RRB NTPC (UG) CBT-I Official Paper (Held On: 03 Sept, 2025 Shift 1) (Previous Year Paper)

RRB Group D • 2025 • 100 questions • 90 minutes • Answer key and solutions

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

yourmocktest.com/pyq/rrb-group-d/rrb-ntpc-ug-cbt-i-official-paper-held-on-03-sept-2025-shift-1…

Scan the QR code or click the link to open it.

GENERAL AWARENESS

Q1. Which reaction occurs when an alkoxide ion attacks a primary alkyl halide via SN2 mechanism?

(a) Arndt-Eistert synthesis
(b) Friedlaender synthesis
(c) Williamson synthesis
(d) Coumarin synthesis

Q2. Jharkhand has announced its first tiger safari in the Barwadih Western Forest Range; it is a part of which tiger reserve?

(a) Bandipur Tiger Reserve
(b) Sanjay Gandhi Tiger Reserve
(c) Palamau Tiger Reserve
(d) Pench Tiger Reserve

Q3. Hills of Kaimur, the easternmost part of the Vindhya Range, which begins near Jabalpur districts of Madhya Pradesh, ends near which district of Bihar?

(a) Patna
(b) Nawada
(c) Rohtas
(d) Munger

Q4. Which of the following is true about the original jurisdiction of the Supreme Court of India?

(a) It reviews the decisions of tribunals
(b) It grants pardons to criminals
(c) It settles disputes between the Union and states
(d) It deals with criminal appeals only

Q5. What is the disintegration of rocks into smaller fragments without any change in their chemical composition called?

(a) Exfoliation
(b) Block disintegration
(c) Mechanical weathering
(d) Frost Action

Q6. Which of the following is a major challenge for Indian cities due to rapid urbanisation?

(a) Improved access to green spaces
(b) Decline in urban unemployment
(c) Pressure on infrastructure and services
(d) Enhanced walkability in all city zones

Q7. The United Kingdom has signed an agreement to hand over Chagos Island to which of the following countries?

(a) Indonesia
(b) Mauritius
(c) Malaysia
(d) Madagascar

Q8. In which of the following cities was the 2nd edition of Khelo India Para Games 2025 held in March 2025?

(a) Hyderabad
(b) Bengaluru
(c) Mumbai
(d) New Delhi

Q9. What was the main characteristic of the Indian economy at the time of independence in 1947?

(a) High per capita income
(b) Self-sufficiency in food grains
(c) Dominance of the industrial sector
(d) Predominantly agrarian with low productivity

Q10. Which of these is a distinct feature of a statutory corporation in India?

(a) It is fully owned by private shareholders and receives no government funding.
(b) It has no legal existence separate from the government.
(c) It is established by an Act, has a separate legal identity, and can sue or be sued.
(d) Its employees are considered government civil servants under the usual rules.

Q11. Which of the following methods is used to rename a file or folder in MS Windows?

(a) Double-click the file to open it
(b) Right-click the file and select 'Delete'
(c) Press 'Ctrl + R'
(d) Right-click the file and select 'Rename'

Q12. What is the official name of Kerala's 2025 healthcare reform initiative?

(a) Better Health Blueprint
(b) Care4Kerala Mission
(c) Comprehensive Health Kerala
(d) Kerala Health System Improvement Programme

Q13. Who introduced the Bharatiya Vayuyan Adhiniyam that was passed in the Rajya Sabha in December 2024?

(a) Ram Mohan Naidu
(b) Hardeep Singh Puri
(c) Jyotiraditya M Scindia
(d) Kiren Rijiju

Q14. As of April 2025, what amount of monthly pension is given to players under Pandit Deendayal Upadhyay National Welfare Fund for Sportspersons (PDUNWFS) scheme?

(a) Rs. 3,000
(b) Rs. 5,000
(c) Rs. 4,000
(d) Rs. 6,000

Q15. Which of the following factors most influences the uneven distribution of population in India?

(a) Language diversity
(b) Trade union policies
(c) National income
(d) Soil fertility and water availability

YourMockTest.com — Free Study Material

Q16. Which of the following combinations of shortcut keys and functions is correctly matched?

(a) Ctrl + Tab – Copies the selected text
(b) Ctrl + C – Copies content to the clipboard
(c) Ctrl + F – Switches between open tabs
(d) Ctrl + V – Finds a specific word in the document

Q17. Which Indian judgment laid down the concept of 'Basic Structure' of the Constitution?

(a) Golaknath v. State of Punjab
(b) Kesavananda Bharati v. State of Kerala
(c) Minerva Mills v. Union of India
(d) Maneka Gandhi v. Union of India

Q18. Which law states that a compound always contains the same elements in the same proportion by mass?

(a) Law of Conservation of Mass
(b) Law of Definite Proportions
(c) Law of Multiple Proportions
(d) Avogadro's Law

Q19. Which of the following Indian players won ICC Men's Player of the Month for March 2025?

(a) Rohit Sharma
(b) KL Rahul
(c) Virat Kohli
(d) Shreyas Iyer

Q20. Which Indian institution, on 15 May 2025, collaborated with Japan's Sharp Semiconductor Innovation Corporation (SSIC) to successfully test Beyond 5G (B5G) and 6G wireless technologies?

(a) Indian Institute of Technology Hyderabad (IIT-H)
(b) Indian Institute of Technology Madras (IIT-M)
(c) Indian Institute of Technology Bombay (IIT-B)
(d) Indian Institute of Technology Delhi (IIT-D)

Q21. Who among the following joined the Planning Commission as its Vice-Chairman in March 1950?

(a) Jagjeevan Ram
(b) Shyama Prasad Mukherjee
(c) John Mathai
(d) Gulzarilal Nanda

Q22. Which Indian athlete broke the women's shot put indoor national record at the Mountain West Indoor Track and Field Championships 2025?

(a) Navjeet Kaur Dhillon
(b) Kamalpreet Kaur
(c) Manpreet Kaur
(d) Krishna Jayasankar

Q23. Which Indian Army unit represented India in VINBAX, conducted in November 2024?

(a) Gorkha Rifles
(b) Corps of Engineers
(c) Mechanised Infantry Regiment
(d) Parachute Regiment

Q24. Which tribal revolt in 1831-32 was led by Buddho Bhagat and targeted exploitative landlords and British officials?

(a) Kol Revolt
(b) Bhil Revolt
(c) Munda Revolt
(d) Santhal Revolt

YourMockTest.com — Free Study Material

Q25. Which renewable energy source has the largest installed capacity in India as of the year 2025?

(a) Solar energy
(b) Hydro power
(c) Wind energy
(d) Geothermal energy

Q26. Who among the following is eligible to be appointed as the Chairperson of the Lokpal, as per the Lokpal and Lokayuktas Act, 2013?

(a) A retired Cabinet Secretary of India
(b) A sitting judge of a High Court
(c) A current Member of Parliament
(d) A former Judge of the Supreme Court

Q27. In which of the following years was the Central Goods and Services Tax Act enacted?

(a) 2007
(b) 2013
(c) 2009
(d) 2017

Q28. Which river from the following originates from the Amarkantak Plateau?

(a) Mahanadi
(b) Ganga
(c) Narmada
(d) Tapti

Q29. What is the main objective of the Khelo India scheme?

(a) Strengthen sports culture and identify young talent
(b) Promote yoga in schools and colleges
(c) Build sport organisations and stadiums in metro cities
(d) Encourage traditional games and sports

Q30. In which year was the first cases of the disease now known as acquired immunodeficiency syndrome (AIDS) identified?

(a) 1988
(b) 1981
(c) 1992
(d) 1977

Q31. The Pallava kings adopted which title to reflect that their rule was guided by the principles of the Dharmashastras?

(a) Maharajadhiraja
(b) Chakravarti
(c) Dharma-Maharaja
(d) Rajadhiraja

Q32. What is the tenure duration of Justice BR Gavai as the Chief Justice of India?

(a) 1 year
(b) 6 months
(c) 2 years
(d) 3 years

Q33. The 91st Amendment of the Indian Constitution was enacted in which year?

(a) 2000
(b) 1989
(c) 1978
(d) 2003

YourMockTest.com — Free Study Material

Q34. Which Schedule of the Constitution deals with the administration of Scheduled Areas in states, other than the Northeast?

(a) Ninth Schedule
(b) Seventh Schedule
(c) Fifth Schedule
(d) Sixth Schedule

Q35. What does globalisation mainly mean in economic terms?

(a) Closing borders
(b) Connecting to the world economy
(c) Limiting trade
(d) Stopping foreign investment

Q36. The five village committees (variyams) such as neernilai variyam and needhi variyam were a unique administrative feature of which of the following dynasties?

(a) Pandyas
(b) Guptas
(c) Satavahanas
(d) Mauryas

Q37. Where and when is the final in-flight testing of the Kaveri Derivative Engine (KDE) scheduled, as part of its certification process?

(a) India, early 2025
(b) Russia, late 2025
(c) China, mid-2026
(d) France, late 2025

Q38. Technological innovation was key to the success of the Green Revolution. The success of HYV seeds in India was contingent on which critical input?

(a) Forest cover
(b) Hand tools
(c) Chemical fertilisers
(d) Organic compost

Q39. Which country took over the Chairmanship of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) on 1 January 2025?

(a) Canada
(b) Australia
(c) Japan
(d) New Zealand

Q40. Who was the Chief Architect behind the integration of over 560 princely states into the Indian Union?

(a) Sardar Vallabhbhai Patel
(b) Lord Mountbatten
(c) Jawaharlal Nehru
(d) Rajendra Prasad

MATHEMATICS

Q41. The H.C.F. and the L.C.M. of two numbers are 4 and 208 respectively. If one of the numbers is 52, find the other one.

(a) 45
(b) 55
(c) 16
(d) 8

YourMockTest.com — Free Study Material

Q42. Find the perimeter of a rectangular plot whose length is 68 m and area is 1904 m².

(a) 192 m
(b) 165 m
(c) 186 m
(d) 174 m

Q43. Find the simple interest (in Rs.) on Rs. 3,000 as a sum borrowed at 8% per year rate of interest for 6 years.

(a) 1,440
(b) 1,480
(c) 1,380
(d) 1,400

Q44. The selling price of 25 books is equal to the cost price of 37 books. Find the loss or gain percentage.

(a) 48% loss
(b) 100/12% loss
(c) 100/12% gain
(d) 48% gain

Q45. A number when increased by 80% gives 2880. The number is:

(a) 1600
(b) 800
(c) 3200
(d) 4800

Q46. The sum of five numbers is 655. The average of the first two numbers is 80 and the third number is 105. Find the average of the remaining two numbers.

(a) 185
(b) 196
(c) 186
(d) 195

Q47. David bought some sharpeners at the rate of Rs. 150 a dozen. He sold them for Rs. 43 each. His profit percentage is _____%.

(a) 242
(b) 244
(c) 248
(d) 246

Q48. Simplify: $x(3x - 8) + 3(x^2 - 5) + 11$

(a) $-6x^2 - 8x - 4$
(b) 6x2 -8x +4
(c) -6x2 -8x +4
(d) 6x2 -8x -4

Q49. Two times the present age of P exceeds the present age of Q by 15 years. After 9 years, twice Q's age will be 14 years less than twice P's age at that time. What is the present age (in years) of Q?

(a) 3
(b) 8
(c) 1
(d) 6

Q50. Which of the following ratios is the greatest?

(a) 48 : 90
(b) 46 : 51
(c) 22 : 54

YourMockTest.com — Free Study Material

(d) 42 : 68

Q51. Anshuman and Kunal together invested Rs. 70,400 in a business. At the end of the year, out of a total profit of Rs. 12,000, Kunal's share was Rs. 1,800. What was the difference between their investments?

(a) Rs. 48,614
(b) Rs. 50,554
(c) Rs. 49,280
(d) Rs. 47,329

Q52. The LCM of the numbers 2.9 and 0.031 is:

(a) 899
(b) 8.99
(c) 0.899
(d) 89.9

Q53. The number of prime numbers lying between 397 and 407, both included, is:

(a) 1
(b) 4
(c) 6
(d) 2

Q54. In an election between two candidates 96 % of the registered voters cast their vote and 10 % of the votes polled were found invalid. Winning candidate got 57 % of the valid votes and won the election by a margin of 378 votes. How many voters were registered?

(a) 3123
(b) 3122
(c) 21872
(d) 3125

Q55. A piece of furniture is marked at 35% above its cost price. The shopkeeper gives a discount of 18% on the marked price and still earns Rs. 1,498 profit. What is the cost price of the furniture?

(a) Rs. 16,000
(b) Rs. 12,000
(c) Rs. 14,000
(d) Rs. 15,000

Q56. The simple interest on a certain sum for 81/2 years at the rate of 3.2% per annum is Rs. 2,550. What will be the amount payable on the same sum at the rate of 9.6% per annum simple interest in 54/5 years?

(a) Rs. 14,613
(b) Rs. 14,609
(c) Rs. 14,583
(d) Rs. 14,595

Q57. Evaluate 24^2.

(a) 576
(b) 546
(c) 626
(d) 536

Q58. Ishaan and Meghna have to travel from Delhi to Kanpur in their respective cars. Ishaan is driving at 147 km/hr while Meghna is driving at 42 km/hr. Find the time taken by Meghna to reach Kanpur if Ishaan takes 8 hours.

(a) 32 hours
(b) 19 hours
(c) 33 hours
(d) 28 hours

YourMockTest.com — Free Study Material

Q59. The marked price of a vehicle is Rs. 6,48,200. It is sold after allowing three successive discounts of 6%, 5% and 4%. Find its selling price. (Rounded off to nearest rupee)

(a) Rs. 5,55,689
(b) Rs. 5,70,650
(c) Rs. 5,60,789
(d) Rs. 5,48,600

Q60. The exterior angle of a regular polygon is one-seventh of its interior angle. How many sides does the polygon have?

(a) 18
(b) 24
(c) 12
(d) 16

Q61. The product of two positive numbers is 2645. If the first number is five times the second number, then the sum of the two numbers is:

(a) 138
(b) 149
(c) 146
(d) 155

Q62. The average runs scored by a batsman in 23 matches is 43. In the next 10 matches, the batsman scored an average of 15 runs. Find his average runs scored (rounded off to two decimal places) in all the 33 matches.

(a) 33.52
(b) 35.52
(c) 34.52
(d) 36.52

Q63. The number 938315 is divisible by which of the following?

(a) 12
(b) 13
(c) 5
(d) 9

Q64. An amount of Rs. 785 is divided among three persons in the ratio of 19 : 3 : 18. The difference between the largest and the smallest shares (in Rs.) in the distribution is:

(a) 387
(b) 315
(c) 314
(d) 369

Q65. Aarohi has to reach Lucknow which is 907 km away in 14 hours. His starting speed for 5 hours was 32 km/hr. For the next 81 km his speed was 27 km/hr. By what speed he must travel now so as to reach Lucknow in the decided time of 14 hours?

(a) 108 km/hr
(b) 117 km/hr
(c) 107 km/hr
(d) 111 km/hr

Q66. A can do a work in 11 days and B can do the same work in 24 days. If they work on it together for 2 days, then what fraction of the work is left?

(a) 99/132
(b) 107/132
(c) 97/132
(d) 103/132

YourMockTest.com — Free Study Material

Q67. Find the circumference (in m) of the largest circle that can be drawn completely inside a rectangle with sides 196 m and 271 m. (Take π = 22/7)

(a) 613
(b) 616
(c) 608
(d) 614

Q68. The value of √400+√0.0121-√7.84 is _____

(a) 17.31
(b) 4.24
(c) 2.92
(d) 15.32

Q69. Anjani can do a certain piece of work in 12 days. Anjani and Khushbu can together do the same work in 9 days, and Anjani, Khushbu and Sushmita can do the same work together in 8 days. In how many days can Anjani and Sushmita do the same work together?

(a) 72/7
(b) 70/7
(c) 80/8
(d) 82/9

Q70. If 6x = cosec θ and 6/x=cot θ, then find the value of $18(x^2-1/(x^2))$

(a) √3/2
(b) -1/2
(c) 1/2
(d) 1/3

GENERAL INTELLIGENCE AND REASONING

Q71. In a certain code language, 'RACK' is coded as '3192' and 'JACK' is coded as '1326'. What is the code for 'J' in the given code language?

(a) 6
(b) 1
(c) 3
(d) 2

Q72. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements.

Statements:

No watch is a bow.

No bow is a tie.

Conclusions:

(I) No watch is a tie.

(II) No bow is a watch.

(a) Both conclusions (I) and (II) follow.
(b) Only conclusion (I) follows
(c) Neither conclusion (I) nor (II) follows.
(d) Only conclusion (II) follows.

Q73. What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

17 ÷ 3 + 49 × 7 − 13 = ?

(a) 41

YourMockTest.com — Free Study Material

(b) 57
(c) 45
(d) 43

Q74. What should come in place of the question mark (?) in the given series?

691 692 690 691 689 690 688 ?

(a) 688
(b) 689
(c) 687
(d) 690

Q75. In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the pair in which the numbers are related in the same way as are the numbers of the following pairs.

(Note: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g., 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

25, 100

21, 84

(a) 28, 102
(b) 40, 180
(c) 32, 128
(d) 35, 120

Q76. In a certain code language,

A $ B means ‘A is the daughter of B’

A + B means ‘A is the brother of B’

A @ B means ‘A is the wife of B’

A ÷ B means ‘A is the father of B’

Based on the above, how is E related to N if ‘E $ F @ G ÷ M + N’?

(a) Mother
(b) Daughter
(c) Wife
(d) Sister

Q77. Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) NQL
(b) EHC
(c) UXS
(d) LKO

Q78. Manoj starts from Point A and drives 9 km towards north. He then takes a right turn, drives 6 km, turns right and drives 3 km. He then takes a left turn and drives 5 km. He takes a final right turn, drives 6 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)

(a) 9 km towards south
(b) 9 km towards west
(c) 11 km towards east
(d) 11 km towards west

YourMockTest.com – Free Study Material

Q79. In a certain code language, 'mud depth urn' is coded as 'qz bd aa' and 'rain dog mud' is coded as 'bd gl kn'. How is 'mud' coded in the given code language?

(a) qz
(b) aa
(c) gl
(d) bd

Q80. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All stars are rectangles.

All cones are rectangles.

Conclusions:

(I): Some stars are cones.

(II): Some rectangles are cones.

(a) Both conclusions (I) and (II) follow.
(b) Only conclusion (II) follows.
(c) Neither conclusion (I) nor (II) follows.
(d) Only conclusion (I) follows.

