 1, 2 for rows 1, 2, 3 respectively). Identify the missing bottom-right figure.



- (A) Triangle with 4 bars (B) Triangle with 5 bars
(C) Triangle with 6 bars (D) Inverted triangle with 4 bars

Q17. The 'HAL LCA Tejas Mk-1A', the first of the 83-aircraft contract, made its maiden flight in March 2024 at HAL's facility in:

- (A) Bengaluru (B) Nasik
(C) Kanpur (D) Koraput

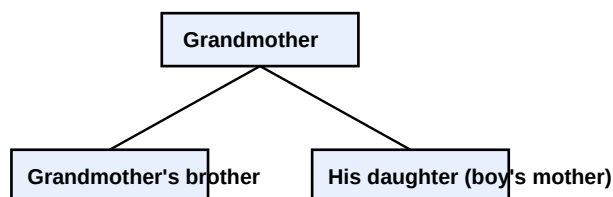
Q18. If A and B together can complete a task in 18 days, B and C together in 24 days, and C and A together in 36 days, how long will A, B and C together take to complete the same task?

- (A) 16 days (B) 14 days
(C) 12 days (D) 18 days

Q19. Convert to indirect speech: The instructor said to the trainee, 'Set the autopilot to heading-hold before you engage cruise mode.'

- (A) The instructor asked the trainee to set the autopilot to heading-hold before he engaged cruise mode.
(B) The instructor told the trainee that they set the autopilot to heading-hold.
(C) The instructor said the trainee to set autopilot.
(D) The instructor asked whether the trainee had set autopilot.

Q20. Pointing to a boy, Neha said, 'His mother is the only daughter of the only brother of my grandmother.' How is the boy related to Neha?



- (A) Second cousin (twice removed) (B) Nephew
(C) Uncle (D) First cousin (once removed)

Q21. The 'PSLV-C55' mission of April 2023 successfully deployed which two Singaporean earth-observation satellites?

- (A) TeLEOS-1 and TeLEOS-2 (B) TeLEOS-2 and Lumelite-4
(C) PSN-6 and DS-2 (D) NEO-1 and NEO-2

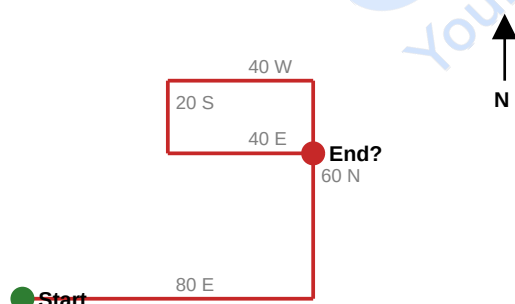
Q22. The average of 25 numbers is 42. If each number is multiplied by 1.5 and then 2 is subtracted from each, the new average becomes:

- (A) 61 (B) 63
(C) 62 (D) 60

Q23. Fill in the blank: 'The Chief Marshal's _____ analysis of the intelligence brief left the assembled staff officers scrambling to catch up with his line of reasoning.'

- (A) vapid (B) cursory
(C) incisive (D) prosaic

Q24. [Direction Puzzle] A UAV pilot flies the drone 80 m due East from the launch pad, then 60 m North, then 40 m West, then 20 m South, and finally 40 m East. The magnitude of the drone's net displacement from the launch pad (in metres) is:



- (A) 80 (B) 100
(C) 120 (D) 140

Q25. The 'INS Nilgiri', the lead ship of Project 17A stealth frigates, was commissioned into the Indian Navy in the year:

- (A) 2023 (B) January 2025
(C) 2026 (planned) (D) 2022

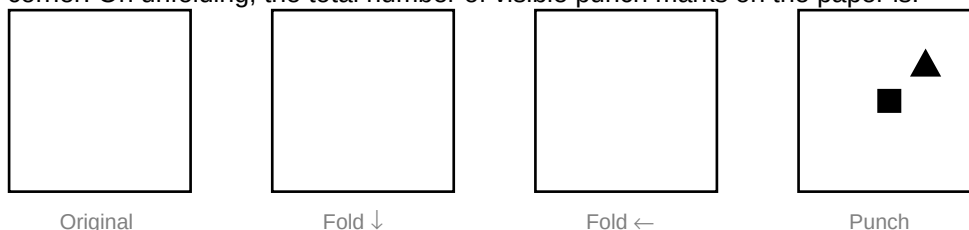
Q26. A shopkeeper marks his goods at 45% above cost and offers two successive discounts of 15% and 10%. Find his net profit percent.

