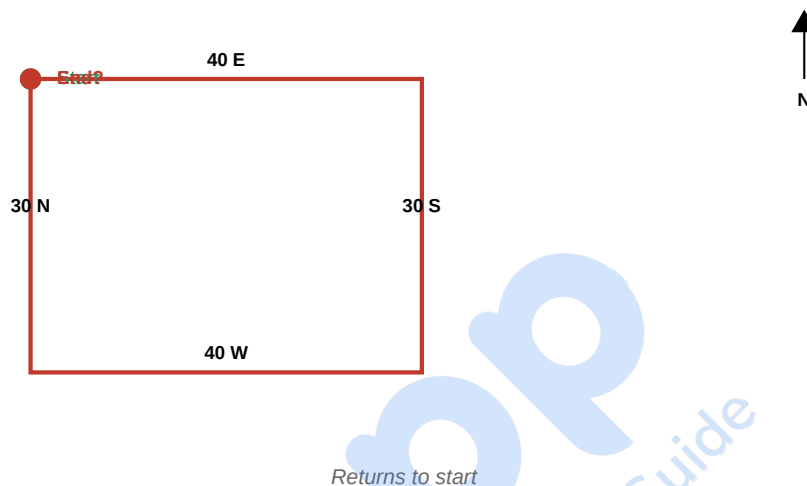


AFCAT 1 2025 Practice Paper 04

Q1. The DRDO's 'ULPGM-V3' (Ultra Long-range Precision Guided Munition v3, unveiled in 2024) is an anti-armour PGM designed to be launched from a Nagastra-family loitering munition/UAV bus. It is a variant / derivative of which parent weapon in the DRDO stable?

- (A) SANT (Standoff Anti-Tank) (B) HELINA (Helicopter-launched NAG)
(C) Amogha-III (D) Rudram-2

Q2. A patrol helicopter takes off from base, flies 40 km due East, then 30 km due South, then 40 km due West, and finally 30 km due North. What is its net displacement from the base at the end of the sortie?



- (A) 10 km East (B) 0 km (same point)
(C) 10 km North (D) 40 km net

Q3. A sum of Rs. 20,000 is invested at 20% p.a. compounded half-yearly for exactly 1 year. Find the compound interest earned.



Half-yearly CI, 1 year

- (A) Rs. 4,200 (B) Rs. 4,410
(C) Rs. 4,000 (D) Rs. 4,320

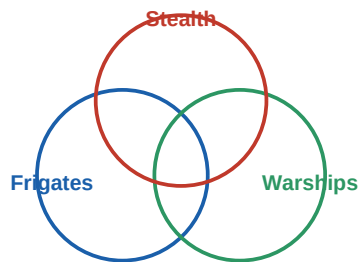
Q4. In the sentence 'Small strike-drones have become ubiquitous on the modern battlefield, from urban infantry sections to naval boarding parties', the underlined word most nearly means:

- (A) Scarce (B) Omnipresent
(C) Localised (D) Antiquated

Q5. The India-France bilateral air-combat exercise 'Garuda VII', held Oct-Nov 2024, was hosted at which airbase?

- (A) Kalaikunda AFS, India (B) Mont-de-Marsan AB, France
(C) Sulur AFS, India (D) Al Dhafra AB, UAE

Q6. Statements: (1) All frigates are warships. (2) Some warships are stealth. (3) No stealth ship is decommissioned.
Conclusions: I. Some frigates are stealth. II. Some warships are not decommissioned. III. No frigate is decommissioned. Which follow?



Set relations for syllogism

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

Q7. A regular hexagon has a side length of 8 cm. Compute its area (in square cm).



Regular hexagon area

- (A) $96\sqrt{3}$ (B) $48\sqrt{3}$
(C) $64\sqrt{3}$ (D) $128\sqrt{3}$

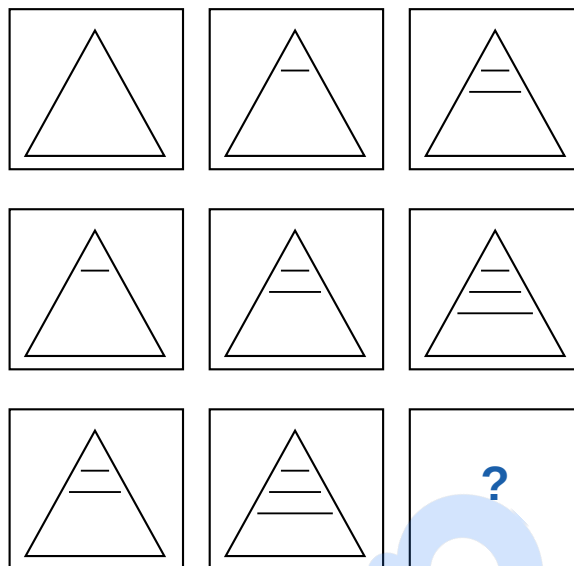
Q8. Fill in the blank: 'The strategist's _____ grasp of second-order effects made his war-games unnervingly predictive of real Indo-Pacific incidents.'