Q81. Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) ZUX
(b) VQU
(c) XSV
(d) QLO

Q82. Seven people A, B, C, D, E, F and G are sitting in a row, facing the north. No one sits to the right of G. Only four people sit between E and F. C sits fifth from the right end of the row. B sits to the immediate right of A but left of E. How many people sit to the right of D?

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

Q83. Six friends, B, C, D, E, F and N, are sitting in a straight line, facing north. No one sits to the right of D. Only two people sit between D and B. Only one person sits between E and C. F sits third to the right of E. How many people sit between N and F?

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

Q84. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

WTX SPT OLP KHL ?

(a) GCH
(b) GDI
(c) GCI
(d) GDH

YourMockTest.com — Free Study Material

Q85. Refer to the following number and symbol series and answer the question that follows. All numbers are single-digit. Counting to be done from left to right.

(Left) 6 @ 8 $ 7 1 * 2 + £ 5 & 3 Ω 9 # % 4 (Right)

How many such symbols are there each of which is immediately preceded by a number and also immediately followed by another symbol?

(a) 2
(b) 4
(c) 3
(d) 1

Q86. Pratik starts from Point A and drives 10 km towards the north. He then takes a right turn and drives 8 km, then turns right and drives 17 km. He then takes a right turn and drives 10 km. He takes a final right turn, drives 7 km and stops at Point P. How far (shortest distance) and in which direction should he drive in order to reach Point A again? (All turns are 90-degree turns only unless specified.)

(a) 2 km to the west
(b) 2 km to the east
(c) 3 km to the east
(d) 3 km to the west

Q87. What should come in place of the question mark (?) in the given series?

14 26 49 81 124 ?

(a) 178
(b) 167
(c) 187
(d) 176

Q88. Each of the digits in the number 1593486 is arranged in the ascending order from left to right. What will be the sum of the digits that are third from the left and third from the right in the new number thus formed?

(a) 12
(b) 10
(c) 8
(d) 9

Q89. WFJU is related to YILX in a certain way based on the English alphabetical order. In the same way, ERRG is related to GUTJ. To which of the given options is KAXP related, following the same logic?

(a) MZSD
(b) MXZS
(c) MDZS
(d) MDSZ

Q90. What should come in place of the question mark (?) in the given series?

35 44 55 68 83 ?

(a) 116
(b) 122
(c) 100
(d) 128

Q91. In the following triads, each group of letters is related to the subsequent one following a certain logic. Select from the given options, the one which follows the same logic.

SOLD - OSLD - DOSL

BAKE - ABKE - EABK

(a) CURD - CRUD - DRUC
(b) CAME - ACME - AMEC
(c) MILK - IMLK - KILM

YourMockTest.com - Free Study Material

(d) NEAM - ENAM - MENA

Q92. 90 people are standing in a row facing north. Mr. Leu is 16th from the right end, while Mr. Sanga is 39th from the left end. How many people are there between Mr. Leu and Mr. Sanga?

(a) 37
(b) 34
(c) 32
(d) 35

Q93. Each of the digits in the number 7812345 is arranged in ascending order from left to right. The position(s) of how many digits will remain unchanged as compared to that in the original number?

(a) None
(b) Two
(c) One
(d) Three

Q94. 43 people are standing in a row facing north. Kumar is 29th from the left end while Mohana is 9th from the right end. How many people are there between Kumar and Mohana?

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

Q95. Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only. (Note: All numbers are single digit numbers only.)

(Left) 5 @ 1 £ 3 * 4 7 + $ 9 % 6 2 & 8 Ω # (Right)

If all the number are dropped from the series, which of the following will be sixth from the right?

(a) +
(b) @
(c) *
(d) $

Q96. Seven boxes, A, B, C, D, M, N and O, are kept one over the other but not necessarily in the same order.

Only three boxes are kept below D. Only two boxes are kept between D and O. Only A is kept above M. C is kept at some place below B and at some place above N. Which box is kept at the second position from the bottom?

(a) O
(b) A
(c) D
(d) N

Q97. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', then what will come in place of the question mark (?) in the following equation?

18 B 3 D 112 A 16 C 6 = ?

(a) 53
(b) 57
(c) 49
(d) 45

Q98. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

CHR HMW MRB RWG ?

(a) WLB
(b) WKL
(c) WLK
(d) WBL

YourMockTest.com — Free Study Material

Q99. FHNR is related to MMSY in a certain way based on the English alphabetical order. In the same way, HBHT is related to OGMA. To which of the given options is CQWO related, following the same logic?

(a) JVVB
(b) JVBV
(c) BVVJ
(d) JBVV

Q100. Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) SMHD
(b) BWQM
(c) QLFB
(d) GBVR

ANSWER KEY

1	c	2	c	3	c	4	c	5	c	6	c	7	b	8	d	9	d	10	c
11	d	12	d	13	a	14	b	15	d	16	b	17	b	18	b	19	d	20	a
21	d	22	d	23	b	24	a	25	a	26	d	27	d	28	c	29	a	30	b
31	c	32	b	33	d	34	c	35	b	36	a	37	b	38	c	39	b	40	a
41	c	42	a	43	a	44	d	45	a	46	d	47	b	48	d	49	c	50	b
51	c	52	d	53	d	54	d	55	c	56	d	57	a	58	d	59	a	60	d
61	a	62	c	63	c	64	c	65	d	66	c	67	b	68	a	69	a	70	c
71	a	72	d	73	b	74	b	75	c	76	d	77	d	78	d	79	d	80	b
81	b	82	d	83	d	84	d	85	a	86	b	87	d	88	b	89	c	90	c
91	d	92	d	93	a	94	d	95	a	96	d	97	a	98	d	99	b	100	a

SOLUTIONS

Q1. Answer: (c) Williamson synthesis

The correct answer is Williamson synthesis.

Key Points

• The Williamson synthesis is a reaction in which an alkoxide ion reacts with a primary alkyl halide via an SN2 mechanism to form an ether. This method is widely used in organic chemistry for ether synthesis.

• In this reaction, the alkoxide ion (R-O^-) acts as a nucleophile and attacks the electrophilic carbon atom of the primary alkyl halide (R'-X), resulting in the formation of an ether (R-O-R').

• This reaction follows a bimolecular nucleophilic substitution (SN2) mechanism, which is characterized by a single-step process where the nucleophile attacks the substrate and displaces the leaving group simultaneously.

• The reaction is most efficient when the alkyl halide is primary because primary alkyl halides are less sterically hindered, making it easier for the nucleophile to attack.

• Secondary and tertiary alkyl halides are less suitable for Williamson synthesis due to steric hindrance and the possibility of side reactions such as elimination.

• The choice of solvent plays a crucial role in the reaction. Polar aprotic solvents like dimethyl sulfoxide (DMSO) or acetone are often used to enhance the nucleophilicity of the alkoxide ion.

Additional Information

• Mechanism of SN2 Reaction:

• In an SN2 reaction, the nucleophile attacks the carbon atom attached to the leaving group from the opposite side, leading to the displacement of the leaving group.

• The reaction results in an inversion of configuration at the carbon center, often referred to as a "backside attack."

• SN2 reactions are highly sensitive to steric hindrance, which is why they are most effective with primary alkyl halides.

• Role of Alkoxide Ions:

• Alkoxide ions (R-O^-) are strong nucleophiles due to their negatively charged oxygen atom, which has a high electron density.

• They are typically generated by reacting alcohols with a strong base like sodium hydride (NaH) or potassium hydroxide (KOH).

• Examples include sodium ethoxide (C2H5ONa) and potassium tert-butoxide (t-BuOK).

• Applications of Williamson Synthesis:

• This reaction is widely used in industrial and laboratory settings to synthesize simple and mixed ethers.

• For example, diethyl ether (CH3CH2-O-CH2CH3) can be synthesized by reacting sodium ethoxide with ethyl bromide.

• The reaction is also used to synthesize complex aromatic ethers, such as anisole (C6H5-O-CH3).

• Comparison with Other Options:

• Arndt-Eistert synthesis: This is a method used to elongate carboxylic acids by one carbon atom, involving diazomethane. It has no relevance to ether formation.

• Friedlaender synthesis: This is a reaction for synthesizing quinoline derivatives, not ethers.

• Coumarin synthesis: This is a method for synthesizing coumarins, a class of organic compounds with a benzopyrone structure, unrelated to ether formation.

Important Points

• Primary Alkyl Halides: These are compounds where a halogen atom is attached to a carbon atom bonded to only one other carbon atom. They are ideal for SN2 reactions due to minimal steric hindrance.

• Leaving Groups: The leaving group (e.g., halide ions like Cl^-, Br^-, I^-) should be stable and capable of dissociating easily to facilitate the reaction.

• Side Reactions: With secondary or tertiary alkyl halides, elimination reactions (E2 mechanism) can compete with substitution, leading to by-products.

• Environmental Considerations: Some alkyl halides and solvents used in Williamson synthesis can be toxic or harmful to the environment, necessitating proper handling and disposal.

Q2. Answer: (c) Palamau Tiger Reserve

The correct answer is Palamau Tiger Reserve.

Key Points

• Jharkhand has announced its first-ever tiger safari in the Barwadih Western Forest Range, which is a part of the Palamau Tiger Reserve.

• The Palamau Tiger Reserve is located in the Latehar district of Jharkhand and is one of the first nine tiger reserves established in India under the Project Tiger initiative in 1973.

• The reserve is a major contributor to wildlife conservation in India and is known for its rich biodiversity, including species like tigers, elephants, leopards, and sloth bears.

• Palamau Tiger Reserve is spread across an area of approximately 1,129.93 sq. km, with a core area of 414.93 sq. km and a buffer area of 715 sq. km.

• The establishment of the tiger safari in this reserve aims to boost eco-tourism and raise awareness about tiger conservation.

Additional Information

• Palamau Tiger Reserve:

• The Palamau Tiger Reserve is part of the Betla National Park, which is a popular tourist destination known for its scenic beauty and wildlife.

• It is located in the Chota Nagpur Plateau and is characterized by dry deciduous forests, sal trees, and bamboo groves.

• It was the first tiger reserve in India to introduce tiger census using pugmark tracking.

• The reserve faces conservation challenges, including the threat of poaching, human-wildlife conflict, and habitat degradation.

• Project Tiger:

• Launched in 1973, Project Tiger is a flagship conservation program of the Indian government aimed at protecting tigers and their habitats.

• The project is administered by the National Tiger Conservation Authority (NTCA).

• India is home to approximately 70% of the world’s tiger population, and the project has been instrumental in increasing the tiger population in the country.

• Other Tiger Reserves in India:

• Bandipur Tiger Reserve: Located in Karnataka, it is part of the Niligiri Biosphere Reserve and is known for its diverse flora and fauna.

• Sanjay Gandhi Tiger Reserve: Situated in Madhya Pradesh and Chhattisgarh, it is known for its dense forests and tiger population.

• Pench Tiger Reserve: Spread across Maharashtra and Madhya Pradesh, it inspired Rudyard Kipling’s "The Jungle Book."

YourMockTest.com — Free Study Material

• Importance of Tiger Reserves:

• Tiger reserves play a vital role in conserving India’s biodiversity and maintaining ecological balance.

• They contribute to eco-tourism, providing economic benefits to the local communities.

• Tigers are a keystone species, and their conservation ensures the protection of other flora and fauna in their habitat.

Important Points

• Eco-Tourism and its Benefits:

• The establishment of tiger safaris and reserves promotes eco-tourism, which helps in generating revenue and employment for the local population.

• It also raises awareness about the importance of wildlife conservation and encourages sustainable practices.

• Challenges in Tiger Conservation:

• The major threats include poaching, habitat loss, and human encroachment.

• Climate change and forest degradation also pose significant challenges to tiger populations.

• Efforts like relocation of villages from core areas and stricter anti-poaching measures are being implemented to address these challenges.

Q3. Answer: (c) Rohtas

The correct answer is Rohtas.

Key Points

• The Kaimur Hills, forming the easternmost extension of the Vindhya Range, stretch from near Jabalpur in Madhya Pradesh and conclude in the Rohtas district of Bihar.

• The Vindhya Range is one of the oldest mountain ranges in India, known for its rich geological and geographical significance.

• The Kaimur Hills are a prominent plateau region, often considered a natural extension of the Vindhyan ranges.

• In the Rohtas district, the Kaimur Hills are home to several historical and natural sites, including the Rohtasgarh Fort, cascading waterfalls, and lush vegetation.

• The range is significant for its rich reserves of limestone and other minerals, as well as for being a hotspot for biodiversity.

Additional Information

• Kaimur Hills:

• The Kaimur Hills form a part of the Vindhyan escarpment, which is geologically ancient and primarily composed of sandstone and quartzite.

• These hills are spread across the Indian states of Madhya Pradesh, Uttar Pradesh, and Bihar, with their easternmost tip in the Rohtas district.

• The Kaimur range is known for its natural beauty, including waterfalls like Karkat Waterfall and wildlife sanctuaries like the Kaimur Wildlife Sanctuary.

• Vindhya Range:

• The Vindhya Range runs parallel to the Narmada River in central India and holds immense geographical and cultural importance.

• It serves as a natural divide between northern and southern India, influencing climatic and vegetation patterns.

• Rich in minerals like limestone, sandstone, and bauxite, this range contributes significantly to India's economy.

• Rohtas District:

• Rohtas is a district in the state of Bihar, historically known for the Rohtasgarh Fort, a site of archaeological and historical importance.

• The district is part of the Kaimur plateau and is known for its fertile soil, making it an important agricultural region.

• Rohtas is also home to significant rivers like the Sone River, a tributary of the Ganges.

• Historical Significance:

• The Kaimur region, including Rohtas, has been a center of cultural and historical activity, with evidence of human habitation dating back to ancient times.

• Important historical landmarks include ancient rock paintings, inscriptions, and temples.

• Geological Importance:

• The Kaimur Hills are part of the Vindhyan Supergroup, which is significant for studying the Earth's early history, including paleoclimate and tectonic activity.

• They also contain fossilized remains of ancient flora and fauna, contributing to paleontological research.

YourMockTest.com — Free Study Material

Q4. Answer: (c) It settles disputes between the Union and states

The correct answer is It settles disputes between the Union and states.

Key Points

• The original jurisdiction of the Supreme Court of India is outlined in Article 131 of the Constitution of India.

• Under this jurisdiction, the Supreme Court has the authority to settle disputes between:

• The Government of India and one or more states.

• The Government of India and any state(s) on one side and one or more states on the other side.

• Two or more states.

• This jurisdiction ensures that disputes of a federal nature, such as disagreements over boundaries, financial matters, or other constitutional issues, are resolved impartially by the apex court.

• The Supreme Court's original jurisdiction is exclusive, meaning no other court in the country can decide on such disputes.

• However, this jurisdiction does not apply if the dispute arises out of a treaty, agreement, or contract entered into before the commencement of the Constitution.

Additional Information

• Other Jurisdictions of the Supreme Court:

• Appellate Jurisdiction: The Supreme Court hears appeals against judgments of High Courts in civil, criminal, or constitutional cases under Articles 132, 133, and 134.

• Advisory Jurisdiction: Under Article 143, the President of India can seek the Supreme Court's opinion on legal or constitutional matters.

• Writ Jurisdiction: Under Article 32, the Supreme Court can issue writs for the enforcement of fundamental rights.

• Incorrect Options Explained:

• Option 1: Reviewing decisions of tribunals falls under the appellate and supervisory jurisdiction of the Supreme Court, not its original jurisdiction. Hence, this statement is incorrect.

• Option 2: Granting pardons to criminals is a power vested in the President of India under Article 72, not the Supreme Court. Hence, this statement is incorrect.

• Option 4: The Supreme Court does deal with criminal appeals, but this falls under its appellate jurisdiction, not its original jurisdiction. Hence, this statement is incorrect.

• Important Articles Related to Supreme Court's Jurisdiction:

• Article 124: Establishes the Supreme Court of India.

• Article 131: Defines the original jurisdiction of the Supreme Court.

• Article 132-134: Covers appellate jurisdiction.

• Article 143: Deals with the advisory jurisdiction of the Supreme Court.

• Examples of Original Jurisdiction Cases:

• Kaveri River Dispute: A dispute between Karnataka and Tamil Nadu over water sharing.

• Berubari Case: A dispute regarding the division of territory between India and Pakistan after Independence.

Q5. Answer: (c) Mechanical weathering

The correct answer is Mechanical Weathering.

Key Points

• Mechanical weathering refers to the physical disintegration of rocks into smaller fragments without any alteration in their chemical composition.

• It occurs due to external physical forces such as temperature changes, abrasion, pressure, frost action, and biological activities.

• Some common processes of mechanical weathering include frost wedging, exfoliation, and thermal expansion.

• Unlike chemical weathering, mechanical weathering does not involve chemical reactions or the formation of new minerals.

• This type of weathering is prevalent in areas with extreme temperature variations, such as deserts, polar regions, and high-altitude zones.

Additional Information

• Exfoliation:

• Exfoliation is a process of mechanical weathering where successive layers of rock peel off or crack due to temperature changes or pressure release.

• This phenomenon is common in areas with large temperature fluctuations, such as deserts.

• Block Disintegration:

• Block disintegration occurs when large blocks of rock break apart due to repeated freezing and thawing cycles or pressure changes.

YourMockTest.com — Free Study Material

• It is prominent in cold climates where water enters cracks in rocks, freezes, and expands, causing the rock to split.
• Frost Action:
• Frost action is a type of mechanical weathering caused by the freezing and thawing of water in rock cracks.
• When water freezes, it expands by approximately 9%, exerting pressure on the rock and causing it to fracture.
• This process is common in polar regions and high-altitude areas.
• Thermal Expansion:
• Thermal expansion occurs when rocks experience temperature changes, causing the minerals within the rock to expand and contract at different rates.
• This leads to stress and eventual disintegration of the rock surface.
• Biological Weathering:
• Although not purely mechanical, biological weathering can contribute to physical disintegration. Roots of plants penetrate rock cracks, exerting pressure and causing fragmentation.
• Animals also contribute by burrowing into rocks and soil, aiding in their disintegration.

Important Points

• Difference Between Mechanical and Chemical Weathering:
• Mechanical weathering involves physical processes, while chemical weathering involves chemical reactions.
• Mechanical weathering does not change the chemical composition of rocks; chemical weathering forms new minerals.
• Examples of chemical weathering include oxidation, hydrolysis, and carbonation.
• Applications of Mechanical Weathering:
• It plays a crucial role in soil formation by breaking down rocks into smaller particles.
• Mechanical weathering contributes to shaping landscapes, including the formation of valleys, cliffs, and plains.
• It aids in the natural recycling of minerals and nutrients in ecosystems.
• Significance in Geology:
• Understanding mechanical weathering is essential for studying geological processes like erosion and sedimentation.
• It helps in predicting the stability and durability of rock formations in construction and mining industries.