- (A) 10.5% (B) 11.0%
(C) 10.9% (D) 11.2%

Q27. Correctly spelt word:

- (A) Millenary (B) Millinery
(C) Milennary (D) Milenery

Q28. [Paper Folding] A rectangular sheet of paper is folded once along its longer axis and then a second time along its shorter axis. In the resulting quadrant, one triangular punch and one square punch are made near the folded corner. On unfolding, the total number of visible punch marks on the paper is:



- (A) 4 (2 triangles + 2 squares) (B) 6
(C) 8 (4 triangles + 4 squares) (D) 2

Q29. The 'MILAN 2024' multilateral naval exercise, held off Visakhapatnam in February 2024, hosted warships and delegates from how many friendly foreign navies?

- (A) ≈ 40 (B) ≈ 25
(C) Over 50 (D) ≈ 15

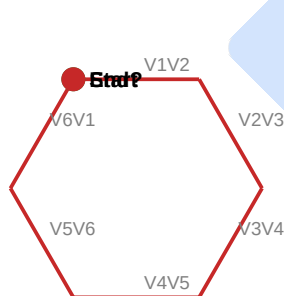
Q30. Two positive numbers are in the ratio 4 : 9. If the difference of their squares is 1625, the smaller number is:

- (A) 16 (B) 20
(C) 24 (D) 28

Q31. Choose the correct sentence improvement: 'The batch of trainees, along with the training captain, are heading to the simulator complex.'

- (A) is (B) were
(C) have been (D) No improvement

Q32. [Direction Puzzle] From a stationary hover, an autonomous drone flies exactly along the vertices of a regular hexagon of side 30 m (in the order $V_1 \rightarrow V_2 \rightarrow \dots \rightarrow V_6 \rightarrow V_1$). What is its total path length in metres?

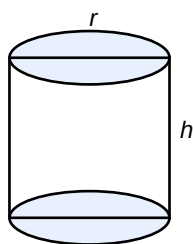


- (A) 150 (B) 180
(C) 210 (D) 240

Q33. The 'Deep Ocean Mission's manned submersible Matsya-6000 is being developed by:

- (A) NIOT (National Institute of Ocean Technology) (B) ISRO
(C) DRDO (D) INCOIS

Q34. A cylindrical fuel tank of internal diameter 14 m and height 30 m is filled to two-thirds of its capacity with aviation kerosene. If the fuel is drained at a constant rate of 22 kL/min, the total time required to fully drain the tank (in hours and minutes) is ($\pi = 22/7$):



- (A) 2 h 20 min
(C) 2 h 12 min

- (B) 2 h 24 min
(D) 2 h 30 min

Q35. Idiom: 'To beat about the bush' means:

- (A) To attack an enemy in cover
(C) To hunt game with a stick

- (B) To avoid coming directly to the point
(D) To be lost in a wilderness

Q36. Choose the odd one out from among the following ballistic-missile submarines / classes:

- (A) Arihant
(C) Aridhaman

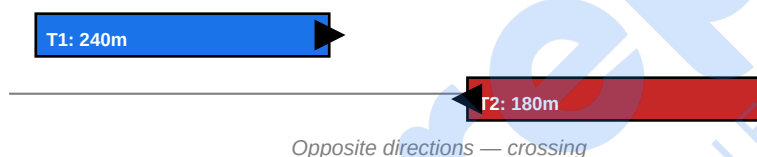
- (B) Arighaat
(D) Chakra

Q37. As of AFCAT 1 2025 window, the Chief of the Naval Staff of the Indian Navy is:

- (A) Admiral Karambir Singh
(C) Admiral Dinesh K. Tripathi

- (B) Admiral R. Hari Kumar
(D) Admiral Sunil Lanba

Q38. Two trains, one 240 m long and the other 180 m long, cross each other completely in 14 seconds when moving in opposite directions and in 42 seconds when moving in the same direction. Find the speed of the FASTER train in km/h.