- (A) Superficial (B) Preternatural
(C) Cursory (D) Feckless

Q9. The 106th Constitutional Amendment (2023) reserves seats for women in the Lok Sabha and State Legislative Assemblies. However, it comes into force only after which prerequisite?

- (A) Presidential assent alone (B) The next Census followed by a delimitation exercise
(C) Ratification by 50 percent of the States (D) A confirmatory ruling by the Supreme Court

Q10. [Visual Matrix] In a 3x3 grid, each row shows a SQUARE with an increasing number of internal DIAGONALS.
row-1 (0,1,2), row-2 (1,2,3), row-3 (2,3,?). Identify the missing bottom-right figure.



Bottom-right missing figure

- (A) Square with 4 internal diagonals
(B) Square with 3 internal diagonals
(C) Square with 2 internal diagonals
(D) Circle with 4 chords

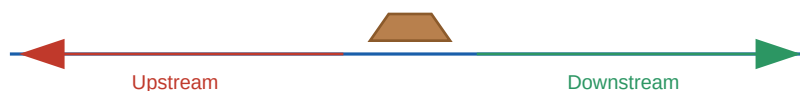
Q11. 'Project Varsha', a strategic naval facility being developed by the Indian Navy for SSBN operations on the Eastern Seaboard, is located near:

- (A) Karwar (Karnataka)
(B) Rambilli (Andhra Pradesh)
(C) Visakhapatnam-East
(D) Kavaratti (Lakshadweep)

Q12. Identify the segment containing an error: 'The regiment as well as its officers / have been / awarded a battle honour / for their conduct during the Kargil operations.'

- (A) The regiment as well as its officers
(B) have been
(C) awarded a battle honour
(D) for their conduct during the Kargil operations

Q13. The speed of a boat in still water is 12 km/h. It takes 3 hours to cover 30 km downstream. Determine the boat's upstream speed (km/h).



Still-water 12 km/h — find upstream

- (A) 6
(B) 4
(C) 5
(D) 8

Q14. If in a code 'FIGHTER' -> 'HKIJVGT' (each letter +2), how is 'STRIKE' encoded?



Caesar +2 shift for STRIKE

- (A) UVKTMG (B) UVTKMG
(C) UVTKMH (D) UVTKNG

Q15. India's first solar-observatory 'Aditya-L1' was inserted in January 2024 into a halo orbit around which Lagrange point of the Sun-Earth system?

- (A) L1 (halo orbit) (B) L2
(C) L4 (D) L5

Q16. Select the synonym of the underlined word: 'His briefings were often recondite, requiring newcomers to consult glossaries just to keep pace.'

- (A) Abstruse (B) Lucid
(C) Straightforward (D) Elementary

Q17. A and B together finish a project in 12 days. A alone would take 20 days. How many days would B need to finish the project alone?



Work rates additive

- (A) 24 (B) 36
(C) 30 (D) 40

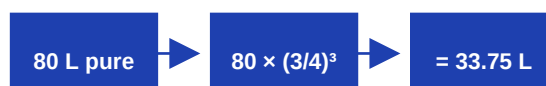
Q18. Find the odd one out from among indigenous Indian UAV projects (consider role and generation carefully):

- (A) TAPAS-BH (B) Ghatak
(C) Nagastra-1 (D) Nishant

Q19. The 2024 Major Dhyan Chand Khel Ratna Award was conferred upon (jointly, among others):

- (A) Manu Bhaker and D. Gukesh (among four awardees) (B) P.V. Sindhu only
(C) Neeraj Chopra only (D) Sunil Chhetri only

Q20. A tank contains 80 L of pure milk. 20 L is drawn out and replaced with water; this process is repeated twice more. Find the final quantity of milk left in the tank (approx).



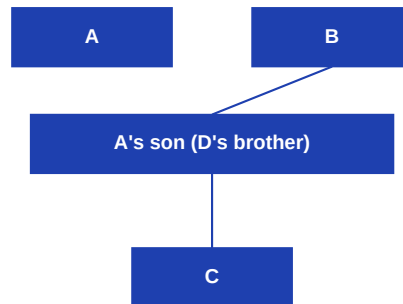
Successive replacement formula

- (A) 33.75 L (B) 40 L
(C) 45 L (D) 50 L

Q21. Improve the underlined portion: 'Hardly had the sortie taken off than radar contact was lost with the night lead.'