Q6. Answer: (c) Pressure on infrastructure and services

The correct answer is Pressure on infrastructure and services.

Key Points

• Rapid urbanisation in India has led to a significant pressure on infrastructure and services, including transportation, housing, water supply, sanitation, waste management, and energy.
• Indian cities often face challenges like traffic congestion, inadequate housing, and unreliable water and electricity supply due to the increasing population density.
• The existing urban infrastructure is unable to meet the demands of the growing urban population, leading to poor living conditions in many areas.
• Urbanisation has also caused an increase in environmental issues such as air and water pollution, waste accumulation, and loss of green spaces.
• Government schemes like the Smart Cities Mission and AMRUT (Atal Mission for Rejuvenation and Urban Transformation) have been introduced to address these challenges but require significant efforts to achieve sustainable urban development.

Additional Information

• Urbanisation in India:
• India is experiencing rapid urbanisation, with the urban population projected to reach 600 million by 2031 (as per the Census of India).
• The growth of urban areas is driven by factors such as migration from rural areas, economic opportunities, and industrialisation.
• The top cities like Mumbai, Delhi, Bengaluru, and Kolkata are among the most affected due to population growth and the resultant strain on infrastructure.
• Challenges of Urbanisation:
• Traffic congestion: Increased vehicle ownership and lack of public transportation lead to overcrowded roads.
• Housing shortages: Many people live in informal settlements or slums due to unaffordable housing.
• Environmental degradation: Loss of green spaces, water bodies, and increased pollution levels.
• Social inequality: Urbanisation exacerbates disparities in access to resources and services.
• Government Initiatives:
• Smart Cities Mission: Launched in 2015, aimed at developing 100 smart cities with improved infrastructure and technology-driven solutions.

• AMRUT: Focuses on providing basic services such as water supply, sewerage, and urban transport to improve the quality of life in urban areas.
• PMAY (Pradhan Mantri Awas Yojana): Aimed at providing affordable housing to the urban poor.
• Pressure on Urban Resources:
• Increased demand for water, electricity, and public transportation due to population growth.
• Inadequate waste management systems lead to accumulation of solid waste and adverse health impacts.
• Overcrowded educational and healthcare facilities make it difficult to cater to all sections of society.

Important Points

• Environmental Impact:
• Rapid urbanisation leads to the depletion of natural resources such as water bodies, forests, and agricultural land.
• Urban heat islands are created due to the replacement of natural land cover with concrete and asphalt.
• Economic Opportunities:
• Urban areas contribute 60-65% of India's GDP, making them economic hubs despite challenges.
• They offer employment opportunities in sectors such as IT, manufacturing, and services.
• Future Solutions:
• Adopting sustainable urban planning practices, including green infrastructure and renewable energy.
• Enhanced public transportation systems to reduce dependency on private vehicles.
• Implementation of smart technology for efficient resource management.

Q7. Answer: (b) Mauritius

The correct answer is Mauritius.

Key Points

• The Chagos Archipelago, a group of islands in the Indian Ocean, was a British overseas territory known as the British Indian Ocean Territory (BIOT).
• The United Nations General Assembly (UNGA) passed a resolution in 2019 urging the United Kingdom to return the Chagos Archipelago to Mauritius. This resolution was supported by the International Court of Justice (ICJ).
• Mauritius has long claimed sovereignty over the Chagos Islands, which were separated from Mauritius by the UK in 1965 before Mauritian independence in 1968.
• The UK signed an agreement in 2023 to transfer sovereignty of the Chagos Islands to Mauritius as part of a broader reconciliation effort in response to international legal and diplomatic pressure.
• The transfer agreement is a significant step towards addressing colonial-era injustices and respects Mauritius' sovereignty under international law.

Additional Information

• Chagos Archipelago:
• The Chagos Archipelago consists of over 60 islands located in the Indian Ocean, about 500 km south of the Maldives.
• The archipelago is strategically important due to its location between Africa and Asia, and houses a major US military base on Diego Garcia.
• Chagos' indigenous population, known as the Chagossians, were forcibly removed by the UK in the 1960s and 1970s to make way for the military base.
• Mauritius' Claim:
• Mauritius claims the Chagos Archipelago as part of its territory based on historical, legal, and geographical factors.
• The United Nations Convention on the Law of the Sea (UNCLOS) and other international rulings support Mauritius' claim.
• International Court of Justice (ICJ) Ruling:
• In 2019, the ICJ ruled that the UK's continued administration of the Chagos Islands was unlawful and that the UK should return the islands to Mauritius.
• The ICJ's advisory opinion highlighted the principle of self-determination and the illegality of the UK's separation of the Chagos Islands from Mauritius before independence.
• UNGA Resolution:
• Following the ICJ's ruling, the UNGA passed a resolution with overwhelming support, urging the UK to withdraw from the Chagos Archipelago and hand over control to Mauritius.
• This resolution emphasized the importance of respecting international law and decolonization processes.
• Strategic Importance of Chagos:
• The Chagos Archipelago is strategically located in the Indian Ocean and plays a key role in global maritime security.
• The US military base on Diego Garcia is a critical hub for operations in the Middle East, Africa, and Asia.

YourMockTest.com — Free Study Material

Q8. Answer: (d) New Delhi

The correct answer is New Delhi.

Key Points

• The 2nd edition of Khelo India Para Games 2025 was held in New Delhi in March 2025.

• This event is a part of the Khelo India initiative, launched by the Government of India to promote sports and fitness across the country.

• The Khelo India Para Games specifically focuses on providing a platform for para-athletes to showcase their talent and enhance inclusivity in sports.

• The event witnessed participation from para-athletes representing various states and Union Territories, promoting competitive spirit and camaraderie among differently-abled athletes.

• The choice of New Delhi as the host city underscores its infrastructure, accessibility, and facilities suitable for hosting a large-scale event like the Para Games.

Additional Information

• Khelo India Program:

• The Khelo India Scheme was launched by the Ministry of Youth Affairs and Sports in 2018.

• Its primary goal is to revive the sports culture in India by identifying and nurturing young talent.

• The program includes initiatives like infrastructure development, training of athletes, scholarships, and organizing sports events at various levels.

• Para Sports in India:

• Para sports in India have grown significantly, with initiatives supporting differently-abled athletes under schemes like the Target Olympic Podium Scheme (TOPS).

• India has won several medals in international para-sporting events, including the Paralympic Games.

• The government has emphasized creating accessible infrastructure and providing financial and training support to para-athletes.

• New Delhi as a Sports Hub:

• New Delhi is known for its world-class sports facilities, including stadiums like the Jawaharlal Nehru Stadium and Indira Gandhi Indoor Stadium.

• The city has hosted several prestigious events, such as the 2010 Commonwealth Games and the Asian Games.

• Its infrastructure and experience in hosting international and national events make it a preferred choice for large-scale sports initiatives.

• Promoting Inclusivity in Sports:

• The Khelo India Para Games align with the global movement to promote inclusivity and equity in sports.

• It aims to create awareness about the capabilities and achievements of differently-abled individuals.

• Such initiatives encourage participation, break stereotypes, and inspire the younger generation.

Important Points

• Khelo India Para Games Objectives:

• Provide a national platform for para-athletes to compete and showcase their skills.

• Identify and nurture talent for international-level competitions like the Paralympics.

• Promote awareness and acceptance of sports for people with disabilities.

• Government Support for Para-athletes:

• The Indian government provides financial assistance and training opportunities under various schemes.

• The National Sports Development Fund (NSDF) supports athletes, including para-athletes, with scholarships and infrastructure facilities.

• The Paralympic Committee of India (PCI) plays a vital role in managing and promoting para-sports in the country.

Q9. Answer: (d) Predominantly agrarian with low productivity

The correct answer is Predominantly agrarian with low productivity.

Key Points

• The Indian economy at the time of independence in 1947 was predominantly agrarian. Agriculture contributed nearly 50% of the Gross Domestic Product (GDP) and employed a large majority of the population.

• Agriculture was characterized by low productivity, primarily due to traditional farming methods, lack of modern inputs such as fertilizers, irrigation facilities, and dependence on monsoons.

• Land distribution was highly unequal, with a large number of peasants working as tenants, sharecroppers, or landless laborers under exploitative conditions. This led to widespread poverty and low living standards.

• The industrial sector was underdeveloped, contributing only a small share to the GDP. The economy lacked a significant

manufacturing base, and most industries were limited to primary processing rather than production of finished goods.

• India faced food insecurity at the time of independence. The country was heavily dependent on imports to meet its food grain requirements and suffered from frequent famines.

Additional Information

• High Per Capita Income:

• This was not a characteristic of India at independence. In fact, per capita income was very low, reflecting widespread poverty and inequality.

• The British colonial policies had drained India's wealth, leaving the population in a state of economic deprivation.

• Self-Sufficiency in Food Grains:

• India was not self-sufficient in food grains in 1947. The country relied on imports and foreign aid to bridge the food deficit.

• The infamous Bengal famine of 1943 had exposed the vulnerabilities of the Indian agricultural system under colonial rule.

• Dominance of the Industrial Sector:

• The industrial sector was not dominant at the time of independence. India's economy was largely agrarian, with industries accounting for less than 10-15% of GDP.

• Most industries were related to basic goods such as textiles, jute, and food processing, with very little focus on heavy or capital goods industries.

• Post-Independence Agricultural Reforms:

• After independence, efforts were made to address the issues of low agricultural productivity through land reforms, the introduction of the Green Revolution, and investment in irrigation and infrastructure.

• The Community Development Programme (1952) and Intensive Agricultural District Programme (1960s) were significant steps towards modernizing agriculture.

Important Points

• British Colonial Impact:

• The colonial economy was designed to serve British interests, with a focus on exporting raw materials and importing finished goods. This stunted the growth of Indian industries.

• The drain of wealth theory, as highlighted by Dadabhai Naoroji, explained how the British systematically transferred India's resources to Britain.

• Economic Planning in Post-Independence India:

• The Government of India initiated Five-Year Plans starting in 1951 to tackle the challenges of poverty, unemployment, and underdevelopment.

• The First Five-Year Plan (1951-56) focused on agriculture and irrigation, recognizing the agrarian nature of the Indian economy.

Q10. Answer: (c) It is established by an Act, has a separate legal identity, and can sue or be sued.

The correct answer is It is established by an Act, has a separate legal identity, and can sue or be sued..

Key Points

• A statutory corporation in India is a corporate body created by a specific Act of Parliament or a State Legislature. This Act defines its powers, functions, and responsibilities.

• The corporation is a separate legal entity, which means it has its own legal identity distinct from the government. This allows it to own property, enter into contracts, and sue or be sued in its own name. Hence, the statement is correct.

• It typically operates under a board of directors appointed by the government but functions with a degree of autonomy in its operations. Examples include the Life Insurance Corporation (LIC) and the State Bank of India (SBI).

• The establishment through a legislative process ensures that the corporation is backed by legal authority, offering it a structured framework for operations and governance.

• These corporations are primarily created to serve public welfare and ensure efficient delivery of services, such as utilities, finance, or insurance, in sectors requiring government involvement.

Additional Information

• Key Characteristics of Statutory Corporations:

• They are established by a legislative Act, and the Act itself specifies their objectives, powers, and responsibilities.

• They enjoy operational autonomy but remain subject to government oversight and guidelines.

• While their employees are not regular civil servants, they are often subject to rules and regulations unique to the corporation.

• Statutory corporations often have a dual financial model, deriving funding from both government grants and internal revenue generation.

• Examples of Statutory Corporations in India:

• Life Insurance Corporation (LIC): Established under the LIC Act, 1956, it provides life insurance services across India.

• Reserve Bank of India (RBI): Established under the RBI Act, 1934, it serves as the central banking authority of India.

• Airports Authority of India (AAI): Established under the Airports Authority of India Act, 1994, it manages and operates airports in India.

• Comparison with Other Entities:

• Private Companies: These are entirely privately owned and do not receive government funding or guarantees.

• Government Departments: Unlike statutory corporations, these have no separate legal identity and function as part of the government machinery.

• Functions and Objectives:

• To ensure the delivery of essential services in sectors where private participation is limited or absent, such as insurance, finance, and utilities.

• To promote socio-economic development by balancing commercial objectives with public welfare.

• To provide a structured and legally backed framework for large-scale operations.

Important Points

• Statement 1: It is fully owned by private shareholders and receives no government funding.

• This is incorrect as statutory corporations in India are typically owned and funded by the government.

• Statement 2: It has no legal existence separate from the government.

• This is incorrect because statutory corporations have their own legal identity independent of the government.

• Statement 4: Its employees are considered government civil servants under the usual rules.

• This is also incorrect. Employees of statutory corporations are not considered civil servants; they follow rules specific to the corporation.

Q11. Answer: (d) Right-click the file and select 'Rename'

The correct answer is Right-click the file and select 'Rename'..

Key Points

• Renaming files or folders in MS Windows is a crucial operation that helps in organizing and managing files effectively.

• The easiest and most common method to rename a file or folder is to right-click on the respective file or folder and select the 'Rename' option from the context menu.

• After selecting 'Rename,' the file or folder name becomes editable. Users can type the desired new name and press 'Enter' to save the changes.

• Renaming files helps in maintaining clarity, especially in cases where multiple files of similar content are stored together.

• This method works across all modern versions of Microsoft Windows, including Windows 10 and Windows 11, and is user-friendly.

Additional Information

• Other methods to rename files/folders in MS Windows:

• Using F2 Key: Select the file or folder and press the F2 key on the keyboard to rename it. This is a quick shortcut for renaming.

• Using File Explorer: Navigate to the file or folder in File Explorer, click once on the name, or use the 'Home' tab and select the 'Rename' option in the ribbon.

• Command Prompt: Advanced users can use the rename command (or ren command) in Command Prompt to rename files or folders programmatically.

• Common Mistakes:

• Double-clicking: Double-clicking on a file opens it rather than renaming it. This is a common misunderstanding among beginners.

• Keyboard shortcuts: 'Ctrl + R' is not a valid shortcut for renaming files. Instead, the F2 key is widely used for this purpose.

• Importance of Renaming:

• Helps in maintaining file organization and improves workflow efficiency.

• Essential for file identification, especially in projects involving multiple contributors or large datasets.

• Supported File Systems: Renaming functionality is supported in all major file systems used by Windows, such as NTFS, FAT32, and exFAT.

• Best Practices: Avoid using special characters (e.g., <, >, :, ", /, \, |, ?, *) in file names, as they are not allowed in Windows file systems and can lead to errors.

Important Points

• Context Menu: The right-click context menu in Windows provides various options, such as 'Rename,' 'Delete,' 'Copy,' and 'Properties,' which make file management convenient.

• Undo Renaming: If a file is renamed by mistake, users can press Ctrl + Z to undo the change immediately.

• Batch Renaming: Windows also allows batch renaming of multiple files by selecting all desired files, right-clicking, and selecting 'Rename.' The files will receive a common base name with sequential numbers appended.

Q12. Answer: (d) Kerala Health System Improvement Programme

The correct answer is Kerala Health System Improvement Programme.

Key Points

• The Kerala Health System Improvement Programme is the official name of Kerala's healthcare reform initiative for the year 2025.

• This programme aims to enhance the public healthcare infrastructure in the state, focusing on accessibility, efficiency, and affordability.

• The initiative is supported by the World Bank, with funding provided to improve the healthcare facilities and ensure equitable healthcare services across rural and urban areas.

• The programme includes measures to improve the quality of care in hospitals, strengthen primary healthcare, and address the growing burden of non-communicable diseases (NCDs).

• A key component of the initiative is the integration of technology and data-driven solutions to streamline healthcare delivery and make it patient-centric.

Additional Information

• Key Features of the Kerala Health System Improvement Programme:

• It focuses on building a resilient healthcare system to handle future pandemics and public health emergencies.

• Steps are being taken to upgrade the infrastructure of primary, secondary, and tertiary healthcare facilities in the state.

• The programme emphasizes the training and capacity building of healthcare professionals to improve the quality of services.

• It seeks to strengthen the public health surveillance system to ensure timely detection and response to health issues.

• Support from the World Bank:

• The World Bank has extended financial and technical support to Kerala for the successful implementation of this programme.

• The funding is aimed at addressing key challenges, including the state's aging population and the rising prevalence of lifestyle diseases.

• Relevance of the Programme:

• Kerala has one of the highest life expectancies and literacy rates in India, but the state faces challenges such as an aging population and increasing healthcare costs.

• This programme is designed to ensure that healthcare remains accessible and affordable, even for marginalized communities.

• Comparison with Other Options:

• Better Health Blueprint: This is not an official healthcare initiative in Kerala.

• Care4Kerala Mission: This is a fabricated name and does not correspond to any official programme.

• Comprehensive Health Kerala: While it sounds relevant, it is not the official name of the initiative.

Important Points

• Kerala's Healthcare Achievements:

• Kerala is recognized for its exemplary healthcare system, achieving milestones like low infant mortality rates and a high human development index.

• The state has been a pioneer in implementing universal healthcare policies and boasts a robust network of public hospitals.

• Challenges Addressed by the Programme:

• Rising cases of non-communicable diseases, such as diabetes and hypertension, due to lifestyle changes.

• Improving access to specialized medical care in remote areas.

• Addressing the challenges posed by an aging population and ensuring the availability of geriatric care.

Q13. Answer: (a) Ram Mohan Naidu

The correct answer is Ram Mohan Naidu.

Key Points

• Ram Mohan Naidu is an Indian politician and a member of the Telugu Desam Party (TDP). He represents the Srikakulam constituency in the Lok Sabha.

• He is known for raising significant issues concerning governance, administration, and public welfare in parliamentary debates.

• In December 2024, Ram Mohan Naidu introduced the Bharatiya Vayuyan Adhiniyam in the Rajya Sabha, which focused on reforms and modernization in the aviation sector.

• The Bharatiya Vayuyan Adhiniyam aimed to address key challenges in India's aviation industry, such as infrastructure development, safety measures, and regulatory frameworks.

• This legislation was passed in the Rajya Sabha and marked a crucial step toward strengthening India's aviation sector and ensuring its alignment with global standards.

Additional Information

• Bharatiya Vayuyan Adhiniyam:

YourMockTest.com — Free Study Material

• This legislation focuses on aviation reforms in India, addressing infrastructure development, regulations, and passenger safety measures.