- (A) 72
(C) 60

- (B) 54
(D) 66

Q39. Sentence with correct idiom usage:

- (A) The commander turned the tables on his adversary with a single tactical manoeuvre.
(C) The commander was turning the table on his adversary.

- (B) The commander turned tables on his adversary.
(D) The commander turned the table for his adversary.

Q40. [Row Seating] In a row of 60 cadets facing north, cadet M is 22nd from the left and cadet N is 18th from the right. Four cadets are then inserted in the gap between M and N. After the insertion, the number of cadets strictly between M and N is:



- (A) 23
(C) 24

- (B) 25
(D) 26

Q41. The '2024 Nobel Prize in Physics' was awarded jointly to John Hopfield and Geoffrey Hinton for their foundational discoveries and inventions related to:

- (A) Cellular oxygen sensing
(C) Attosecond electron dynamics

- (B) Machine learning with artificial neural networks
(D) Quantum-dot displays

Q42. A trader gains 25% by selling an article for Rs. 750. What price must he sell it at, to gain 40%?

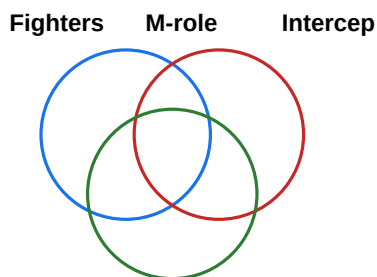
- (A) Rs. 810
(C) Rs. 830

- (B) Rs. 820
(D) Rs. 840

Q43. Identify the segment with the error: 'Every one of the officer's staff / have submitted their efficiency report / to the personnel branch / on time this quarter.'

- (A) Every one of the officer's staff
(B) have submitted their efficiency report
(C) to the personnel branch
(D) on time this quarter

Q44. [Venn Diagram] Choose the diagram that best represents: 'Fighters, Multi-role Aircraft, Interceptors' — All Interceptors are Fighters; some Fighters are Multi-role; some Multi-role Aircraft are not Fighters.



- (A) Three concentric circles
(B) Fighters and Multi-role Aircraft intersect; Interceptors wholly inside Fighters
(C) Three disjoint circles
(D) All three fully overlapping

Q45. India assumed the presidency of the 'International Solar Alliance (ISA)' at its 6th Assembly session in New Delhi in the year:

- (A) 2021
(B) 2022
(C) 2023
(D) 2024

Q46. At what rate of simple interest per annum will Rs. 8,000 amount to Rs. 12,000 in exactly 8 years?

- (A) 5%
(B) 6%
(C) 6.25%
(D) 7%

Q47. Directions (Q47-Q50): Read the passage. *Space is not, and has never been, a 'commons'. Every asset above the Karman line belongs to some nation-state or authorised operator, and every megaconstellation launched today drives up debris probability for every operator that follows. The tragedy of the orbital commons is not that space is shared, but that its degradation is externalised: the operator who launches a satellite bears no direct cost of the collision risk it imposes on all future operators. Until that externality is priced — through a launch-time insurance obligation, or a debris-removal levy — the cascade towards Kessler syndrome will accelerate quarter by quarter.* The passage's central argument is that space debris grows because:

- (A) Space is a true commons owned by no one
(B) Launch-time collision risk is externalised, not borne by the launching operator
(C) Nation-states own too little of the orbit
(D) Operators voluntarily leave debris behind

Q48. According to the passage, 'Kessler syndrome' refers to:

- (A) A form of pilot fatigue
(B) A cascading orbital-debris chain reaction
(C) A satellite-communications protocol
(D) A launch-vehicle failure mode

Q49. As per the passage, one of the mechanisms proposed to correct the externality is:

- (A) Free launches from ISA states
(B) A debris-removal levy on launching operators
(C) Fewer launches by treaty alone
(D) Banning small satellites

Q50. The tone of the passage is best described as:

- (A) Analytical and economic in framing
(B) Sentimental and nostalgic
(C) Fervently alarmist without evidence
(D) Hostile to all commercial space

Q51. The 'Nari Adalat' initiative for gram panchayat-level ADR forums for women is administered by which Union Ministry?