- (A) when (B) then
(C) before (D) No improvement

Q22. A and B are brothers. C and D are sisters. A's son is D's brother. How is B related to C?



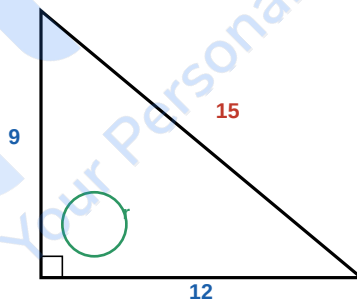
Kinship deduction — B is C's uncle

- (A) Father (B) Uncle
(C) Brother (D) Grandfather

Q23. The 'Cabinet Mission Plan' of 1946 proposed a federal Union of India with three groupings of provinces. It was ultimately rejected principally by:

- (A) The Indian National Congress on the compulsory grouping clause (B) The Muslim League on its partition demand
(C) The British Cabinet in London (D) Sikh political parties alone

Q24. The radius of the incircle of a right triangle with legs 9 cm and 12 cm is:



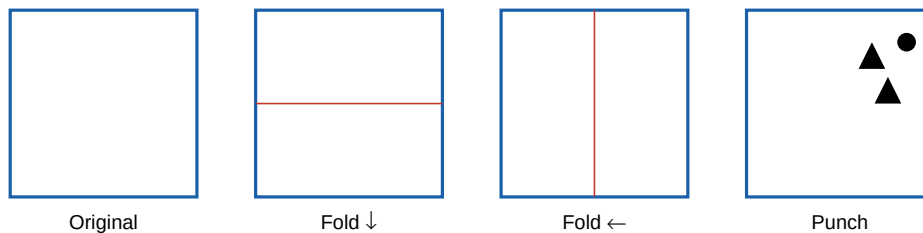
Incircle radius of right triangle

- (A) 3 cm (B) 2.5 cm
(C) 4 cm (D) 3.5 cm

Q25. One-word substitute: 'A person appointed to settle a dispute between two parties with binding authority.'

- (A) Arbiter (B) Emissary
(C) Interlocutor (D) Plenipotentiary

Q26. [Paper Folding] A square sheet is folded horizontally, then vertically, producing four layers. In the folded top-right quadrant, ONE cross punch and ONE triangular punch are made. Upon unfolding, how many punches of each type are visible?



Fold twice, punch cross + triangle, unfold

- (A) 4 crosses and 4 triangles
(B) 2 crosses and 2 triangles
(C) 8 crosses and 8 triangles
(D) 1 cross and 1 triangle

Q27. 'Project 17B', the next-generation stealth guided-missile frigate class of the Indian Navy (follow-on to Project 17A Nilgiri-class), is expected to feature:

- (A) Integrated Electric Propulsion (IEP) and indigenous Combat Management System
(B) Nuclear propulsion
(C) STOBAR fixed-wing aviation facilities
(D) Only foreign radars

Q28. The ratio of A's and B's monthly incomes is 5:7 and their monthly expenses are in the ratio 3:5. If each of them saves Rs. 6,000 per month, find A's monthly income.



Two-variable income/expense

- (A) Rs. 15,000
(B) Rs. 21,000
(C) Rs. 24,000
(D) Rs. 18,000

Q29. Antonym of the underlined word: 'The retiring Air Marshal was known for his munificent support of the AFA cadets' welfare fund.'

- (A) Bountiful
(B) Parsimonious
(C) Lavish
(D) Generous

Q30. In a row of 60 cadets, Arun is 24th from the left and Varun is 18th from the right. How many cadets are between them?



Row of 60 — Arun 24L, Varun 18R

- (A) 17
(B) 18
(C) 16
(D) 19

Q31. The 'Colombo Security Conclave' initially included India, Sri Lanka, Maldives and Mauritius. In 2023 it added, as its fifth member:

- (A) Seychelles
(B) Bangladesh
(C) Nepal (observer)
(D) Comoros

Q32. A salary is first increased by 20% and then decreased by 10%. Determine the net percentage effect.