• It aligns India's aviation sector with global standards, promoting international collaboration and economic growth.

• The bill emphasized the importance of modernizing airport facilities and introducing efficient air traffic management systems.

• It also aimed to enhance the regulatory framework to ensure transparency and accountability in the aviation sector.

• Indian Aviation Sector:

• India's aviation industry is one of the fastest-growing globally, driven by increasing passenger traffic and economic development.

• Key players include government bodies like the Directorate General of Civil Aviation (DGCA), Airports Authority of India (AAI), and private airlines.

• The sector contributes significantly to India's economy, supporting tourism, trade, and employment opportunities.

• Challenges include infrastructure constraints, regulatory compliance, and environmental sustainability.

• Role of Rajya Sabha in Legislation:

• The Rajya Sabha, or the Council of States, plays a vital role in reviewing and passing legislative proposals.

• It provides a platform for representatives to debate and deliberate on national issues, ensuring diverse perspectives in policymaking.

• Legislation like the Bharatiya Vayuyan Adhiniyam demonstrates the importance of the Rajya Sabha in addressing sector-specific challenges.

• Ram Mohan Naidu's Contributions:

• As a young and dynamic leader, Ram Mohan Naidu has actively contributed to parliamentary debates on various issues, including education, infrastructure, and governance.

• He is recognized for his efforts to represent the concerns of his constituency and promote regional development.

• His introduction of the Bharatiya Vayuyan Adhiniyam highlights his commitment to addressing national challenges and driving policy reforms.

Important Points

• Hardeep Singh Puri:

• He is a senior politician and diplomat, serving as the Minister of Civil Aviation in India.

• While he has made significant contributions to the aviation sector, he did not introduce the Bharatiya Vayuyan Adhiniyam.

• Jyotiraditya M Scindia:

• Currently serving as the Union Minister of Civil Aviation, he is actively involved in initiatives to modernize India's aviation infrastructure.

• However, he was not responsible for introducing the Bharatiya Vayuyan Adhiniyam.

• Kiren Rijiju:

• He is known for his contributions to various ministries, including law and justice, and sports.

• He has no direct association with the Bharatiya Vayuyan Adhiniyam.

• Legislative Process:

• The introduction and passage of a bill like the Bharatiya Vayuyan Adhiniyam in the Rajya Sabha involve several stages, including drafting, debate, and voting.

• It highlights the role of policymakers in addressing sector-specific challenges and driving national development.

Q14. Answer: (b) Rs. 5,000

The correct answer is Rs. 5,000.

Key Points

• The Pandit Deendayal Upadhyay National Welfare Fund for Sportspersons (PDUNWFS) was established in 1982 with the aim to assist outstanding sportspersons who have brought glory to the nation in sports but are now facing financial distress.

• As per the scheme, eligible players receive a monthly pension of Rs. 5,000 under the Pandit Deendayal Upadhyay National Welfare Fund for Sportspersons (PDUNWFS).

• It aims to provide financial stability to sportspersons who have contributed significantly to Indian sports but are now in need of assistance due to old age or other circumstances.

• This scheme is part of the government’s broader efforts to honor and support sportspersons for their valuable contributions to national pride and development in sports.

• The pension amount of Rs. 5,000 is provided to ensure a decent living standard for retired or financially distressed athletes.

Additional Information

• About PDUNWFS:

• The Pandit Deendayal Upadhyay National Welfare Fund for Sportspersons was set up by the Government of India under the

Ministry of Youth Affairs and Sports.

• The scheme addresses the financial needs of sportspersons who are facing hardships due to their inability to earn a livelihood after retirement from active sports.

• It also provides one-time financial assistance to sportspersons or their families for medical treatment, education, and other needs.

• Eligibility Criteria:

• The scheme primarily benefits former sportspersons who have represented India at international levels, such as the Olympics, Asian Games, Commonwealth Games, and other recognized championships.

• To qualify for the monthly pension, sportspersons must have retired from active sports and should not be earning sufficient income for a stable livelihood.

• Government Support:

• The Indian government has consistently worked to promote sports and welfare schemes for athletes to ensure they receive adequate support post-retirement.

• Other schemes for sportspersons include National Sports Development Fund (NSDF) and the Target Olympic Podium Scheme (TOPS).

• Comparison with Other Government Schemes:

• Similar to PDUNWFS, the Atal Pension Yojana (APY) also provides monthly pension benefits for individuals in the unorganized sector.

• However, PDUNWFS is specifically tailored for retired or financially distressed sportspersons, focusing on their contribution to sports.

• Impact of PDUNWFS:

• The scheme has supported several athletes in distress, helping them lead a dignified life after their active sports career.

• It serves as a recognition of their invaluable contribution to India's sports legacy.

Important Points

• The monthly pension amount of Rs. 5,000 under PDUNWFS is a fixed benefit provided to eligible sportspersons.

• The fund can also provide one-time financial assistance for medical emergencies or other essential needs of the sportspersons or their families.

• This scheme is a significant initiative under the Ministry of Youth Affairs and Sports to ensure social security for athletes who have represented India at prestigious platforms.

• Sportspersons or their families can apply for benefits under this scheme through the respective sports federations or the Ministry of Youth Affairs and Sports.

• It reflects the government's commitment to encouraging sports culture in India while ensuring the well-being of retired athletes.

Q15. Answer: (d) Soil fertility and water availability

The correct answer is Soil fertility and water availability.

Key Points

• Soil fertility and water availability are the most significant factors influencing the uneven distribution of population in India. Fertile lands support intensive agriculture, which, in turn, sustains a large population. For example, the Indo-Gangetic Plains, with fertile alluvial soil and abundant water from rivers like the Ganges and Yamuna, have a high population density.

• Regions with scarce water resources or infertile soil, such as parts of the Thar Desert in Rajasthan, tend to have lower population densities. The lack of agricultural potential and water scarcity makes these areas less habitable.

• Access to water resources is critical not only for agriculture but also for drinking, sanitation, and industrial activities, which are essential for sustaining large populations. For instance, regions near perennial rivers like the Brahmaputra and Godavari have dense populations.

• Fertile regions can produce more food, which attracts people for better livelihood opportunities. This is evident in states like Punjab and Haryana, which are known for their agricultural productivity and have high population densities.

• Conversely, areas with poor soil quality, such as rocky plateaus or arid regions, face challenges in sustaining large populations. For example, the Deccan Plateau has a relatively lower population density due to less fertile soil compared to the Indo-Gangetic belt.

Additional Information

• Language Diversity:

• Language diversity does not significantly influence population distribution. While it impacts cultural identity and social cohesion, it does not determine where people choose to live.

• India, with its 22 official languages and numerous dialects, showcases a rich linguistic diversity across states, but this does not directly affect population density.

• Trade Union Policies:

YourMockTest.com — Free Study Material

• Trade union policies are more relevant to industrial and labor relations and have limited impact on population distribution.

• Urban areas with significant industrial activity, such as Mumbai or Chennai, might see some influence of trade unions, but this is not a major determinant in overall population distribution.

• National Income:

• While high national income can lead to better infrastructure and living standards, which may attract people to certain regions, it is not the primary factor in population distribution.

• For example, despite India's GDP growth, rural areas with fertile land and water resources remain densely populated compared to many urban centers.

• Soil Fertility and Water Availability:

• These natural factors are the primary determinants of population distribution. Regions with favorable agricultural conditions and dependable water resources can support larger populations.

• For example, Kerala and West Bengal, with fertile soils and abundant water, have high population densities.

• Examples of Population Distribution in India:

• The Indo-Gangetic Plains have a population density of over 1,000 people per square kilometer due to fertile soil and a reliable water supply.

• The Thar Desert in Rajasthan has a sparse population due to arid conditions and lack of water resources.

• The Northeastern states, despite rich natural resources, have lower population densities due to rugged terrain and limited agricultural potential.

Important Points

• Role of Rivers: Rivers like the Ganga, Yamuna, and Brahmaputra not only provide water for agriculture but also support industries and urban settlements, contributing to high population densities in adjacent regions.

• Climate: Favorable climates, such as the tropical monsoon climate of India, support agriculture and enhance the habitability of regions with fertile soil and water resources.

• Urbanization: Cities like Delhi, Mumbai, and Bengaluru attract populations due to industrial and economic opportunities, but their population densities are still influenced by proximity to water and agricultural productivity in surrounding areas.

• Technological Advancements: In some arid or less fertile regions, advancements in irrigation and agriculture, such as in parts of Gujarat and Rajasthan, have enabled higher population densities.

Q16. Answer: (b) Ctrl + C – Copies content to the clipboard

The correct answer is Ctrl + C – Copies content to the clipboard.

Key Points

• Ctrl + C – Copies content to the clipboard: This is the standard shortcut used to copy text, images, or other content to the clipboard. Once copied, the content can be pasted elsewhere using the Ctrl + V command. Hence, this statement is correct.

• Ctrl + Tab – Copies the selected text: This shortcut is used to switch between open tabs in browsers or applications, not for copying text. Hence, this statement is incorrect.

• Ctrl + F – Switches between open tabs: This shortcut is primarily used to open the "Find" dialog to search for specific words or phrases within a document or webpage. It does not switch between tabs. Hence, this statement is incorrect.

• Ctrl + V – Finds a specific word in the document: This shortcut is used to paste the content from the clipboard. It does not perform the "Find" function. Hence, this statement is incorrect.

Additional Information

• Clipboard Functionality:

• The clipboard temporarily stores the copied content (text, images, files) until it is pasted elsewhere.

• It is an essential feature of operating systems and helps in transferring data efficiently between applications.

• Common Keyboard Shortcuts:

• Ctrl + X: Cuts the selected content and moves it to the clipboard.

• Ctrl + Z: Undoes the last action performed in most applications.

• Ctrl + Y: Redoes the last undone action.

• Applications of Ctrl + C:

• Used in text editors (e.g., Notepad, MS Word) to copy text.

• Widely used in design software (e.g., Photoshop, Illustrator) to duplicate objects or layers.

• Functional across operating systems like Windows, macOS (Command + C), and Linux.

• Importance of Keyboard Shortcuts:

• Enhances productivity by reducing dependency on mouse clicks.

• Improves accessibility for users with physical disabilities.

Important Points

• Difference between Copy (Ctrl + C) and Cut (Ctrl + X):

• Copy: Duplicates the selected content and keeps it in the original location.

• Cut: Removes the selected content from its original location and places it in the clipboard.

• MacOS Shortcuts:

• Instead of Ctrl, macOS uses the Command key for shortcuts. For example:

• Command + C: Copy.

• Command + V: Paste.

• Command + X: Cut.

Q17. Answer: (b) Kesavananda Bharati v. State of Kerala

The correct answer is Kesavananda Bharati v. State of Kerala.

Key Points

• The concept of the ‘Basic Structure’ of the Constitution was first propounded in the landmark case of Kesavananda Bharati v. State of Kerala (1973). This judgment is considered one of the most significant in Indian constitutional history.

• The Supreme Court ruled that while the Parliament has vast powers under Article 368 of the Indian Constitution to amend the Constitution, it cannot alter or destroy its basic structure.

• The judgment introduced the doctrine that certain fundamental features of the Constitution, such as democracy, rule of law, separation of powers, and judicial review, are inviolable and cannot be amended.

• The case arose when the Kerala government passed laws to regulate land ownership and impose land reforms, which were challenged by the petitioner, Kesavananda Bharati, on the grounds that they violated his fundamental rights.

• This judgment limited the Parliament's power to amend the Constitution and protected the spirit of the Indian Constitution from being eroded by arbitrary amendments.

Additional Information

• Other Landmark Cases Related to Constitutional Amendments:

• Golaknath v. State of Punjab (1967): The Supreme Court ruled that Parliament cannot amend fundamental rights. This decision was later overturned in the Kesavananda Bharati case.

• Minerva Mills v. Union of India (1980): This case reaffirmed the doctrine of the basic structure and held that a balance between Fundamental Rights and Directive Principles is part of the Constitution's basic structure.

• Maneka Gandhi v. Union of India (1978): This case expanded the interpretation of Article 21, emphasizing that the right to life and personal liberty cannot be curtailed except by a procedure that is fair, just, and reasonable.

• Basic Structure Doctrine:

• Examples of elements within the basic structure include sovereignty, secularism, federalism, separation of powers, and judicial independence.

• The doctrine ensures that constitutional amendments cannot alter the essence of the Constitution, preserving its core values and framework.

• Impact of Kesavananda Bharati Case:

• It introduced a mechanism for judicial review of constitutional amendments to ensure they align with the Constitution's basic structure.

• It marked a turning point in Indian constitutional law, emphasizing the supremacy of the Constitution over parliamentary authority.

• This case is often regarded as the ‘savior of the Constitution’, ensuring the protection of fundamental rights and democratic principles.

• Importance of Article 368:

• Article 368 provides the power to amend the Constitution, but the Kesavananda Bharati judgment clarified that this power is not absolute and is subject to judicial review.

• The article plays a critical role in maintaining the Constitution's flexibility while ensuring its core principles are preserved.

Important Points

• Parliamentary Authority vs. Judicial Review:

• The Kesavananda Bharati judgment struck a balance between the amending power of Parliament and the judicial review power of the judiciary.

• The ruling emphasized that neither Parliament nor the judiciary is supreme, but the Constitution is the ultimate authority.

• Significance of Judicial Independence:

• The judgment reinforced the independence of the judiciary as a guardian of the Constitution, ensuring checks and balances in governance.

YourMockTest.com — Free Study Material

• This independence is critical for upholding the rule of law and protecting the rights of citizens.

Q18. Answer: (b) Law of Definite Proportions

The correct answer is Law of Definite Proportions.

Key Points

• The Law of Definite Proportions, also known as the Law of Constant Composition, was proposed by Joseph Proust in 1799.

• This law states that a chemical compound always contains its component elements in a fixed ratio by mass, regardless of the source or how the compound is prepared.

• The law applies to pure chemical compounds, ensuring that the proportion of elements remains consistent. For example, in water (H2O), the ratio of hydrogen to oxygen by mass is always 1:8.

• It is an essential principle in stoichiometry, the calculation of reactants and products in chemical reactions.

• This law is foundational to modern chemistry, as it establishes the concept that compounds are made of elements combined in specific proportions, laying the groundwork for the development of chemical formulas and molecular theory.

Additional Information

• Law of Conservation of Mass:

• Proposed by Antoine Lavoisier in 1789, it states that mass is neither created nor destroyed in a chemical reaction.

• This law is fundamental to balancing chemical equations and understanding that the total mass of reactants equals the total mass of products.

• Example: In the reaction between hydrogen and oxygen to form water, the total mass of hydrogen and oxygen is equal to the mass of water produced.

• Law of Multiple Proportions:

• Proposed by John Dalton in 1803, it states that when two elements form more than one compound, the ratios of the masses of one element that combine with a fixed mass of the other are in small whole numbers.

• Example: Carbon and oxygen form two compounds: carbon monoxide (CO) and carbon dioxide (CO2). The ratio of oxygen masses in CO and CO2 is 1:2.

• Avogadro's Law:

• Proposed by Amedeo Avogadro in 1811, it states that equal volumes of gases at the same temperature and pressure contain an equal number of molecules.

• This law is critical to understanding the behavior of gases and is the basis for the concept of the mole in chemistry.

• Example: One mole of any gas at standard temperature and pressure (STP) occupies a volume of 22.4 liters.

• Applications of the Law of Definite Proportions:

• The law is used in determining the empirical formula of compounds.

• It helps in quality control during the synthesis of chemical compounds.

• It is a fundamental concept in analytical chemistry, ensuring the purity of chemical substances.

Important Points

• The Law of Definite Proportions applies only to pure substances and not to mixtures.

• This law is sometimes considered a precursor to the modern atomic theory, as it implies that matter is composed of discrete units (atoms).

• Joseph Proust's experiments with compounds like copper carbonate and tin oxides demonstrated the consistency of element ratios, providing empirical evidence for this law.

• While the law is universally true for chemical compounds, exceptions can occur in non-stoichiometric compounds, where the ratio of elements can vary slightly.

Q19. Answer: (d) Shreyas Iyer

The correct answer is Shreyas Iyer.

Key Points

• Shreyas Iyer won the prestigious ICC Men's Player of the Month for March 2025, showcasing exceptional performances during the month.

• He played a pivotal role in India's matches during March 2025, contributing significantly with both bat and impactful fielding performances.

• Shreyas Iyer's performances included consistent high scores in crucial matches, displaying his ability to anchor the innings and accelerate when necessary.

• His contributions were instrumental in India securing victories in international matches during March 2025, earning him global recognition.

• The ICC Player of the Month award recognizes outstanding individual performances in international cricket, and Shreyas Iyer's

achievement highlights his growing prominence in the cricketing world.

Additional Information

• Shreyas Iyer:

• Born on 6 December 1994, Shreyas Iyer is an Indian cricketer known for his aggressive batting style and ability to handle pressure situations.

• He is a right-handed batsman and has represented India in ODI and T20 formats, showcasing his talent on the international stage.

• He has also captained the Delhi Capitals in the Indian Premier League (IPL), demonstrating leadership skills and tactical acumen.

• Shreyas Iyer's ability to adapt to different formats and conditions has made him a valuable asset to the Indian cricket team.

• ICC Player of the Month Award:

• The award was introduced by the International Cricket Council (ICC) in January 2021 to recognize and celebrate the best performances of both male and female cricketers across all formats globally.

• Winners are determined through a combination of votes from the ICC Voting Academy and fans worldwide.

• This prestigious award highlights players who have demonstrated extraordinary skills and made significant contributions to their teams during the given month.

• Indian Cricket Achievements in March 2025:

• India played several important matches in March 2025, with players like Shreyas Iyer, Virat Kohli, and Rohit Sharma leading the charge with remarkable performances.

• The team secured key victories, further solidifying its position as a dominant force in international cricket.

• Shreyas Iyer's contributions were particularly noteworthy, earning him individual recognition at the global level.

• Other Indian Cricket Stars:

• Virat Kohli: Known for his aggressive batting and exceptional consistency, Kohli is one of India's most celebrated cricketers.

• Rohit Sharma: India's skipper and renowned for his ability to score big centuries, especially in limited-overs cricket.

• KL Rahul: An elegant batsman and wicketkeeper, KL Rahul has proved his versatility across all formats of the game.

• While these players performed admirably, Shreyas Iyer stood out during March 2025, earning the ICC Men's Player of the Month award.

Important Points

• Selection Criteria for ICC Player of the Month:

• Performance across matches played during the month is a key criterion for selection.