- (A) MoWCD
(B) MHA
(C) MHRD
(D) MoRD

Q52. If 45 workers can build a boundary wall in 30 days working 6 hours a day, how many days will 30 workers take to build twice the length of the same wall working 9 hours a day?

- (A) 50
(B) 60
(C) 55
(D) 72

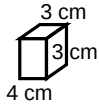
Q53. Find the missing term in the following series: 6, 14, 30, 62, 126, ?

- (A) 254
(B) 250
(C) 252
(D) 256

Q54. The 'Doctrine of Colourable Legislation' relates to:

- (A) Colour-coding of bills for identification
(B) Legislative bodies enacting laws indirectly beyond their competence
(C) Presidential veto powers
(D) State-emblem regulations

Q55. A cuboidal water tank has internal dimensions $4\text{ m} \times 3\text{ m} \times 2.5\text{ m}$. It is currently empty. Water is being pumped in at 2 kL per minute. How long will it take to fill 75% of the tank?

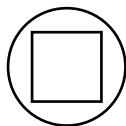


- (A) 10 min
(B) 11 min 15 sec
(C) 12 min
(D) 12 min 30 sec

Q56. Analogy: Trigger : Firearm :: Reactor : ?

- (A) Nuclear Submarine
(B) Aircraft Carrier
(C) Power Plant
(D) Missile

Q57. [Embedded Figure] The target is a small right-angled triangle with its longer leg horizontal, carrying a vertical median from the right-angle vertex and a circle at the vertex opposite the hypotenuse. Identify the option in which this target appears embedded intact.



A



B



C



D

- (A) Pentagon
(B) Hexagon with an inscribed right triangle & median & vertex-circle
(C) Star polygon
(D) Concentric squares

Q58. The IAF's 'South Western Air Command' headquarters is located at:

- (A) Gandhinagar
(B) Bengaluru
(C) Nagpur
(D) Prayagraj

Q59. The HCF of the polynomials (12, 18, 24) is:

- (A) 6
(B) 3
(C) 4
(D) 12

Q60. Idiom: 'To grasp at straws' means:

- (A) To make desperate attempts at any faint hope in a dire situation
(B) To eat healthily
(C) To take part in a lottery
(D) To hold a straw doll

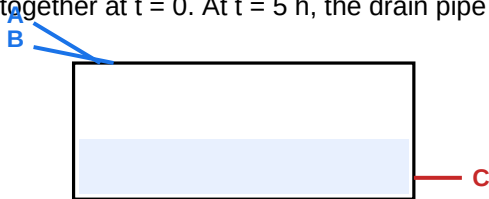
Q61. Choose the odd one out from among the following defence PSUs:

- (A) HAL
(B) BEL
(C) BEML
(D) MDL

Q62. The 'B4 vitamin' is another name for:

- (A) Thiamine
(B) Riboflavin
(C) Adenine (informal)
(D) Niacin

Q63. Two pipes A and B can fill a tank in 15 h and 20 h. A drain pipe C empties the tank in 30 h. All three are opened together at $t = 0$. At $t = 5$ h, the drain pipe is closed. The tank is completely full at $t = ?$



A 15h, B 20h; C 30h drain, closes at $t=5h$

- (A) 8 h
(C) 9 h
- (B) 10 h
(D) 11 h

Q64. Choose the correct sentence:

- (A) The number of applicants for the AFCAT exam have increased sharply this year.
(C) The number of applicant for the AFCAT exam has increased sharply this year.
- (B) The number of applicants for the AFCAT exam has increased sharply this year.
(D) The number of applicants for the AFCAT exam were increased sharply this year.

Q65. If 'P Δ Q' means P is the father of Q; 'P $\star$ Q' means P is the wife of Q; then which expression means M is the paternal grandmother of N?