Two-step multiplicative

- (A) 10% increase
(B) 8% increase
(C) 12% increase
(D) 9% increase

Q33. Directions (Q33-Q36): Read the passage. 'Deterrence is not a static condition. It is a bargain re-priced daily by the perceived credibility, capability and communication of the deterring party. Where any of these three degrade - through obsolescence, ambiguity or delayed signalling - deterrence quietly loses purchasing power without any dramatic incident to announce the erosion.' The passage frames deterrence as:

- (A) A permanent structural equilibrium
(B) A dynamic bargain repriced daily by three factors
(C) A purely legal doctrine
(D) Dependent on binding treaties alone

Q34. According to the Q33 passage, deterrence degrades because of:

- (A) Enemy propaganda alone
(B) Obsolescence, ambiguity or delayed signalling
(C) Rising defence budgets
(D) Excessive strategic transparency

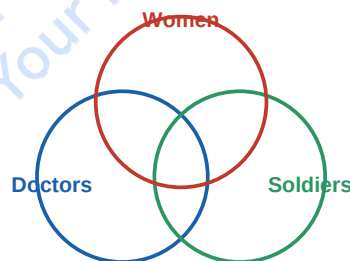
Q35. In the Q33 passage, 'loses purchasing power' is a metaphor drawn from:

- (A) Military logistics
(B) Economics and monetary policy
(C) Diplomacy
(D) Legal theory

Q36. The overall tone of the Q33 passage is best described as:

- (A) Cautionary and analytical
(B) Nostalgic
(C) Sardonic
(D) Purely celebratory

Q37. [Venn Diagram] Which diagram best represents: 'Doctors, Soldiers, Women' - some doctors are soldiers; some soldiers are women; some women are doctors; all three groups share at least one common member.



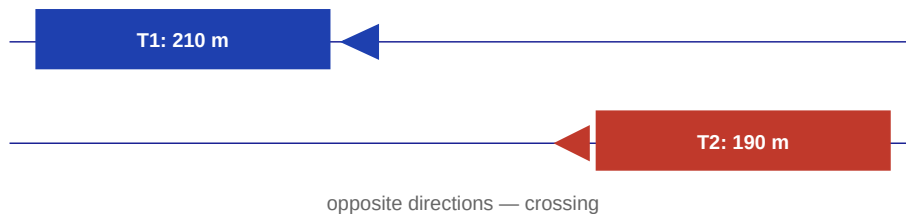
Set relations among three groups

- (A) Three concentric circles
(B) Three mutually disjoint circles
(C) Three mutually intersecting circles with a common region
(D) One circle enclosing two disjoint

Q38. In the IAF, the rank equivalent to a Naval Captain (a four-ring officer, e.g. commanding a major warship) is:

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

Q39. Two trains 210 m and 190 m long move in opposite directions on parallel tracks and cross each other in 8 seconds. If the faster train's speed is 108 km/h, find the slower train's speed (km/h).



Opposite-direction crossing

- (A) 72 (B) 60
(C) 84 (D) 78

Q40. Choose the correct sentence:

- (A) The committee has taken their decision. (B) The committee have took its decision.
(C) The committee has taken its decision. (D) The committee had take his decision.

Q41. The 'NISAR' (NASA-ISRO Synthetic Aperture Radar) satellite is expected to image the Earth using dual-frequency bands:

- (A) X-band and Ku-band (B) L-band and S-band
(C) C-band only (D) P-band and X-band

Q42. Choose the word least like the others (consider platform/role):

- (A) Sukhoi Su-30MKI (B) Dassault Rafale
(C) IAI Heron (D) Mirage 2000

Q43. The average age of a squadron of 20 pilots is 32 years. A pilot aged 45 leaves the squadron and is replaced by one aged 25. Find the new average age.



Average with substitution

- (A) 31 (B) 31.5
(C) 32.5 (D) 30

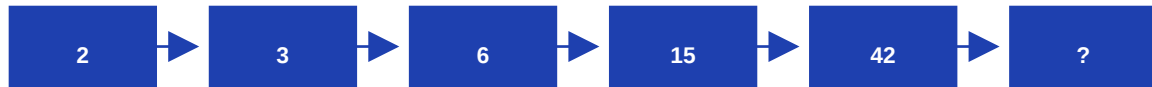
Q44. One-word substitute: 'Government by a small group of powerful people.'

- (A) Oligarchy (B) Plutocracy
(C) Meritocracy (D) Autocracy

Q45. The Barren Island volcano - India's only confirmed active volcano - is located in:

- (A) The Andaman Sea, part of Andaman & Nicobar Islands (B) Lakshadweep
(C) Gulf of Mannar (D) Arabian Sea off Konkan

Q46. Find the missing term: 2, 3, 6, 15, 42, ?