• Consistency, impact on the team's results, and individual brilliance are considered while choosing the winner.

• Fans and ICC Voting Academy members play an active role in determining the winner.

• Recognition and Impact:

• Winning the ICC Player of the Month award is a testament to a player's hard work, skills, and contribution to the game.

• It brings global recognition and inspires young cricketers worldwide.

• Shreyas Iyer's win in March 2025 highlights his emergence as a key player in Indian cricket.

Q20. Answer: (a) Indian Institute of Technology Hyderabad (IIT-H)

The correct answer is Indian Institute of Technology Hyderabad (IIT-H).

Key Points

• Indian Institute of Technology Hyderabad (IIT-H) collaborated with Sharp Semiconductor Innovation Corporation (SSIC) of Japan on 15 May 2025 to successfully test Beyond 5G (B5G) and 6G wireless technologies.

• IIT Hyderabad is well-known for its advanced research in emerging technologies and has previously undertaken various collaborations in the field of communication and wireless technology.

• B5G and 6G technologies are the next-generation wireless technologies that aim to provide faster data speeds, improved connectivity, and enhanced user experience compared to the current 5G network.

• The collaboration signifies a major milestone in the development of advanced wireless communication systems, setting a foundation for future innovations in the field.

• This partnership reflects the growing emphasis on international collaboration between India and Japan to foster research and development in cutting-edge technologies.

Additional Information

• Beyond 5G (B5G) and 6G Technologies:

• B5G refers to the technologies that go beyond the capabilities of 5G networks, focusing on ultra-reliable communication, low-latency, and massive connectivity.

• 6G is expected to offer data rates up to 1 Tbps, which is significantly faster than 5G, and will support applications such as augmented reality (AR), virtual reality (VR), and holographic communications.

• These technologies aim to revolutionize industries such as healthcare, education, smart cities, and transportation.

• Indian Institute of Technology Hyderabad (IIT-H):

• Located in Kandi, Sangareddy district, Telangana, IIT-H was established in 2008.

• The institution is renowned for its emphasis on innovation and research in fields like artificial intelligence (AI), wireless communication, and advanced materials.

• IIT-H has actively collaborated with international organizations and governments to drive advancements in science and technology.

• Sharp Semiconductor Innovation Corporation (SSIC):

• SSIC is a Japan-based company specializing in semiconductor technology, including wireless communication and device innovation.

• It plays a significant role in advancing technology standards and has been at the forefront of developing next-generation communication systems.

• India-Japan Collaboration in Technology:

• India and Japan have a strong history of technological collaboration, particularly in areas like robotics, artificial intelligence, and communication technology.

• Such partnerships have been supported by bilateral agreements and initiatives like the India-Japan Digital Partnership (IJDP).

Important Points

• 5G vs. B5G/6G:

• 5G focuses on high-speed internet, enhanced mobile broadband, and reduced latency, but its capabilities are limited to certain industrial applications.

• B5G and 6G aim to overcome these limitations by providing ultra-low latency, higher reliability, and support for innovative applications like autonomous vehicles and space-based communication.

• Global Efforts in 6G Development:

• Countries like Japan, South Korea, the USA, and China are investing heavily in 6G research, recognizing its transformative potential.

• 6G is expected to be commercially available around 2030, with ongoing trials and research in many advanced nations.

Q21. Answer: (d) Gulzarilal Nanda

The correct answer is Gulzarilal Nanda.

Key Points

• Gulzarilal Nanda joined the Planning Commission as its Vice-Chairman in March 1950.

• The Planning Commission was established in 1950 by the Government of India to promote economic development and create systematic plans for growth.

• Gulzarilal Nanda was a renowned Indian politician, economist, and administrator known for his contributions to economic planning and labor welfare.

• He held key positions in the Indian government, including acting as the Prime Minister of India twice in 1964 and 1966.

• The Planning Commission aimed at formulating Five-Year Plans to guide India's socioeconomic development, and Nanda's tenure contributed to shaping early strategies for growth.

Additional Information

• Planning Commission:

• It was established in 1950 under the chairmanship of Prime Minister Jawaharlal Nehru.

• The commission was responsible for creating Five-Year Plans to boost India's economic growth and development.

• The first Five-Year Plan focused on agricultural development, as agriculture was the backbone of the Indian economy at that time.

• Later, the commission worked on industrialization, infrastructure development, and poverty alleviation.

• The Planning Commission was replaced by NITI Aayog in 2015 to reflect modern governance needs.

• Gulzarilal Nanda:

• Born on 4 July 1898 in Sialkot, Punjab (now in Pakistan).

• He was known for his expertise in labor welfare and economic policies.

• He served as the acting Prime Minister of India twice, following the deaths of Jawaharlal Nehru in 1964 and Lal Bahadur Shastri in 1966.

• Nanda was honored with the Bharat Ratna, India's highest civilian award, for his contributions to the nation.

• Five-Year Plans:

• The first Five-Year Plan (1951–56) aimed at developing agriculture and irrigation.

• The second Five-Year Plan (1956–61) focused on industrialization, particularly heavy industries.

• These plans were inspired by the Soviet model of centralized economic planning.

• The Planning Commission guided the implementation of these plans to achieve long-term economic goals.

• Other notable personalities mentioned:

• Jagjivan Ram: A prominent leader who worked extensively for the upliftment of Dalits and served as Union Minister in various portfolios.

• Shyama Prasad Mukherjee: Founder of the Bharatiya Jana Sangh and a key figure in modern Indian politics.

• John Mathai: An economist who served as India's Finance Minister and contributed significantly to the early economic policies.

Important Points

• Planning Commission Structure: The commission was headed by the Prime Minister and included a Vice-Chairman, full-time members, and a Secretary.

• Objectives: The primary aim was to improve living standards through planned economic development and poverty reduction.

• NITI Aayog: It replaced the Planning Commission to promote decentralized planning and encourage innovation in policymaking.

Q22. Answer: (d) Krishna Jayasankar

The correct answer is Krishna Jayasankar.

Key Points

• Krishna Jayasankar broke the women's shot put indoor national record at the Mountain West Indoor Track and Field Championships held in 2025. This achievement marks a significant milestone for India in the field of athletics.

• The Mountain West Indoor Track and Field Championships is a prestigious competition held annually, featuring elite athletes from across the globe.

• Krishna Jayasankar's record-breaking performance is a testament to her dedication, training, and skill, showcasing her ability to compete at a high level.

• Shot put is a discipline that requires strength, technique, and precision. Breaking a national record in this event is a significant achievement, reflecting the athlete's exceptional capabilities.

• Her accomplishment contributes to India's growing reputation in track and field sports, encouraging young athletes to pursue excellence in athletics.

Additional Information

• Shot Put Discipline:

• The shot put involves throwing a heavy spherical object, known as the shot, as far as possible using a pushing motion.

• It is one of the oldest track and field events, requiring a combination of strength, technique, and explosive power.

• Athletes use techniques like the glide or the spin to maximize their throw distance.

• Mountain West Indoor Track and Field Championships:

• This annual event showcases some of the best athletes from across the globe in various indoor track and field disciplines.

• It provides a platform for athletes to demonstrate their abilities and achieve remarkable feats in sports.

• Indian Women in Athletics:

• India has produced remarkable female athletes in disciplines such as shot put, discus throw, and javelin, contributing to the country's success on the global stage.

• Athletes like Kamalpreet Kaur and Manpreet Kaur have set benchmarks in their respective fields, inspiring upcoming generations.

• Training and Support:

• Indian athletes receive training and support from institutions like the Sports Authority of India (SAI) and private organizations to enhance their performance.

• Facilities like advanced coaching, nutritional advice, and access to international competitions play a crucial role in their development.

Important Points

• Navjeet Kaur Dhillon: She is a prominent Indian discus thrower who has won medals at the Commonwealth Games but is not associated with shot put records.

• Kamalpreet Kaur: Known for her achievements in discus throw, Kamalpreet has represented India in international events but has not competed in shot put events.

• Manpreet Kaur: A renowned Indian shot putter, Manpreet has previously set records in the sport but did not break the indoor national record in 2025.

• Krishna Jayasankar: As highlighted, she achieved the remarkable feat of breaking the national record in women's shot put at the Mountain West Indoor Championships in 2025.

Q23. Answer: (b) Corps of Engineers

The correct answer is Corps of Engineers.

Key Points

• The Corps of Engineers of the Indian Army represented India in the VINBAX exercise held in November 2024. This unit specializes in engineering and infrastructure-related operations in the Army.

• VINBAX is a bilateral military exercise conducted between India and Vietnam, focusing on enhancing military cooperation and interoperability between the two nations.

• The participation of the Corps of Engineers in VINBAX highlights India's focus on infrastructure development and disaster relief capabilities as part of military collaboration.

• The exercise enables the two countries to share expertise in engineering support, disaster management, and counter-insurgency operations.

• This unit's involvement reflects the Indian Army's commitment to strengthening ties with Vietnam and contributing to regional peace and security.

Additional Information

• Corps of Engineers:

• Established in 1780, the Corps of Engineers is one of the oldest arms of the Indian Army.

• It is responsible for construction, combat engineering, and providing infrastructure support during both peace and war times.

• The Corps also plays a key role in disaster relief operations, contributing to civilian infrastructure development in emergencies.

• Its personnel are highly skilled in bridge construction, minefield clearing, and water supply management.

• VINBAX:

• VINBAX (Vietnam-India Bilateral Army Exercise) is a joint military exercise aimed at boosting defense cooperation between India and Vietnam.

• The exercise focuses on areas such as peacekeeping operations, training, and capacity building.

• It highlights the strategic partnership between the two countries, especially in the context of the Indo-Pacific region.

• VINBAX is part of the broader Act East Policy of India, emphasizing deeper engagements with Southeast Asian nations.

• Role of the Indian Army in Bilateral Exercises:

• The Indian Army participates in several bilateral and multilateral military exercises to enhance interoperability and share expertise with other nations.

• These exercises contribute to confidence-building measures and strengthen diplomatic relations.

• Examples include Yudh Abhyas with the US, Indra with Russia, and Shakti with France.

• Other Units of the Indian Army:

• Gorkha Rifles: Known for their valor and discipline, they specialize in mountain warfare.

• Mechanised Infantry Regiment: Focuses on armored operations, using infantry fighting vehicles for mobility.

• Parachute Regiment: Specializes in airborne operations, including rapid deployment and counter-terrorism roles.

Important Points

• India-Vietnam Relations:

• India and Vietnam share strong bilateral ties based on mutual trust, cultural connections, and strategic interests.

• The defense relationship has strengthened significantly, with joint exercises like VINBAX and cooperation in maritime security.

• Both countries emphasize the importance of a free, open, and inclusive Indo-Pacific.

• Act East Policy:

• Launched in 1991, this policy aims to strengthen India's ties with Southeast and East Asian nations.

• It focuses on economic integration, cultural ties, and strategic collaboration.

• Defense cooperation forms a key pillar of this policy, including initiatives like military exercises and defense agreements.

Q24. Answer: (a) Kol Revolt

The correct answer is Kol Revolt.

Key Points

• The Kol Revolt occurred during 1831-32 and was one of the earliest tribal uprisings against British rule in India.

• The revolt was primarily led by Buddho Bhagat, a tribal leader who mobilized the Kols against the exploitative landlords and British officials.

• The uprising was triggered by the introduction of new revenue policies and the increasing oppression of tribal lands by landlords

YourMockTest.com — Free Study Material

and moneylenders under British rule.

• The Kols were known for their fierce resistance and organized attacks, which targeted British officers, government officials, and landlords in the region.

• The rebellion was eventually suppressed by the British forces, but it highlighted the growing discontent among tribal communities due to exploitative practices and the erosion of their traditional rights.

Additional Information

• Kol Revolt:

• The Kols were an indigenous tribal community residing in areas like Chotanagpur in present-day Jharkhand.

• The rebellion was a reaction to the exploitation brought by British revenue policies, which led to the forced acquisition of their lands and the imposition of high rents.

• Other tribal leaders and communities also joined the revolt, making it a significant uprising in tribal history.

• The revolt marked the beginning of tribal resistance movements in India against British colonial policies.

• Bhil Revolt:

• The Bhil Revolt occurred in 1822 in the western regions of India, primarily in Maharashtra and Rajasthan.

• It was led by Bhil leaders like Rama Naik and revolved around grievances related to land alienation and exploitation under British rule.

• Unlike the Kol Revolt, the Bhils were more spread out and focused on guerrilla warfare against British forces.

• Munda Revolt:

• The Munda Revolt was led by Birsa Munda in 1899-1900 and occurred in the region of Chotanagpur Plateau.

• This uprising was motivated by socio-religious reforms and the protection of tribal lands from encroachment by landlords and British officials.

• Birsa Munda emerged as a spiritual leader and called for the establishment of Munda Raj.

• Santhal Revolt:

• The Santhal Revolt, also known as the Santhal Hul, occurred in 1855-56 and was led by Sido and Kanhu Murmu.

• The revolt was against the exploitation by zamindars, moneylenders, and British policies in the Santhal Parganas region.

• It was one of the largest tribal uprisings in colonial India and led to significant changes in British policies towards tribal communities.

Important Points

• Impact of Tribal Revolts:

• Tribal revolts like the Kol Revolt brought attention to the exploitation and marginalization faced by indigenous communities under British rule.

• They demonstrated the fierce resistance of tribal communities and their determination to protect their lands, culture, and rights.

• These uprisings forced the British administration to reconsider their policies and implement changes to address tribal grievances.

• Characteristics of Tribal Revolts:

• Most tribal revolts were rooted in issues like land alienation, high rents, and exploitation by landlords and moneylenders.

• Leaders like Buddho Bhagat, Birsa Munda, and Sido Murmu played pivotal roles in mobilizing their communities.

• These movements were often suppressed by British forces but left a lasting legacy in India's struggle against colonial rule.

Q25. Answer: (a) Solar energy

The correct answer is Solar Energy.

Key Points

• Solar energy has emerged as the largest renewable energy source in terms of installed capacity in India, driven by large-scale projects and government policies.

• India's solar energy sector has grown significantly since the Jawaharlal Nehru National Solar Mission (JNNSM), launched in 2010, which aimed to achieve 100 GW of solar capacity by 2022.

• By 2025, India's solar installed capacity is expected to surpass other renewable energy sources due to its lower costs, abundant sunshine, and massive investments.

• India is among the world's top countries in solar energy production, with states like Rajasthan, Gujarat, Tamil Nadu, and Karnataka leading solar installations.

• Solar energy is promoted through initiatives like Kusum Yojana, rooftop solar schemes, and the International Solar Alliance (ISA), which India co-founded in 2015.

Additional Information

• Hydropower:

• Hydropower is one of the oldest renewable energy sources in India, contributing significantly to electricity generation.

• India has an installed capacity of over 45 GW in hydropower as of 2023, with major projects in states like Himachal Pradesh, Uttarakhand, and Arunachal Pradesh.

• Large dams such as Bhakra Nangal and Tehri contribute to hydropower generation, but growth is limited due to environmental concerns and displacement issues.

• Wind Energy:

• India ranks 4th globally in wind energy production, with an installed capacity of over 44 GW as of 2023.

• Wind energy projects are concentrated in states like Tamil Nadu, Gujarat, Maharashtra, and Karnataka, which have high wind potential.

• While wind energy has significant potential, solar energy has overtaken it due to lower costs and scalability.

• Geothermal Energy:

• Geothermal energy is still in its nascent stage in India, with limited exploration and no significant installed capacity.

• Potential geothermal sites include Himalayan regions, Andaman & Nicobar Islands, and Western Ghats.

• The absence of large-scale projects and high initial investment costs make it less competitive compared to solar and wind energy.

• Government Initiatives:

• India's renewable energy sector is supported by schemes like National Solar Mission, Perform, Achieve, Trade (PAT), and Renewable Energy Certificates (REC).

• The Green Energy Corridor Project facilitates the integration of renewable energy into the national grid.

• India targets achieving 500 GW of non-fossil fuel capacity by 2030 under its climate commitments.

Important Points

• International Solar Alliance (ISA): India co-founded the ISA in 2015 to promote solar energy globally. It aims to mobilize $1 trillion of investment in solar projects by 2030.

• Kusum Scheme: Launched in 2019, this scheme promotes solar-powered irrigation systems and aims to install 30.8 GW of solar capacity by 2022.

• Solar Parks: India has developed large-scale solar parks, such as the Bhadla Solar Park in Rajasthan, which is one of the largest in the world.

• Cost Efficiency: Solar energy prices have fallen by 80% in the last decade, making it cheaper than coal-based power in many regions.

• Climate Goals: India's transition to solar energy is critical for meeting its Net Zero emissions target by 2070 and fulfilling its Paris Agreement commitments.

Q26. Answer: (d) A former Judge of the Supreme Court

The correct answer is A former Judge of the Supreme Court.

Key Points

• The Lokpal and Lokayuktas Act, 2013 establishes the Lokpal as an anti-corruption ombudsman to investigate complaints of corruption against public officials and government organizations.

• As per Section 3 of the Act, the Chairperson of the Lokpal must be either a current or former Chief Justice of India, a Judge of the Supreme Court, or an eminent person with expertise in anti-corruption, public administration, or law.

• The option "A former Judge of the Supreme Court" aligns with the eligibility criteria outlined in the Lokpal and Lokayuktas Act, 2013, making it the correct answer.

• Individuals such as retired Cabinet Secretaries, sitting High Court Judges, or Members of Parliament are not eligible to serve as Chairperson under the Act.

• The Lokpal Chairperson is appointed by a selection committee that includes the Prime Minister, Speaker of the Lok Sabha, the Leader of the Opposition, the Chief Justice of India, or a Supreme Court judge nominated by the CJI.

Additional Information

• Lokpal and Lokayuktas Act, 2013:

• The Act was enacted to set up an independent institution called Lokpal at the central level and Lokayukta at the state level to investigate cases of corruption against public functionaries.

• The Lokpal consists of a Chairperson and a maximum of eight members. Out of these, 50% must be judicial members, and at least 50% of the total members must belong to Scheduled Castes, Scheduled Tribes, Other Backward Classes, minorities, or women.

• Eligibility Criteria for Chairperson:

• The Chairperson must have served as the Chief Justice of India, a Supreme Court Judge, or an eminent person with specialized knowledge and experience in anti-corruption, public administration, or related fields.

• The Chairperson or members are appointed for a term of 5 years or until they reach the age of 70, whichever is earlier.