- (A) M $\star$ P Δ Q Δ N
(C) M Δ P $\star$ N
- (B) M $\star$ P Δ N
(D) P Δ M $\star$ N

Q66. The 'ISRO's SPADEX (Space Docking Experiment)' successfully demonstrated the first-ever autonomous in-orbit docking of two Indian satellites in:

- (A) December 2024
(C) November 2024
- (B) January 2025
(D) March 2025

Q67. The volume of a right circular cone with base diameter 14 cm and slant height 25 cm is ($\pi = 22/7$):

- (A) 1,232 cu cm
(C) 1,232 cu cm
- (B) 1,540 cu cm
(D) 1,144 cu cm

Q68. Fill in the blank with the most appropriate word: 'The Air Marshal's _____ style, marked by long silences punctuated by pointed questions, had become legendary within the service.'

- (A) loquacious
(C) prolix
- (B) laconic
(D) voluble

Q69. Coded language: If '196 $\rightarrow$ 15' and '324 $\rightarrow$ 20' and '441 $\rightarrow$ 23', then '625 $\rightarrow$?'

- (A) 26
(C) 28
- (B) 27
(D) 30

Q70. The 'Sundarbans' delta lies primarily in the sub-basin of which river system?

- (A) Indus
(C) Godavari
- (B) Ganga-Brahmaputra-Meghna
(D) Krishna

Q71. A number is decreased by 20%, then increased by 25%. The net percentage change is:

- (A) No change
(C) 5% decrease
- (B) 0.5% increase
(D) 0.5% decrease

Q72. Complete: A2C, D5F, G10I, J17L, ?

- (A) M26O
(C) M25O
- (B) N26O
(D) M28O

Q73. The IAF equivalent of the Army rank 'Lieutenant Colonel' is:

- (A) Wing Commander
(C) Air Commodore
- (B) Group Captain
(D) Squadron Leader

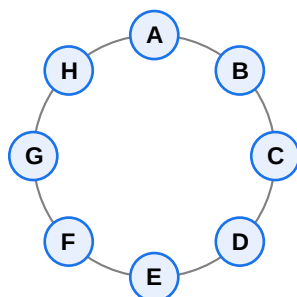
Q74. Two alloys contain zinc and copper in the ratios 2 : 5 and 4 : 3 respectively. In what ratio must they be mixed to obtain a new alloy with zinc and copper in the ratio 5 : 9?

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

Q75. Select the synonym of equanimity:

- (A) Anxiety
(C) Belligerence
- (B) Composure of mind
(D) Volatility

Q76. [Circular Seating] Eight officers A–H sit around a circular table facing the centre. A sits second to the left of B. C is opposite A. D sits between C and E. F sits third to the right of A. G is not adjacent to A. Which officer sits opposite E?



Facing the centre

- (A) H
(C) F

- (B) B
(D) Cannot be determined

Q77. Which national park in India was declared a Tiger Reserve in 2023, taking the country's official count of tiger reserves past 55?

- (A) Ratapani (Madhya Pradesh) (B) Dholpur-Karauli (Rajasthan)
(C) Veerangana Durgavati (Madhya Pradesh) (D) Guru Ghasidas–Tamor Pingla (Chhattisgarh)

Q78. In a class of 400 students, 60% offer French, 40% offer German and 25% offer both. How many offer only ONE of the two languages?

- (A) 200
(C) 240

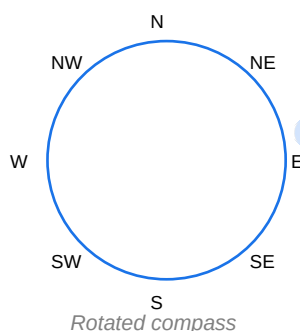
- (B) 220
(D) 260

Q79. Fill in the blank: 'Her _____ enthusiasm, undiminished after 30 years of frontline service, remained the moral center of gravity of the unit.'

- (A) quixotic
(C) quiescent

- (B) indefatigable
(D) capricious

Q80. If in a rotated compass 'North-East' becomes 'North', then which direction now indicates the ORIGINAL West?