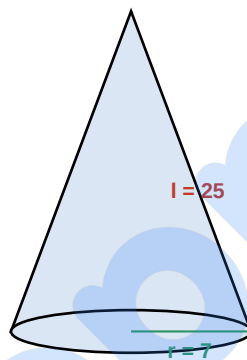


Pattern: $3 \cdot \text{prev} - 3$

Find missing term

- (A) 123 (B) 129
(C) 127 (D) 125

Q47. A right circular cone has base radius 7 cm and height 24 cm. Find its slant height and volume ($\pi = 22/7$).



Cone base 7, slant 25 — find volume

- (A) 25 cm ; 1232 cu cm (B) 25 cm ; 1230 cu cm
(C) 24 cm ; 1200 cu cm (D) 26 cm ; 1232 cu cm

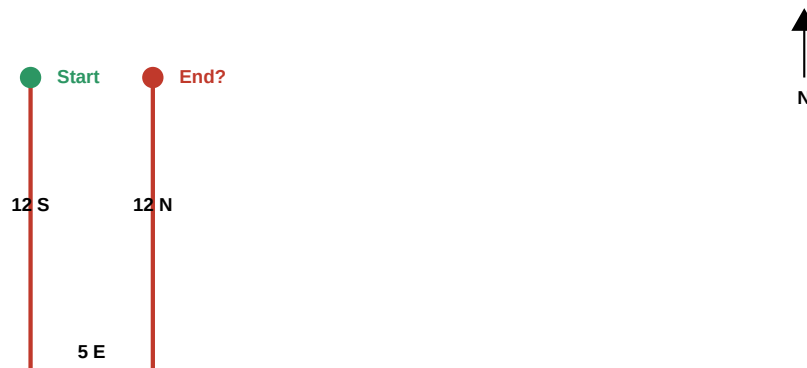
Q48. Antonym of the underlined word: 'His briefings, though technically correct, were dishearteningly voluble and rambled well past the allotted slot.'

- (A) Talkative (B) Verbose
(C) Taciturn (D) Loquacious

Q49. The 2024 Nobel Peace Prize was awarded to:

- (A) Narges Mohammadi (B) Nihon Hidankyo (Japan Confederation of A- and H-Bomb Sufferers)
(C) Maria Ressa (D) World Food Programme

Q50. P walks 12 m due South, turns left and walks 5 m, then turns left again and walks 12 m. Determine his displacement from the start (magnitude and direction).



Displacement = 5 m East

- (A) 5 m East (B) 5 m West
(C) 12 m East (D) 13 m North

Q51. Fundamental Duties were added to the Constitution by which Amendment based on which committee's recommendation?

- (A) 42nd Amendment (1976) / Swaran Singh Committee (B) 44th Amendment (1978) / Sarkaria Commission
(C) 52nd Amendment (1985) / Rajamannar Committee (D) 73rd Amendment (1992) / L.M. Singhvi Committee

Q52. A is 25% more efficient than B. Together they finish a job in 20 days. How many days would B need alone?



Efficiency ratio

- (A) 36 days (B) 45 days
(C) 50 days (D) 40 days

Q53. Fill in the blank with the most precise word: 'The classified assessment was _____ with technical jargon, rendering it opaque even to seasoned analysts.'

- (A) Bereft (B) Bristling
(C) Devoid (D) Purged

Q54. If 'FLIGHT' -> 'GKJFIU' (letters at positions 1,3,5 shifted +1; letters at positions 2,4,6 shifted -1), how is 'ARMY' encoded?



Positional +1/-1 code for ARMY

- (A) BQNX (B) BQMX
(C) BQNY (D) BRNX

Q55. The Brahmaputra river enters India from Arunachal Pradesh under the name:

- (A) Tsangpo (B) Siang
(C) Dibang (D) Lohit

Q56. A traveller covers half of a distance at 60 km/h and the remaining half at 40 km/h. Find his average speed for the whole journey.



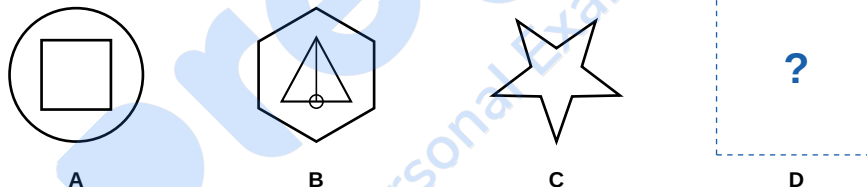
Harmonic-mean of two speeds

- (A) 48 (B) 50
(C) 45 (D) 52

Q57. Synonym of the underlined word: 'She was the most assiduous student in the batch, unwilling to leave the flight-planning room before every leg was triple-checked.'