YourMockTest.com — Free Study Material

• Selection Committee:
• The committee responsible for appointing the Chairperson and members consists of:
• The Prime Minister (Chairperson).
• The Speaker of the Lok Sabha.
• The Leader of the Opposition in the Lok Sabha.
• The Chief Justice of India or a Supreme Court Judge nominated by the CJI.
• An eminent jurist recommended by the President.
• Functions of Lokpal:
• Lokpal is empowered to investigate cases of corruption against the Prime Minister, Ministers, Members of Parliament, Group A, B, C, and D government officials, among others.
• The Lokpal can direct any central agency like the CBI to investigate cases under its jurisdiction.
• It ensures accountability and transparency in governance by addressing complaints of corruption and taking suitable actions.
• Exclusions:
• Members of Parliament concerning anything said or votes cast in Parliament are excluded from the jurisdiction of the Lokpal.
• The Lokpal cannot inquire into allegations against the Prime Minister about international relations, external and internal security, public order, atomic energy, and space.

Important Points
• Historical Context:
• The demand for a Lokpal in India began in the 1960s, inspired by the Ombudsman system in Scandinavian countries.
• The First Administrative Reforms Commission (ARC), in its report in 1966, recommended setting up a Lokpal at the Centre and Lokayuktas at the state level.
• First Lokpal Appointment:
• Justice Pinaki Chandra Ghose was appointed as the first Lokpal of India in March 2019.
• Key Features:
• The Lokpal has jurisdiction over all Members of Parliament, Ministers, and public servants, including Group A, B, C, and D officials.
• The institution is intended to strengthen the anti-corruption framework in the country.

Q27. Answer: (d) 2017

The correct answer is 2017.

Key Points
• The Central Goods and Services Tax (CGST) Act was enacted in the year 2017 by the Government of India.
• The Act forms a crucial part of the Goods and Services Tax (GST) framework, which was introduced to create a unified tax regime across India, replacing various indirect taxes.
• The CGST Act, along with the State Goods and Services Tax (SGST) Act, Integrated Goods and Services Tax (IGST) Act, and the Union Territory Goods and Services Tax (UTGST) Act, came into effect on 1st July 2017.
• The GST regime was implemented under the provisions of the 101st Constitutional Amendment Act, 2016, which empowered both the Centre and the States to levy and collect GST.
• The CGST Act governs the taxation of intra-state supply of goods and services and ensures that the Centre collects the respective share of tax revenue.

Additional Information
• What is Goods and Services Tax (GST)?
• GST is a comprehensive indirect tax levied on the supply of goods and services across India.
• The tax is designed to eliminate the cascading effect of taxes, i.e., "tax on tax," and to streamline the taxation process.
• It is a destination-based tax, meaning the tax revenue is collected by the state in which the goods or services are consumed.
• Structure of GST:
• The GST framework in India is divided into three main categories:
• Central GST (CGST): Levied by the Central Government on intra-state supplies.
• State GST (SGST): Levied by the respective State Governments on intra-state supplies.
• Integrated GST (IGST): Levied by the Central Government on inter-state supplies.
• Key Features of CGST Act:
• Defines provisions for the levy and collection of CGST on intra-state supplies.
• Outlines the rules for input tax credit, registration, and the filing of returns.

• Provides for penalties, audits, and appeals for non-compliance with tax regulations.

• 101st Constitutional Amendment Act:

• This amendment paved the way for the implementation of GST by introducing Article 246A, which grants concurrent powers to both the Centre and States to legislate on GST.

• It also established the GST Council, a constitutional body responsible for recommending GST rates, exemptions, and other related policies.

• Implementation Timeline:

• The GST was formally launched on 1st July 2017 by the then President of India, Pranab Mukherjee, and the Prime Minister, Narendra Modi.

• It replaced multiple indirect taxes such as VAT, service tax, excise duty, and more.

Important Points

• GST Council:

• It is a statutory body chaired by the Union Finance Minister and includes State Finance Ministers as members.

• The Council makes recommendations on issues such as tax rates, exemptions, and GST laws.

• Impact of GST:

• It has significantly simplified the taxation process by subsuming multiple indirect taxes under a single framework.

• GST is expected to enhance the ease of doing business and increase tax compliance in India.

• Challenges in GST Implementation:

• Initial challenges included adapting to the new system, addressing technical glitches, and ensuring compliance from businesses.

• Over time, the system has evolved with improvements such as the introduction of e-invoicing and simplification of GST returns.

Q28. Answer: (c) Narmada

The correct answer is Narmada.

Key Points

• The Narmada River originates from the Amarkantak Plateau, which is located in the state of Madhya Pradesh, India. It is one of the major rivers in the country.

• The Narmada is also known as the "Lifeline of Madhya Pradesh and Gujarat" as it provides water for irrigation, drinking, and hydroelectric power generation.

• It flows through a rift valley between the Vindhya and Satpura mountain ranges, which is a unique geographical feature of this river.

• The Narmada River ultimately drains into the Arabian Sea, covering a distance of approximately 1,312 kilometers.

• Notably, the Narmada is considered one of the seven sacred rivers in Hinduism, and many temples and pilgrimage sites are located along its banks.

Additional Information

• Characteristics of Narmada River:

• The Narmada River is the fifth-largest river in the Indian subcontinent and forms the traditional boundary between North and South India.

• It is the only river in India that flows entirely through a rift valley, which was formed due to geological faulting.

• The river supports several hydroelectric projects, including the Sardar Sarovar Dam and the Indira Sagar Dam.

• Other Rivers Mentioned in the Question:

• Mahanadi: Originates from the Sihawa hills in Chhattisgarh, not the Amarkantak Plateau. It flows eastward and drains into the Bay of Bengal.

• Ganga: Originates from the Gangotri Glacier in Uttarakhand, India. It is the holiest river in Hinduism and also flows eastward into the Bay of Bengal.

• Tapti: Originates from the Satpura ranges in Madhya Pradesh. Like the Narmada, it flows westward into the Arabian Sea but does not originate from the Amarkantak Plateau.

• Geographical Importance of Amarkantak Plateau:

• The Amarkantak Plateau is located at the meeting point of the Vindhya and Satpura ranges in Madhya Pradesh.

• It is a watershed region from which several rivers, including the Narmada, Son, and Johila, originate.

• The plateau is considered sacred in Hinduism and is a site of ecological and cultural significance.

• Religious and Cultural Significance of Narmada River:

• The Narmada is often referred to as "Rewa" in Indian scriptures and is mentioned in various ancient texts like the Puranas.

• Many festivals and rituals are celebrated along its banks, and pilgrimages like the Narmada Parikrama are undertaken by devotees.

• Important temples like the Omkareshwar Jyotirlinga and the Maheshwar temples are located along the river.

Important Points

• The Narmada Basin covers parts of Madhya Pradesh, Gujarat, and Maharashtra, making it a vital resource for these states.

• The river plays a crucial role in water management and agricultural development in the region.

• The Statue of Unity, the world's tallest statue dedicated to Sardar Vallabhbhai Patel, is located near the Sardar Sarovar Dam on the Narmada River.

• The Narmada is one of the few rivers in India that flows westward and is accompanied by two other westward rivers, the Tapti and Mahi.

• Conservation efforts are ongoing to preserve the ecological balance of the Narmada River, as it faces challenges from deforestation, pollution, and dam construction.

Q29. Answer: (a) Strengthen sports culture and identify young talent

The correct answer is Strengthen sports culture and identify young talent.

Key Points

• The Khelo India scheme was launched by the Government of India in 2018 to promote sports culture and identify young talent at the grassroots level.

• It aims to develop sporting infrastructure and provide financial assistance to athletes to nurture their potential and prepare them for national and international competitions.

• The scheme focuses on identifying young talent from schools, colleges, and rural areas and providing them with training under expert coaches.

• Under the scheme, 1000 athletes are selected every year to receive an annual scholarship of INR 5 lakhs for 8 years, ensuring long-term support for their training and development.

• The initiative also works to strengthen sports infrastructure in the country by creating world-class facilities across rural and urban regions.

Additional Information

• Key Features of the Khelo India Scheme:

• The scheme is divided into 12 verticals, including talent identification, sports infrastructure, and promotion of rural and indigenous sports.

• It includes programs like the Khelo India Youth Games and Khelo India University Games, which serve as platforms for young athletes to showcase their skills.

• The scheme also promotes fitness and wellness through initiatives like the Fit India Movement.

• Focus on Grassroots Development:

• The scheme aims to provide sports training at the grassroots level by identifying talent in schools and colleges.

• It ensures the involvement of rural and underprivileged children by creating opportunities and access to sports facilities and training.

• Indigenous Sports:

• The scheme promotes traditional and indigenous sports of India, such as Kabaddi, Kho-Kho, and Mallakhamb, to preserve and popularize these games.

• Benefits for Athletes:

• Selected athletes under the scheme receive a structured training program, including expert coaching, access to facilities, and nutrition support.

• The scholarship of INR 5 lakhs per annum ensures financial stability and enables athletes to focus on their training without financial stress.

• Impact of the Scheme:

• Since its inception, the scheme has successfully identified and nurtured thousands of young athletes, many of whom have gone on to represent India in international competitions.

• It has significantly boosted India’s sports ecosystem by providing the necessary infrastructure and resources for developing sports in the country.

Important Points

• Key Objectives of the Khelo India Scheme:

• To revive the sports culture in India at the grassroots level.

• To establish a strong sporting infrastructure in both urban and rural regions of India.

• To identify and nurture talented athletes for national and international competitions.

• To promote fitness and wellness among citizens through sports activities.

• Khelo India Youth Games:

YourMockTest.com — Free Study Material

• It is an annual event that showcases young athletes under the age of 17 and 21 years.

• The event includes competitions in multiple sports disciplines and serves as a platform for identifying future talent.

• Khelo India University Games:

• It focuses on promoting sports at the university level and encourages students to take up sports along with academics.

• The event provides a competitive platform for university athletes and highlights the importance of balancing education and sports.

Q30. Answer: (b) 1981

The correct answer is 1981.

Key Points

• The first cases of the disease now known as Acquired Immunodeficiency Syndrome (AIDS) were identified in the United States in 1981.

• In June 1981, the U.S. Centers for Disease Control and Prevention (CDC) published a report describing cases of a rare lung infection, Pneumocystis carinii pneumonia (PCP), in five young, previously healthy gay men in Los Angeles.

• During the same period, cases of a rare cancer, Kaposi's sarcoma, were reported in young gay men in New York and California. These conditions signaled the emergence of a new, unknown disease.

• The term AIDS was coined in 1982, and the disease was recognized as a severe weakening of the immune system caused by an infection.

• In 1983, researchers identified the virus responsible for AIDS, now known as the Human Immunodeficiency Virus (HIV).

Additional Information

• Human Immunodeficiency Virus (HIV):

• HIV is the virus that causes AIDS. It attacks the body's immune system, specifically the CD4 cells (T cells), which help the immune system fight infections.

• Without treatment, HIV reduces the number of CD4 cells in the body, making the person more vulnerable to infections and certain cancers.

• HIV is primarily spread through unprotected sexual contact, sharing of needles, transfusion of contaminated blood, and from mother to child during childbirth or breastfeeding.

• Global Impact:

• AIDS has caused a global pandemic, with millions of people affected worldwide since its discovery in 1981.

• According to UNAIDS, as of 2023, approximately 38 million people are living with HIV worldwide.

• Sub-Saharan Africa remains the region most severely affected, with an estimated two-thirds of all people living with HIV located in this region.

• Prevention and Treatment:

• Key prevention strategies include safe sex practices, use of antiretroviral therapy (ART) for HIV-positive individuals, and education on reducing transmission risks.

• ART does not cure HIV but can control the virus, enabling individuals to live longer, healthier lives and reducing the risk of transmission.

• The development of pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) has further advanced HIV prevention.

• Milestones in HIV/AIDS Research:

• The first HIV test, known as the ELISA test, was developed in 1985.

• The first antiretroviral drug, AZT (zidovudine), was approved for use in 1987.

• In 1996, the advent of combination antiretroviral therapy, also known as Highly Active Antiretroviral Therapy (HAART), revolutionized treatment and significantly improved life expectancy for HIV-positive individuals.

• Global Initiatives:

• UNAIDS was established in 1996 to coordinate the global response to the AIDS pandemic.

• The 90-90-90 targets were introduced to ensure that by 2020, 90% of people living with HIV would know their status, 90% of those diagnosed would receive treatment, and 90% of those treated would achieve viral suppression.

• In 2021, new targets were set to ensure 95-95-95 by 2030 to end the AIDS epidemic as a public health threat.

Q31. Answer: (c) Dharma-Maharaja

The correct answer is Dharma-Maharaja.

Key Points

• The Pallava kings adopted the title Dharma-Maharaja to signify that their governance was guided by the principles of Dharmashastras, which are ancient Hindu scriptures outlining moral and ethical conduct.

YourMockTest.com — Free Study Material

• The term Dharma refers to righteousness, moral law, and duty, emphasizing the ethical responsibilities of rulers to uphold justice, fairness, and societal welfare.

• By using the title Dharma-Maharaja, Pallava rulers highlighted their commitment to ruling in accordance with Hindu philosophical traditions and maintaining the sanctity of governance.

• The Pallava dynasty was known for its contributions to art, architecture, and religious values, evident in structures such as the rock-cut temples of Mahabalipuram.

• Other titles like Maharajadhiraja and Chakravarti were common among Indian monarchs, but Dharma-Maharaja specifically underscored the Pallavas' adherence to spiritual and ethical principles.

Additional Information

• Pallava Dynasty:

• The Pallavas ruled South India from the 3rd to 9th century CE.

• They were prominent in regions corresponding to modern-day Tamil Nadu and parts of Andhra Pradesh.

• The Pallavas are renowned for fostering Hindu culture, literature, and temple architecture.

• Examples of their architectural marvels include the Shore Temple and Pancha Rathas at Mahabalipuram.

• Dharmashastras:

• The Dharmashastras are ancient Hindu texts composed in Sanskrit that provide guidelines on law, ethics, and social duties.

• They cover topics like governance, justice, societal roles, and the moral obligations of individuals.

• Important Dharmashastras include texts like the Manusmriti and Yajnavalkya Smriti.

• The Pallavas likely adopted teachings from these texts to ensure a righteous and ethical rule.

• Titles of Indian Kings:

• Maharajadhiraja: This title translates to "king of kings" and was used to signify supremacy over other rulers.

• Chakravarti: Refers to an emperor or universal ruler, emphasizing territorial dominance and political authority.

• Dharma-Maharaja: This unique title indicates adherence to moral and ethical governance, as seen in the Pallava dynasty.

• Rajadhiraja: Indicates a high-ranking monarch, often subordinate to Maharajadhiraja.

• Mahabalipuram:

• Mahabalipuram, also known as Mamallapuram, is famous for its UNESCO World Heritage-listed monuments.

• The site includes rock-cut temples, caves, and sculptures that reflect Pallava art and architecture.

• These monuments were primarily constructed during the reign of Narasimhavarman I, a notable Pallava ruler.

Important Points

• Hindu Philosophy: The principles of governance during the Pallava dynasty were deeply influenced by Hindu philosophical traditions like the concept of Dharma, which emphasizes righteous conduct.

• Legacy: The Pallavas left a profound impact on Indian culture through their contributions to religion, art, and architecture.

• Education and Literature: Pallava rulers patronized scholars and encouraged the development of literature, particularly in Tamil and Sanskrit.

• Temple Architecture: The Pallavas pioneered the Dravidian style of temple construction, a hallmark of South Indian architecture.

Q32. Answer: (b) 6 months

The correct answer is 6 months.

Key Points

• Justice B.R. Gavai was appointed as the Chief Justice of India (CJI) on May 19, 2023, succeeding Justice D.Y. Chandrachud.

• The tenure of Justice B.R. Gavai as the Chief Justice of India is notably short, lasting for a period of 6 months. He is set to retire on November 23, 2023, upon reaching the retirement age of 65 years as per the Constitution of India.

• As per Article 124(2) of the Indian Constitution, a Supreme Court judge, including the Chief Justice of India, serves until they attain the age of 65 years.

• The short tenure of Justice Gavai underscores the rotational nature of appointments to the position of Chief Justice of India, which ensures that senior judges of the Supreme Court get the opportunity to serve as CJI.

• Justice Gavai is the second Dalit Chief Justice of India after Justice K.G. Balakrishnan, making his appointment historically significant in terms of representation in the judiciary.

Additional Information

• Appointment of the Chief Justice of India:

• The Chief Justice of India is appointed by the President of India under Article 124(2) of the Constitution.

• The appointment is based on the seniority principle among the judges of the Supreme Court.

• Before appointing the Chief Justice, the outgoing CJI traditionally recommends their successor to the President.

• Tenure and Retirement:

• The retirement age for Supreme Court judges, including the Chief Justice, is 65 years, as per the Constitution.

• The tenure of a Chief Justice may vary depending on their age at the time of appointment, often leading to some CJIs having relatively short terms.

• Justice B.R. Gavai's tenure is an example of such a short term, as he is set to retire in November 2023, six months after his appointment.

• Justice B.R. Gavai's Career Highlights:

• Justice Gavai began his judicial career in the Bombay High Court, where he served as a judge for over a decade.

• He was elevated to the Supreme Court of India on May 24, 2019.

• Justice Gavai has delivered several landmark judgments during his career and is known for his expertise in constitutional and civil law.

• Historical Significance:

• Justice Gavai is the second Dalit Chief Justice of India, following Justice K.G. Balakrishnan, highlighting the importance of inclusivity in the judicial system.

• His appointment signifies the commitment to ensuring representation of all communities in the higher judiciary, contributing to the principles of social justice enshrined in the Constitution.

• Important Points:

• The judiciary in India is guided by the principles of independence, impartiality, and inclusivity, and the appointment of Chief Justices reflects these values.

• The Chief Justice of India plays a pivotal role as the head of the judiciary and the administrative head of the Supreme Court, ensuring the smooth functioning of the judicial system.

• Short tenures of CJIs, such as that of Justice Gavai, demonstrate the rotational system that allows multiple senior judges to serve as the head of the judiciary, upholding the principle of equality and fairness.

Q33. Answer: (d) 2003

The correct answer is 2003.

Key Points

• The 91st Amendment to the Indian Constitution was enacted in the year 2003. This amendment holds significant importance in ensuring political stability and reducing defections in Indian politics.

• It introduced changes to the Tenth Schedule of the Constitution, which deals with the anti-defection law. This amendment strengthened the provisions to discourage political defections.

• The amendment made it mandatory that the size of the Council of Ministers, including the Prime Minister or Chief Minister, should not exceed 15% of the total strength of the Lok Sabha or the respective State Legislative Assembly.