- (A) South-West
(C) South

- (B) North-West
(D) West

Q81. Under the 'Digital India Act (proposed)', likely to be enacted in 2025 to replace the IT Act 2000, the primary regulatory objective is:

- (A) Comprehensive re-organisation of digital-space governance (B) Restrictions only on foreign investors
(C) A ban on all social media (D) Only e-governance simplification

Q82. Find the area of a regular hexagon whose perimeter is 60 cm.

- (A) $150\sqrt{3}$ sq cm
(C) $120\sqrt{3}$ sq cm

- (B) $100\sqrt{3}$ sq cm
(D) $180\sqrt{3}$ sq cm

Q83. Antonym of abstruse:

- (A) Recondite
(C) Perspicuous

- (B) Esoteric
(D) Cryptic

Q84. Find the odd number-pair:

- (A) 27 – 3
(C) 125 – 5

- (B) 64 – 4
(D) 343 – 8

Q85. The 'Yudh Abhyas' bilateral exercise, held in September 2024 at high altitude, was conducted between India and:

- (A) USA (B) Russia
(C) France (D) UK

Q86. A car travels a distance in three equal parts at speeds 40 km/h, 50 km/h and 60 km/h respectively. Its average speed for the entire journey (km/h) is:

- (A) 48.65 (B) 49.32
(C) 49.09 (D) 50.00

Q87. Idiom: 'To go the whole hog' means:

- (A) To do something completely and without reservation (B) To eat a lot
(C) To move quickly (D) To hunt a wild boar

Q88. The 'DAP 2020' (Defence Acquisition Procedure) is administered by:

- (A) MoD's Department of Defence (B) Department of Defence Production alone
(C) Integrated Defence Staff (D) Cabinet Committee on Security only

Q89. Complete: 1, 3, 9, 33, 153, ?

- (A) 873 (B) $873 \times 6 - 3$
(C) 871 (D) 893

Q90. The 'National Turmeric Board' was established in October 2023 by the Government of India, with its headquarters at:

- (A) Nizamabad, Telangana (B) Erode, Tamil Nadu
(C) Sangli, Maharashtra (D) Salem, Tamil Nadu

Q91. A dishonest trader marks up his goods by 40% and offers a discount of 20% at the counter. In addition he cheats by using a 900 g weight in place of 1 kg. His overall profit percent is approximately:

- (A) 24.44% (B) 25.00%
(C) 24.55% (D) 26.67%

Q92. The '2024 Nobel Prize in Peace' was awarded to:

- (A) Nihon Hidankyo (B) Narges Mohammadi
(C) European Union (D) Ales Bialiatski

Q93. Which of the following IAF training establishments is a specialised flying-instructor school?

- (A) AFA Dundigal (B) FIS Tambaram
(C) AFTC Bengaluru (D) AFRI Coimbatore

Q94. A can do a task in 30 days, B in 45 days. They work together on alternate days starting with B. In how many days is the work completed?

- (A) 36 (B) 35
(C) 34 (D) 33.33

Q95. The 'Bharatpol' portal was launched in January 2025 to strengthen international police cooperation, and is administered by:

- (A) CBI (B) MHA
(C) NIA (D) IB

Q96. A rectangle has perimeter 68 cm and diagonal 26 cm. Its area (sq cm) is:

- (A) 240 (B) 260
(C) 288 (D) 260

Q97. Idiom: 'To play the second fiddle' means:

- (A) To be in a subordinate or secondary role (B) To play a musical instrument
(C) To wait for a second turn (D) To cheat at cards

Q98. The 'PM SHRI' scheme, launched in September 2022 and being scaled up in 2024-25, is focused on:

- (A) Upgrading select existing schools into model schools (B) Direct financial transfer to farmers
(C) Reservation in higher-education institutions (D) Digital literacy for elderly citizens

Q99. Complete: 5, 11, 24, 51, 106, ?

- (A) 217 (B) 215
(C) 219 (D) 213

Q100. The 'INS Vikramaditya', India's aircraft carrier, was acquired from and refitted in:

- (A) Russia (Sevmash Shipyard)
- (B) France (Chantiers de l'Atlantique)
- (C) Italy (Fincantieri)
- (D) United Kingdom (Rosyth)