- (A) Diligent (B) Careless
(C) Sporadic (D) Cavalier

Q58. [Embedded Figure] Target: a right-angled trapezium with a single diagonal drawn from the acute corner to the opposite obtuse corner. Which option contains the target embedded intact?



Right-trapezium with diagonal — find intact copy

- (A) Hexagon with rotated triangle (B) Pentagon containing the trapezium upright with diagonal
(C) Concentric circles (D) Star polygon

Q59. The IAF equivalent of the Army Major General is:

- (A) Air Commodore (B) Air Vice-Marshal
(C) Group Captain (D) Air Marshal

Q60. The HCF of $3^2 \times 5 \times 7$ and $2 \times 3 \times 5^2 \times 7^2$ is:



HCF from prime factorisations

- (A) 105 (B) 315
(C) 35 (D) 630

Q61. The idiom 'to cross the Rubicon' means:

- (A) To reach a point of no return (B) To retreat cautiously
(C) To make a diplomatic bargain (D) To share responsibility

Q62. Find the odd one out from among these formations of the Indian Army:

- (A) Gorkha Rifles (B) Kumaon Regiment
(C) Rajputana Rifles (D) Corps of Signals

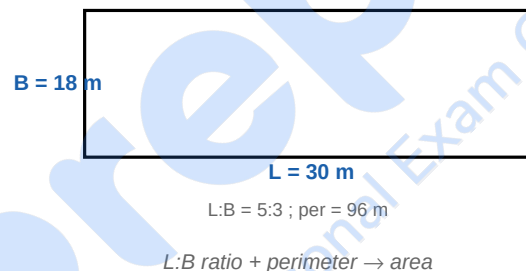
Q63. ISRO's 'Reusable Launch Vehicle - Landing Experiment (RLV-LEX)' third mission (2024) successfully demonstrated:



Reusable Launch Vehicle demonstrator

- (A) Cross-range autonomous landing (Pushpak, LEX-03) (B) Full orbital reusability
(C) Water splashdown recovery only (D) Air-breathing scramjet

Q64. The ratio of length to breadth of a rectangle is 5:3, and its perimeter is 96 m. Find its area (sq m).

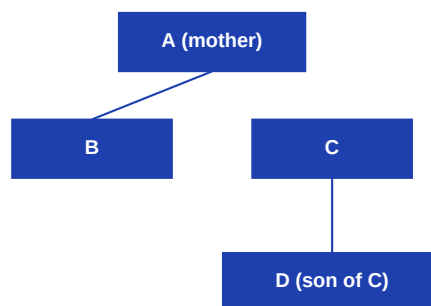


- (A) 540 (B) 560
(C) 600 (D) 480

Q65. Fill in the blank: 'Her _____ demeanour during the crisis kept the entire ops room from spiralling into panic.'

- (A) Sanguine (B) Frantic
(C) Overwrought (D) Petulant

Q66. 'A is the mother of B. B is the sister of C. D is the son of C.' How is A related to D?



A is D's grandmother

- (A) Grandmother (B) Aunt
(C) Mother (D) Cousin

Q67. The 'Dandi March' (12 March - 6 April 1930) covered approximately what distance?

- (A) 150 km (B) 240 km
(C) 320 km (D) 400 km

Q68. A city's population grows by 10% in the first year and by 20% in the second. If the population at end of 2 years is 26,400, the original population was:



Compound percentage back-calc

- (A) 20,000 (B) 22,000
(C) 24,000 (D) 25,000

Q69. Improve the underlined portion: 'The task is much difficult than we anticipated.'

- (A) much more difficult (B) very difficult
(C) much difficulter (D) No improvement

Q70. The Indian Army's indigenous 155 mm / 52 cal towed artillery gun, the ATAGS, is jointly developed by DRDO's ARDE and:

- (A) BEL and BEML (B) Tata Advanced Systems and Kalyani Group
(C) L&T; only (D) Bharat Forge alone

Q71. Complete: A2Z, C6X, E12V, G20T, ?



Odd letters +2 ; even letters -2 ; nums +4,+6,+8,+10

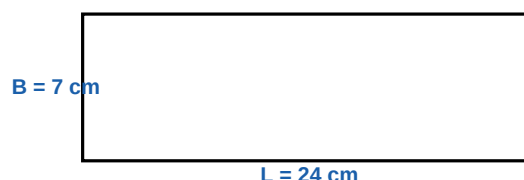
Alphanumeric compound

- (A) I30R (B) I28R
(C) I30S (D) H30R

Q72. One-word substitute: 'A place resounding with music or words spoken loudly.'