• The anti-defection law was also tightened by disallowing disqualification exemptions in case of splits involving less than one-third of the members of a political party.

• The 91st Amendment Act was a response to growing concerns about political instability caused by defections and bloated cabinets, which often led to inefficiency and wastage of public resources.

Additional Information

• Anti-Defection Law:

• Introduced through the 52nd Amendment Act of 1985, the anti-defection law was included in the Tenth Schedule of the Constitution.

• It aimed to curb political defections by disqualifying members who defected from their parties after elections.

• The 91st Amendment further strengthened the provisions of the anti-defection law by removing the loophole that allowed splits involving one-third of a party's members.

• Size of the Council of Ministers:

• Before the 91st Amendment, there was no constitutional limit on the size of the Council of Ministers, which led to unwieldy and bloated cabinets.

• The amendment introduced a cap, limiting the size of the Council of Ministers to 15% of the total strength of the Lok Sabha or the State Legislative Assembly.

• Significance of the 91st Amendment:

• It promoted political stability by discouraging defections and ensuring that elected representatives stayed loyal to their parties.

• The limitation on the size of cabinets ensured efficiency and reduced the burden on public finances.

• The amendment reinforced the principles of democracy and accountability by holding legislators accountable for their actions.

• Other Constitutional Amendments Related to Political Reforms:

• The 52nd Amendment (1985) introduced the anti-defection law in the Tenth Schedule.

• The 73rd and 74th Amendments (1992) provided constitutional status to Panchayati Raj Institutions and Urban Local Bodies,

respectively.

• The 97th Amendment (2011) recognized the right to form cooperatives as a fundamental right under Article 19.

Important Points

• Background of the 91st Amendment:

• The amendment was introduced in response to the growing menace of political defections and the practice of forming oversized cabinets to accommodate defectors.

• The political scenario in the late 20th century witnessed frequent instability due to defections, leading to the need for stricter laws.

• Impact of the Amendment:

• The amendment has been instrumental in ensuring political stability in both the central and state governments.

• It has reduced the practice of offering ministerial positions to legislators as an incentive for defection.

Q34. Answer: (c) Fifth Schedule

The correct answer is Fifth Schedule.

Key Points

• The Fifth Schedule of the Indian Constitution pertains to the administration and control of Scheduled Areas and Scheduled Tribes in states other than the Northeastern states.

• It provides for the establishment of a Tribes Advisory Council (TAC) in each state having Scheduled Areas. These councils advise on matters related to the welfare and advancement of Scheduled Tribes.

• The President of India is empowered to declare certain areas as Scheduled Areas and can also modify or rescind such declarations. The administration of these areas is subject to special provisions.

• The Governor of the state, under the Fifth Schedule, has the authority to make regulations for the peace and good governance of these areas, including restricting land transfers and regulating the allotment of land to members of Scheduled Tribes.

• The Fifth Schedule ensures the protection of tribal interests, particularly in terms of their land rights and cultural heritage, by incorporating specific provisions for their governance.

Additional Information

• Sixth Schedule:

• The Sixth Schedule pertains to the administration of tribal areas in the Northeastern states, including Assam, Meghalaya, Tripura, and Mizoram.

• It provides for the formation of Autonomous District Councils (ADCs) that have legislative, judicial, and executive powers to govern the tribal areas autonomously.

• The ADCs have the power to make laws on various subjects such as land management, forest conservation, water resources, and village administration.

• Ninth Schedule:

• The Ninth Schedule was introduced by the First Amendment Act, 1951 to protect laws related to land reforms and the abolition of the zamindari system from being challenged in courts.

• Laws placed under this schedule are immune from judicial review, even if they violate fundamental rights, as per Article 31B of the Constitution.

• However, the Kesavananda Bharati case (1973) clarified that laws under the Ninth Schedule can be reviewed if they violate the basic structure of the Constitution.

• Seventh Schedule:

• The Seventh Schedule of the Constitution delineates the division of powers between the Union and State governments through three lists: the Union List, State List, and Concurrent List.

• Subjects in the Union List are under the exclusive jurisdiction of the central government, while those in the State List fall under state jurisdiction. Subjects in the Concurrent List are shared by both the Union and State governments.

• Examples of subjects under these lists include defense (Union List), police (State List), and education (Concurrent List).

• Important Points:

• Scheduled Areas are defined as areas that are predominantly inhabited by Scheduled Tribes and require special protection and governance due to their socioeconomic conditions.

• The Fifth Schedule applies to states such as Rajasthan, Odisha, Madhya Pradesh, and Jharkhand, where tribal populations are significant.

• The provisions under this schedule aim to maintain a balance between the preservation of tribal culture and traditions and the integration of these communities into mainstream society.

Q35. Answer: (b) Connecting to the world economy

The correct answer is Connecting to the world economy.

Key Points

• Globalisation in economic terms refers to the integration of a country's economy with the global economy, characterized by the free flow of goods, services, capital, technology, and labor across international borders.

• It involves the reduction of trade barriers and tariffs, allowing countries to engage in international trade and investment freely.

• Globalisation promotes economic interdependence, leading to increased cooperation among nations for mutual benefits, such as economic growth, technological advancements, and cultural exchange.

• The concept includes the establishment of global supply chains, where production processes are spread across different countries to optimize costs and efficiency.

• Major institutions like the World Trade Organization (WTO), International Monetary Fund (IMF), and World Bank play a critical role in fostering and regulating globalisation.

Additional Information

• Characteristics of Globalisation:

• Free Trade: Reduction of tariffs and import-export restrictions to facilitate trade between nations.

• Technological Integration: Adoption and exchange of advanced technologies globally, boosting innovation and industrial growth.

• Economic Integration: Merging of financial markets, international investments, and the establishment of multinational corporations.

• Global Supply Chains: Goods and services are sourced and produced in multiple countries, leveraging comparative advantages.

• Benefits of Globalisation:

• Enhances economic growth by providing access to larger markets and international investments.

• Encourages cultural exchange and the sharing of ideas, values, and traditions.

• Boosts technological advancement through global collaboration and competition.

• Creates job opportunities by attracting foreign direct investment (FDI).

• Challenges of Globalisation:

• Income Inequality: Disparities in wealth distribution between developed and developing nations.

• Loss of Cultural Identity: Overemphasis on global culture may overshadow local traditions and practices.

• Environmental Concerns: Increased industrialization and transportation contribute to pollution and climate change.

• Dependency Risks: Over-reliance on global supply chains may lead to vulnerabilities during crises (e.g., COVID-19 pandemic).

• Globalisation in India:

• India embraced globalisation in 1991 with the introduction of the Liberalization, Privatization, and Globalization (LPG) reforms under the leadership of Prime Minister P. V. Narasimha Rao and Finance Minister Dr. Manmohan Singh.

• These reforms significantly opened up India's economy to foreign trade and investment, fostering economic growth.

• India became a member of the World Trade Organization (WTO) in 1995, further integrating with the global economy.

• Key sectors impacted include IT, pharmaceuticals, manufacturing, and services.

Important Points

• Key Globalisation Milestones:

• The establishment of the World Trade Organization (WTO) in 1995 to oversee global trade rules.

• The creation of regional trade agreements like the European Union (EU), NAFTA (now USMCA), and ASEAN.

• The rise of multinational corporations like Apple, Amazon, and Toyota, reflecting economic interdependence.

• Globalisation and Technology:

• Technological advancements in communication (e.g., the internet) have accelerated globalisation.

• E-commerce platforms like Amazon and Alibaba enable global trade at an unprecedented scale.

Q36. Answer: (a) Pandyas

The correct answer is Pandyas.

Key Points

• The Pandyas were one of the prominent dynasties of ancient South India, known for their unique administrative systems, including the establishment of village-level governance through committees.

• The five village committees (variyams), such as Neernilai Variyam (water management committee) and Needhi Variyam (justice committee), were integral to their governance. These committees played significant roles in managing local affairs and ensuring efficient administration.

• The Neernilai Variyam was responsible for regulating water resources, reflecting the agrarian nature of the society and the importance of irrigation in South India during the Pandya rule.

YourMockTest.com — Free Study Material

• The Needhi Variyam served as a judicial body to resolve disputes and ensure justice at the village level, showcasing a structured approach to legal administration.

• The Pandya dynasty, flourishing during the 6th to 14th centuries CE, was headquartered in regions like Madurai and was instrumental in fostering art, culture, and architecture alongside administrative innovations.

Additional Information

• Other Features of Pandya Administration:

• The Pandya kings had a well-organized centralized administration, with a king as the supreme authority.

• Local administration was divided into nadus (regional divisions) and further subdivided into villages, with village assemblies playing a crucial role in governance.

• The village committees (variyams) were highly specialized in their functions, such as irrigation, justice, taxation, and temple management.

• Their administrative structure was deeply influenced by democratic principles, with active participation of local people in decision-making processes.

• Other Dynasties for Comparison:

• Guptas: Known as the "Golden Age" of India (4th to 6th century CE), the Gupta Empire was famous for advancements in science, mathematics, and literature, but they did not have the unique village committees like the Pandyas.

• Satavahanas: The Satavahanas (2nd century BCE to 3rd century CE) had a centralized administrative system with provincial governors, but their governance did not emphasize village-level committees as seen in the Pandya dynasty.

• Mauryas: The Mauryan Empire (321–185 BCE) had a highly centralized administrative structure with royal officials overseeing provinces, but village-level committees were not a notable feature of their governance.

• Importance of Village Committees:

• These committees ensured localized governance, efficient resource utilization, and a participatory approach to administration.

• They also reflect the agrarian focus and self-sustaining nature of ancient Indian villages.

• Such systems highlight the advanced administrative thinking of ancient Indian rulers like the Pandyas, who emphasized inclusivity and specialization in governance.

• Pandya Legacy:

• The Pandyas were patrons of Sangam literature, which provides valuable insights into their administrative, social, and cultural practices.

• Their contributions to temple architecture, such as the Meenakshi Temple in Madurai, underline their emphasis on art and religion.

• Their efficient governance system, including the village committees, laid the foundation for future administrative models in South India.

Q37. Answer: (b) Russia, late 2025

The correct answer is Russia, late 2025.

Key Points

• The Kaveri Derivative Engine (KDE) is a part of India’s indigenous engine development program for aircraft, which is being developed to strengthen India’s defense and aerospace capabilities.

• The final in-flight testing of the engine is scheduled to take place in Russia, a country with advanced aerospace testing facilities, by late 2025.

• The selection of Russia for testing highlights the collaborative ties between India and Russia in defense and aerospace technologies.

• This step is crucial as it will ensure that the engine meets all necessary operational and safety standards before being certified for use in aircraft.

• The KDE is derived from the indigenous Kaveri engine, which was initially developed for the Tejas Light Combat Aircraft (LCA) program but faced challenges in meeting performance benchmarks.

Additional Information

• Kaveri Engine Development:

• The Kaveri engine project was initiated in the 1980s by the Gas Turbine Research Establishment (GTRE), a DRDO lab, to develop an indigenous engine for India's fighter jets.

• Despite technological challenges, the Kaveri program laid the foundation for advancements in indigenous gas turbine technology.

• Collaboration with Russia:

• India and Russia have a longstanding relationship in defense and aerospace, with Russia providing technical expertise and infrastructure for testing and evaluation.

• Russia’s advanced testing facilities are critical for the rigorous evaluation of the KDE under real-world conditions.

• Applications of the Kaveri Derivative Engine:

• The KDE is expected to be used in Unmanned Aerial Vehicles (UAVs) and other aerial platforms, enhancing India’s self-reliance in defense technology.

• It may also serve as a stepping stone for future indigenous fighter jet engines.

• Importance of In-Flight Testing:

• In-flight testing is essential to verify the performance, reliability, and safety of the engine under various operational conditions.

• It helps identify and rectify any issues before mass production or deployment in defense operations.

Important Points

• Global Testing Standards:

• Countries like Russia have state-of-the-art facilities to conduct specialized tests such as high-altitude performance and extreme weather trials.

• These tests ensure the engine can withstand diverse and challenging operational environments.

• Indigenous Capability Development:

• The KDE initiative aligns with India’s Make in India and Atmanirbhar Bharat (self-reliant India) missions, aiming to reduce dependency on foreign defense equipment.

• Successful certification of the KDE will mark a significant milestone in India’s aerospace sector.

Q38. Answer: (c) Chemical fertilisers

The correct answer is Chemical fertilisers.

Key Points

• Technological innovation played a pivotal role in the success of the Green Revolution, particularly in countries like India. The introduction of High Yielding Variety (HYV) seeds significantly boosted agricultural productivity.

• The success of HYV seeds was contingent upon the availability of chemical fertilisers, as these seeds required higher inputs of nutrients to achieve their full yield potential.

• Chemical fertilisers provided essential nutrients such as nitrogen (N), phosphorus (P), and potassium (K) to crops, which are critical for growth and high yields.

• India saw a dramatic increase in food grain production during the Green Revolution period (1960s-70s) due to the combined use of HYV seeds, chemical fertilisers, and advanced irrigation techniques.

• Other inputs like forest cover, hand tools, and organic compost were not sufficient to meet the nutrient requirements of HYV seeds, making chemical fertilisers indispensable for their success.

• Hence, the correct answer is Chemical fertilisers.

Additional Information

• High Yielding Variety (HYV) Seeds:

• HYV seeds were first introduced in India during the 1960s as part of the Green Revolution.

• These seeds were developed to produce more grains per hectare compared to traditional seeds.

• They required intensive agricultural inputs such as chemical fertilisers, pesticides, and regular irrigation for maximum productivity.

• Examples include wheat varieties like Kalyan Sona and Sonora 64.

• Role of Chemical Fertilisers:

• Fertilisers supply essential nutrients like nitrogen, phosphorus, and potassium, which are vital for plant growth and development.

• The use of chemical fertilisers in India saw a significant increase during the Green Revolution, contributing to the country’s ability to achieve self-sufficiency in food grains.

• India became one of the largest producers of food grains globally due to the use of fertilisers.

• Popular fertilisers include urea (nitrogen), DAP (diammonium phosphate), and potash.

• Green Revolution in India:

• The Green Revolution refers to the period during the 1960s and 1970s when India achieved rapid agricultural growth by adopting modern farming techniques.

• Key aspects included the introduction of HYV seeds, expansion of irrigation facilities, and use of fertilisers and pesticides.

• It was spearheaded by Dr. M.S. Swaminathan, often referred to as the "Father of the Green Revolution in India."

• States like Punjab, Haryana, and Uttar Pradesh were the major beneficiaries.

• Limitations of Organic Compost:

• While organic compost is beneficial for soil health, it lacks the high nutrient concentration required for HYV seeds to achieve their potential yields.

YourMockTest.com — Free Study Material

• Organic compost provides nutrients slowly over time, which is insufficient for the intensive needs of high-yield crops.

• It is not a substitute for chemical fertilisers in large-scale agriculture.

Important Points

• Forest Cover:

• Forest cover helps in maintaining ecological balance, but it does not provide the nutrients required for HYV seeds.

• It plays a role in water conservation and climate regulation but is unrelated to the Green Revolution's technological advancements.

• Hand Tools:

• Traditional hand tools were inadequate for large-scale farming during the Green Revolution.

• Modern machinery like tractors and harvesters replaced hand tools for efficient farm management.

• Impact of the Green Revolution:

• India achieved self-sufficiency in food grains, reducing dependence on imports.

• It led to socio-economic changes, including improved incomes for farmers and reduced poverty in rural areas.

• However, it also caused environmental concerns such as soil degradation, water pollution, and overuse of chemical fertilisers.

Q39. Answer: (b) Australia

The correct answer is Australia.

Key Points

• The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is a free trade agreement comprising 11 countries across the Asia-Pacific region.

• On 1 January 2025, Australia took over the Chairmanship of the CPTPP, succeeding the previous Chair.

• The chairing role in the CPTPP is significant as it involves the coordination of meetings, ensuring the implementation of agreements, and facilitating discussions on new members or amendments.

• Australia's Chairmanship reflects its strong commitment to promoting free trade and economic integration in the Asia-Pacific region.

• The CPTPP aims to reduce trade barriers, promote fair competition, and establish a modern framework for international trade, which aligns with Australia's economic interests.

Additional Information

• Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP):

• The CPTPP is an ambitious trade agreement signed on 8 March 2018, involving 11 member countries: Australia, Canada, Japan, Mexico, New Zealand, Singapore, Vietnam, Peru, Malaysia, Chile, and Brunei.

• It was formed after the withdrawal of the United States from the original Trans-Pacific Partnership (TPP) in 2017.

• The agreement covers a wide range of areas, including trade in goods and services, intellectual property, labor standards, and environmental regulations.

• The CPTPP represents approximately 13.4% of the global economy, making it one of the largest free trade agreements in the world.

• Australia's Role:

• Australia is a founding member of the CPTPP and has actively participated in its negotiations and implementation.

• As Chair, Australia will play a pivotal role in managing the strategic direction of the agreement and addressing challenges faced by member nations.

• Australia's economy benefits significantly from the CPTPP through enhanced market access for its goods and services, particularly in the Asia-Pacific region.

• Key Features of CPTPP:

• The agreement eliminates 95% of tariffs among member countries, promoting free trade and economic growth.

• It includes provisions for labor rights, environmental protection, and intellectual property, ensuring a balance between trade liberalization and social responsibility.

• The CPTPP promotes digital trade and e-commerce by reducing barriers and enhancing data flows across borders.

• Potential New Members:

• Several countries, including the United Kingdom, South Korea, and China, have expressed interest in joining the CPTPP, reflecting its growing significance in global trade.

• Australia, as Chair, will be responsible for facilitating discussions on the accession of new members and ensuring the integrity of the agreement.

Important Points

• Leadership Rotation:

• The Chairmanship of the CPTPP rotates among member countries, allowing each nation to play an active role in shaping the agreement's agenda.

• Economic Significance:

• The CPTPP promotes economic integration, increases trade volumes, and strengthens supply chains among member countries.

• It is particularly beneficial for small and medium-sized enterprises (SMEs) due to reduced trade barriers and simplified customs procedures.

• Impact on Global Trade:

• The CPTPP is seen as a counterbalance to other major trade agreements, such as the Regional Comprehensive Economic Partnership (RCEP) and the European Union's trade initiatives.

• It enhances the strategic influence of member countries in global trade negotiations.

Q40. Answer: (a) Sardar Vallabhbhai Patel

The correct answer is Sardar Vallabhbhai Patel.