- (A) Amphitheatre (B) Auditorium
(C) Resonant chamber (D) Vestibule

Q73. The diagonal of a rectangle is 25 cm and its area is 168 sq cm. Determine the perimeter (in cm).



diagonal 25 ; area 168

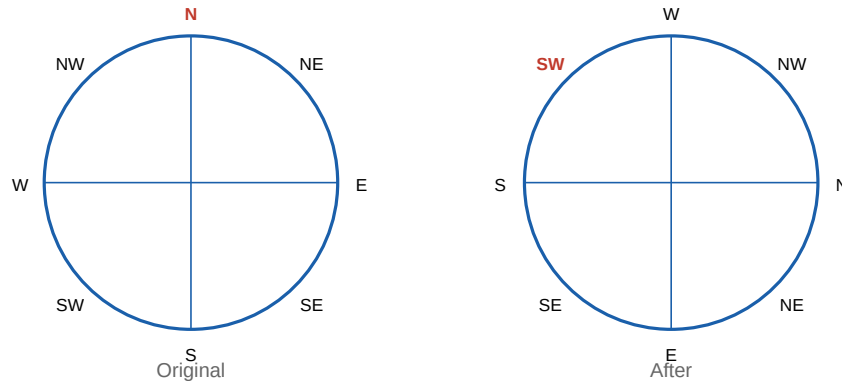
Diagonal + area → perimeter

- (A) 62 (B) 64
(C) 68 (D) 72

Q74. The Speaker of the Lok Sabha submits his/her resignation to:

- (A) The President of India (B) The Prime Minister
(C) The Deputy Speaker (D) The Vice-President

Q75. If a compass is rotated 90 degrees clockwise (so that North now points to East), then the ORIGINAL South-West now points to:



- (A) North-West (B) North-East
(C) South-East (D) West

Q76. India's highest peacetime gallantry award is:

- (A) Param Vir Chakra (B) Ashoka Chakra
(C) Kirti Chakra (D) Vir Chakra

Q77. 40% of a number is 20 more than 25% of the same number. Find the number.



Simple percentage equation

- (A) 120 (B) 133.33
(C) 150 (D) 160
- Q78.** Choose the meaning of 'Volte-face':
- (A) A courageous stand under pressure (B) A complete reversal of opinion or attitude
(C) A face-to-face duel (D) A ceremonial pose

Q79. Find the odd pair (each of form 'value - its square root'):



Perfect-square vs incorrect root

- (A) 49 - 7 (B) 121 - 11
(C) 169 - 13 (D) 144 - 14

Q80. The G20 Summit 2024 - hosted at Rio de Janeiro - was held under the presidency of:

- (A) Brazil (B) Italy
(C) Indonesia (D) South Africa

Q81. A jet has ground speed 750 km/h with a tailwind and 600 km/h with a headwind of the same magnitude. Determine its airspeed (still-air speed) in km/h.



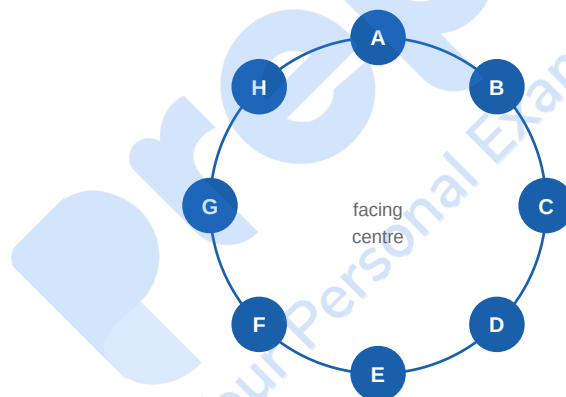
Airspeed = mean of tail/head-wind

- (A) 675 (B) 700
(C) 660 (D) 725

Q82. Synonym of the underlined word: 'A visible trepidation crossed the young pilot's face as he stepped into the simulator for the emergency checkride.'

- (A) Composure (B) Apprehension
(C) Alacrity (D) Placidity

Q83. [Circular Seating] Eight officers sit around a circle facing centre. A is second to the right of B; C is opposite B; D is between C and E (with E to D's left); F is opposite A; G is not adjacent to A. Who sits to the immediate left of C?



A right-of-B ; C opposite B

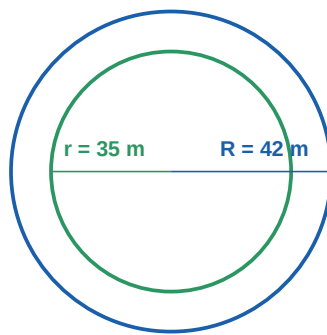
8-seat circular deduction

- (A) D (B) E
(C) H (D) Cannot be determined

Q84. Which mountain range separates the Kashmir Valley from the Ladakh region?

- (A) Pir Panjal (B) Zaskar Range
(C) Great Himalayas / Zaskar (D) Karakoram

Q85. A circular field of radius 35 m is surrounded by a 7 m wide path. Find the area of the path (sq m; $\pi = 22/7$).



$$\text{annulus area} = \pi(R^2 - r^2)$$

Path around a circular field

- (A) 1,694 (B) 1,540
(C) 1,848 (D) 1,760

Q86. Antonym of the underlined word: 'His truculent tone during the debrief unnerved every subordinate in the room.'

- (A) Belligerent (B) Amiable
(C) Combative (D) Hostile

Q87. In a code, if '4-15-4-15' spells 'DODO', then what word does '20-1-14-11' spell?



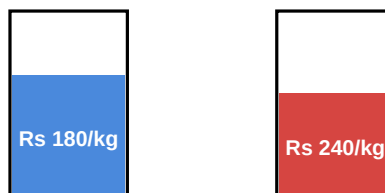
Position-to-letter decode

- (A) TANK (B) TALK
(C) TAKE (D) TICK

Q88. 'Pralay' is a DRDO-developed short-range surface-to-surface tactical ballistic missile with a range of approximately:

- (A) 50 km (B) 150 km
(C) 150 to 500 km (D) 1000 km

Q89. Two types of tea costing Rs. 180/kg and Rs. 240/kg are blended to obtain a mixture worth Rs. 210/kg. Find the mixing ratio.



mix to get target ratio

Alligation: blend to Rs 210/kg

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

Q90. Identify the segment with an error: 'The pilot along with his crew / were seen boarding / the aircraft / at 0400 hours.'

- (A) The pilot along with his crew
(B) were seen boarding
(C) the aircraft
(D) at 0400 hours

Q91. Complete: BF, DI, GM, KR, ?



1st: +2,+3,+4,+5 ; 2nd: +3,+4,+5,+6

Two-track letter series

- (A) PX
(B) OW
(C) PW
(D) QY

Q92. The Indian Army's 'Northern Command' has its headquarters at:

- (A) Udhampur
(B) Lucknow
(C) Chandimandir
(D) Kolkata

Q93. Three pipes A, B, C fill a tank in 6, 8 and 12 hours respectively. All are opened together but A is closed after 2 hours. Find the total time (from start) to fill the tank.



A 6h, B 8h, C 12h — A closes at 2h

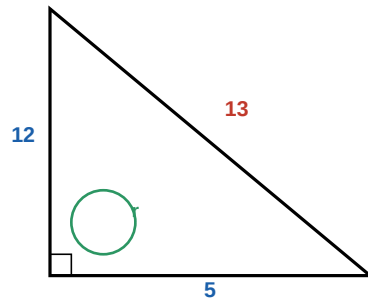
Cumulative work with pipe closure

- (A) 4 h
(B) 4 h 40 min
(C) 5 h
(D) 4 h 20 min

Q94. One-word substitute: 'A person who believes that pleasure or happiness is the most important thing in life.'

- (A) Stoic
(B) Ascetic
(C) Hedonist
(D) Cynic

Q95. A soldier walks 5 km due East, then 12 km due North. What is his straight-line distance from the start (km)?



5-12-13 Pythagoras

- (A) 13 (B) 17
(C) 7 (D) 12

Q96. The 'AGNIPATH' scheme allows Agniveers to serve an initial fixed tenure of:

- (A) 3 years (B) 4 years
(C) 5 years (D) 6 years

Q97. Find the next term: 1, 4, 9, 16, 25, 36, ?



Consecutive squares $1^2, \dots, 7^2$

Find next term

- (A) 46 (B) 47
(C) 49 (D) 48

Q98. The Jallianwala Bagh massacre took place on:

- (A) 13 April 1919 (B) 13 April 1920
(C) 10 April 1919 (D) 6 April 1919

Q99. A trader marks up his goods by 25%, allows a discount of 20%, but uses an 800 g weight in place of 1 kg. His overall profit percent is:



Markup + discount + false-weight

- (A) 20% (B) 25%
(C) 0% (D) 15%

Q100. The 2024 Nobel Prize in Physiology or Medicine was awarded for discoveries concerning:

- (A) Immune-checkpoint therapy
- (B) microRNA and its role in post-transcriptional gene regulation
- (C) mRNA vaccine platforms
- (D) Circadian rhythm genes