Key Points

• Sardar Vallabhbhai Patel, also known as the "Iron Man of India," played a pivotal role in the integration of over 560 princely states into the Indian Union after Independence in 1947.

• Patel served as the first Deputy Prime Minister and Home Minister of India and utilized his diplomatic skills and authority to persuade princely states to join the Indian Union.

• He implemented the strategy of signing the Instrument of Accession, ensuring that the states would cede their control over defense, foreign affairs, and communications to the Indian government.

• Patel was supported by V.P. Menon, the Secretary of the States Department, in devising and implementing the plans for integration.

• Through a mix of diplomacy, negotiation, and in some cases military intervention (e.g., Hyderabad), Patel ensured the complete territorial integrity of India. This historic achievement earned him the title of the "Unifier of India."

Additional Information

• Sardar Vallabhbhai Patel:

• Born on 31 October 1875 in Nadiad, Gujarat, he was a prominent leader of the Indian National Congress and played a crucial role in India's freedom struggle.

• He was posthumously awarded the Bharat Ratna, India's highest civilian honor, in 1991.

• His statue, known as the Statue of Unity, was unveiled in 2018 in Gujarat and is the world's tallest statue.

• Integration of Princely States:

• India had 562 princely states at the time of Independence, governed by local rulers who were given the choice to join India, Pakistan, or remain independent.

• States like Hyderabad, Junagadh, and Kashmir posed challenges, but Patel's strategic interventions ensured their eventual accession.

• The Indian Constitution later recognized their territories as part of India.

• Instrument of Accession:

• This legal document was designed for the princely states to transfer control over their defense, foreign affairs, and communications to the Indian government.

• It was a crucial tool that facilitated the peaceful integration of most states.

• Lord Mountbatten:

• As the last Viceroy of India, he supported Patel's efforts and played a guiding role in ensuring peaceful negotiations with princely states.

• However, his role was limited compared to Patel, who executed the integration process.

• Challenges During Integration:

• States like Hyderabad and Junagadh resisted joining India, leading to military interventions such as Operation Polo in Hyderabad.

• Kashmir's accession involved complexities due to the tribal invasion and required military assistance.

Important Points

• Legacy of Integration:

• The integration of princely states laid the foundation for a unified and sovereign India.

• It reinforced the principle of national unity and territorial integrity, which continues to be a cornerstone of India's governance.

• Other Contributors:

• Although Patel was the chief architect, leaders like Jawaharlal Nehru and Rajendra Prasad also contributed to nation-building in different capacities.

• The collaboration between Patel and V.P. Menon was instrumental in achieving this monumental task.

• Impact:

• The successful integration ensured the political stability of post-Independence India, paving the way for economic and administrative reforms.

• This achievement remains one of the greatest feats in modern Indian history.

Q41. Answer: (c) 16

Shortcut Trick

Product of numbers = H.C.F. × L.C.M.

52 × Other number = 4 × 208

Other number = (4 × 208) ÷ 52 = 4 × 4 = 16

Therefore The correct answer is 16.

Alternate Method

Given:

H.C.F. = 4

L.C.M. = 208

First Number (n1) = 52

Formula Used:

n1 × n2 = H.C.F. × L.C.M.

Calculations:

=> 52 × n2 = 4 × 208

=> n2 = (4 × 208) ÷ 52

=> n2 = 832 ÷ 52

=> n2 = 16

Therefore The correct answer is 16.

Additional Information

Definition of H.C.F.

Highest Common Factor is the largest positive integer that divides each of the numbers without leaving a remainder.

Definition of L.C.M.

Least Common Multiple is the smallest positive integer that is divisible by both numbers.

Relation for more than two numbers

Note that the formula Product = H.C.F. × L.C.M. holds strictly for two numbers only.

Q42. Answer: (a) 192 m

Shortcut Trick

Breadth = Area ÷ Length = 1904 ÷ 68 = 28 m.

Perimeter = 2 × (Length + Breadth) = 2 × (68 + 28) = 2 × 96 = 192 m.

Therefore The correct answer is 192 m.

Alternate Method

Given:

Length (L) = 68 m

Area (A) = 1904 m^2

Formula Used:

Area of rectangle = Length × Breadth

Perimeter of rectangle = 2 × (Length + Breadth)

Calculations:

=> 1904 = 68 × Breadth

=> Breadth = 1904 ÷ 68

=> Breadth = 28 m

=> Perimeter = 2 × (68 + 28)

=> Perimeter = 2 × 96

=> Perimeter = 192 m

YourMockTest.com — Free Study Material

Therefore The correct answer is 192 m.

Additional Information

Diagonal of a Rectangle

The distance between opposite vertices is given by $d = \sqrt{(L^2 + B^2)}$.

Square Properties

For a square, Area = side² and Perimeter = 4 × side.

Unit Conversion

1 hectare = 10,000 m²; 1 m = 100 cm.

Q43. Answer: (a) 1,440

Shortcut Trick

Net percentage interest = Rate × Time

=> 8% × 6 = 48%

Simple Interest = 48% of Rs. 3,000

=> 0.48 × 3,000 = Rs. 1,440

Therefore The correct answer is Rs. 1,440.

Alternate Method

Given:

Principal (P) = Rs. 3,000

Rate of Interest (R) = 8% per annum

Time Period (T) = 6 years

Formula Used:

Simple Interest (SI) = (P × R × T) ÷ 100

Calculations:

=> SI = (3000 × 8 × 6) ÷ 100

=> SI = 30 × 8 × 6

=> SI = 240 × 6

=> SI = Rs. 1,440

Therefore The correct answer is Rs. 1,440.

Additional Information

Total Amount (A)

The total sum returned after the time period including interest. Formula: A = P + SI = P(1 + RT/100).

Compound Interest (CI)

Interest calculated on the principal and the accumulated interest of previous periods. Formula: CI = P[(1 + R/100)^T − 1].

Rule of 72

A quick way to estimate how long it will take for an investment to double at a fixed annual rate of interest: Years to double ≈ 72 ÷ Interest Rate.

Q44. Answer: (d) 48% gain

Shortcut Trick

Given: 25 × Selling Price (SP) = 37 × Cost Price (CP).

Ratio of SP to CP: SP ÷ CP = 37 ÷ 25.

Profit = 37 − 25 = 12 units.

Profit% = (Profit ÷ CP) × 100 = (12 ÷ 25) × 100.

Profit% = 12 × 4 = 48%.

Therefore The correct answer is 48% gain.

Alternate Method

Given → SP of 25 books = CP of 37 books.

Formulas: Profit = SP − CP | Profit% = (Profit ÷ CP) × 100.

=> Let CP of 1 book be 1 unit.

=> CP of 25 books = 25 units.

=> SP of 25 books = CP of 37 books = 37 units.

=> Profit = SP − CP = 37 − 25 = 12.

=> Profit% = (12 ÷ 25) × 100 = 48%.

Therefore The correct answer is 48% gain.

Additional Information

Cost Price & Selling Price Relationship

When the CP of x articles equals the SP of y articles, the gain or loss depends on whether x is greater or less than y. Profit% = [(x − y) ÷ y] × 100.

Profit and Loss Percentage

Profit or Loss percentages are always calculated on the Cost Price unless specified otherwise in the problem.

Q45. Answer: (a) 1600

Shortcut Trick

Increased Value = 100% + 80% = 180%

Given, 180% → 2880

Original Number (100%) = (2880 ÷ 180) × 100

=> 16 × 100 = 1600

Therefore The correct answer is 1600.

Alternate Method

Given: Percentage increase = 80%, Resultant number = 2880

Calculations:

Let the original number be x.

=> x + 80% of x = 2880

=> x + (80/100) × x = 2880

=> x + 0.8x = 2880

=> 1.8x = 2880

=> x = 2880 ÷ 1.8

=> x = 28800 ÷ 18

=> x = 1600

Therefore The correct answer is 1600.

Additional Information

Percentage Increase Formula

New Value = Original Value × (100 + Increase %)/100. This is the base for all markup and profit calculations.

Fractional Equivalent

80% increase can be written as a multiplier of 1.8 or a fraction 9/5. To find the original, multiply the result by 5/9.

Percentage Decrease

New Value = Original Value × (100 − Decrease %)/100. Used for depreciation and discount scenarios.

Q46. Answer: (d) 195

Shortcut Trick

Sum of first two = 80 × 2 = 160

Sum of first three = 160 + 105 = 265

Sum of remaining two = 655 − 265 = 390

Average of remaining two = 390 ÷ 2 = 195

Therefore The correct answer is 195.

Alternate Method

Given:

Sum of 5 numbers = 655

Average of first two numbers = 80

Third number = 105

Formula Used:

Average = (Sum of observations) ÷ (Number of observations)

=> Sum of the first two numbers = 80 × 2 = 160

YourMockTest.com — Free Study Material

=> Sum of the first three numbers = 160 + 105 = 265

=> Sum of the remaining two numbers = 655 − 265 = 390

=> Average of the remaining two numbers = 390 ÷ 2 = 195

Therefore The correct answer is 195.

Additional Information

Arithmetic Mean

The average of a set of numbers is the sum of the numbers divided by the count of the numbers. Formula: Average = Σx ÷ n.

Calculating Sum from Average

The sum of items can be found by multiplying the average by the total number of items. Sum = Average × Number of observations.

Weighted Average

When groups have different counts, the total average = (n1a1 + n2a2) ÷ (n1 + n2).

Q47. Answer: (b) 244

Shortcut Trick

CP of 12 sharpeners = 150

CP of 1 sharpener = 150 ÷ 12 = 12.5

SP of 1 sharpener = 43

Profit per sharpener = 43 − 12.5 = 30.5

Profit% = (30.5 ÷ 12.5) × 100 = 244%

Therefore The correct answer is 244%.

Alternate Method

Given: CP of 12 items = 150; SP of 1 item = 43.

Formulas: Profit = SP − CP | Profit% = (Profit ÷ CP) × 100

=> Cost Price (CP) of 1 unit = 150 ÷ 12 = 12.5

=> Selling Price (SP) of 1 unit = 43

=> Profit = 43 − 12.5 = 30.5

=> Profit percentage = (30.5 ÷ 12.5) × 100

=> Profit percentage = 2.44 × 100 = 244%

Therefore The correct answer is 244%.

Additional Information

Unitary Method in Profit and Loss

Always calculate the CP and SP for the same quantity (usually 1 unit) to find the profit or loss percentage accurately.

Profit Percentage

Profit% is the relative gain over the original Cost Price, expressed as: (Total Profit ÷ Cost Price) × 100.

Q48. Answer: (d) 6x2 -8x -4

Shortcut Trick

Expand the expression and group like terms together immediately.

$x(3x - 8) + 3(x^2 - 5) + 11$

$=> 3x^2 - 8x + 3x^2 - 15 + 11$

$=> (3x^2 + 3x^2) - 8x + (-15 + 11)$

$=> 6x^2 - 8x - 4$

Therefore The correct answer is $6x^2 - 8x - 4$.

Alternate Method

Given: $x(3x - 8) + 3(x^2 - 5) + 11$

Formula Used: Distributive Property $a(b + c) = ab + ac$

Calculations:

Step 1: Multiply x with (3x − 8)

$=> x \times 3x - x \times 8 = 3x^2 - 8x$

Step 2: Multiply 3 with $(x^2 - 5)$

$=> 3 \times x^2 - 3 \times 5 = 3x^2 - 15$

Step 3: Combine all terms

=> $(3x^2 - 8x) + (3x^2 - 15) + 11$

Step 4: Combine the coefficients of x^2 and the constant terms

=> $3x^2 + 3x^2 - 8x - 15 + 11$

=> $6x^2 - 8x - 4$

Therefore The correct answer is $6x^2 - 8x - 4$.

Additional Information

BODMAS Rule

Always solve Brackets first, then Orders, followed by Division, Multiplication, Addition, and Subtraction.

Combining Like Terms

Only terms with the same variable and the same exponent (like x^2 and x^2) can be added or subtracted together.

Algebraic Signs

Remember that (+) × (−) = (−) and (−) × (−) = (+). Careful sign management is key in Simplification.

Q49. Answer: (c) 1

Shortcut Trick

According to the second condition: $2(Q + 9) = 2(P + 9) - 14$

=> $2Q + 18 = 2P + 18 - 14$

=> $2P - 2Q = 14$ => $P - Q = 7$ (The age difference is always constant)

From the first condition: $2P - Q = 15$

Substitute $P = Q + 7$: $2(Q + 7) - Q = 15$ => $2Q + 14 - Q = 15$ => $Q = 1$ year

Therefore The correct answer is 1 year.

Alternate Method

Given:

Let P and Q be the present ages of P and Q respectively.

Condition 1: $2P - Q = 15$ ... (i)

Condition 2: $2(Q + 9) = 2(P + 9) - 14$ ... (ii)

Calculations:

=> Simplifying (ii): $2Q + 18 = 2P + 18 - 14$

=> $2Q = 2P - 14$

=> $2P - 2Q = 14$

=> $P - Q = 7$ => $P = Q + 7$

=> Substitute P in (i): $2(Q + 7) - Q = 15$

=> $2Q + 14 - Q = 15$

=> $Q + 14 = 15$

=> $Q = 15 - 14 = 1$

Therefore The correct answer is 1 year.

Additional Information

Age Difference Property

The difference between the ages of two persons remains constant at any point in time.

Ratio of Ages

If the ratio of ages is given at two different times, use the cross-multiplication method or equate the parts to find the multiplier.

Linear Equations

Age problems often lead to simultaneous linear equations which can be solved by substitution or elimination.

Q50. Answer: (b) 46 : 51

Shortcut Trick

Convert each ratio to its approximate decimal value to compare quickly.

48 : 90 ≈ 0.533

46 : 51 ≈ 0.902 (closest to 1)

22 : 54 ≈ 0.407

42 : 68 ≈ 0.617

Therefore The correct answer is 46 : 51.

Alternate Method

Given Ratios: 48/90, 46/51, 22/54, 42/68

Calculations:

=> Ratio 1 = 48 ÷ 90 = 0.533...

=> Ratio 2 = 46 ÷ 51 = 0.9019...

=> Ratio 3 = 22 ÷ 54 = 0.4074...

=> Ratio 4 = 42 ÷ 68 = 0.6176...

=> Comparing values: 0.9019 > 0.6176 > 0.5333 > 0.4074

Therefore The correct answer is 46 : 51.

Additional Information

Ratio Comparison Rule

To compare ratios a:b and c:d, compare the products (a×d) and (b×c). If ad > bc, then a/b > c/d.

Proper Fraction Property

In a proper fraction (numerator < denominator), as the difference between numerator and denominator decreases, the value of the fraction approaches 1.

Percentage Method

Converting ratios to percentages (Ratio × 100) is another effective way to identify the greatest or smallest ratio.

Q51. Answer: (c) Rs. 49,280

Shortcut Trick

Total profit = 12,000 and Kunal's share = 1,800.

Anshuman's share = 12,000 − 1,800 = 10,200.

Profit ratio (Anshuman : Kunal) = 10,200 : 1,800 = 17 : 3.

Investment ratio = Profit ratio = 17 : 3 (since time is constant).

Total ratio parts = 17 + 3 = 20. Difference in parts = 17 − 3 = 14.

Difference = (70,400 ÷ 20) × 14 = 3,520 × 14 = 49,280.

Therefore The correct answer is Rs. 49,280.

Alternate Method

Given → Total Investment = 70,400 | Total Profit = 12,000 | Kunal's Profit = 1,800.

Formulas: Investment Ratio = Profit Ratio | Share = (Total Value ÷ Total Ratio) × Specific Ratio.

=> Anshuman's Profit = 12,000 − 1,800 = 10,200.

=> Profit Ratio (A:K) = 10,200/1,800 = 102/18 = 17/3.

=> Let Anshuman's investment be 17x and Kunal's be 3x.

=> 17x + 3x = 70,400 => 20x = 70,400 => x = 3,520.

=> Difference = 17x − 3x = 14x = 14 × 3,520 = 49,280.

Therefore The correct answer is Rs. 49,280.

Additional Information

Partnership Principle

When the time period of investment is the same for all partners, the profit is distributed in the direct ratio of their investments.

Compound Partnership

If time periods are different, Profit Ratio = (Capital1 × Time1) : (Capital2 × Time2).

Q52. Answer: (d) 89.9

Shortcut Trick

To find the LCM of decimals, make the number of decimal places equal for all numbers.

2.900 and 0.031 have three decimal places each.

Consider them as integers: 2900 and 31.

LCM(2900, 31) => Since 31 is a prime number, LCM = 2900 × 31 = 89900.

Place the decimal point back (3 places): 89.900.

Therefore The correct answer is 89.9.

Alternate Method

Given values: 2.9 and 0.031.

Formula Used: LCM of Fractions = LCM of Numerators ÷ HCF of Denominators.

Convert decimals to fractions:

=> 2.9 = 29/10

=> 0.031 = 31/1000

To find the LCM, make the denominators equal:

=> 29/10 = 2900/1000

=> 0.031 = 31/1000

Now, LCM = LCM(2900, 31) / 1000

=> Since 31 is prime and not a factor of 2900, LCM(2900, 31) = 2900 × 31 = 89900.

=> Final LCM = 89900 / 1000 = 89.9.

Therefore The correct answer is 89.9.

Additional Information

LCM of Fractions

LCM = (LCM of Numerators) ÷ (HCF of Denominators). Always simplify fractions to their lowest terms first or ensure denominators are equal.

HCF of Fractions

HCF = (HCF of Numerators) ÷ (LCM of Denominators). This is the counterpart rule for finding the highest common factor.

Decimal Alignment Rule

For decimal LCM/HCF, padding with zeros to ensure the same number of decimal places prevents calculation errors when treating them as integers.

Q53. Answer: (d) 2

Shortcut Trick

Numbers to check: 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407.

Eliminate even numbers and numbers ending in 5: 397, 399, 401, 403, 407.

Apply divisibility rules: 399 (3+9+9=21, ÷3), 403 (13×31), 407 (11×37).

Remaining Prime Numbers: 397 and 401.

Therefore The correct answer is 2.

Alternate Method

Given: Range [397, 407]

Step-by-step verification:

=> 397: Not divisible by 2, 3, 5, 7, 11, 13, 17. (√397 ≈ 19.9). It is a Prime Number.

=> 398: Even number → Composite.

=> 399: Sum of digits = 3+9+9 = 21 (divisible by 3) → Composite.

=> 400: Even number → Composite.

=> 401: Not divisible by 2, 3, 5, 7, 11, 13, 17, 19. (√401 ≈ 20.02). It is a Prime Number.

=> 402: Even number → Composite.

=> 403: 403 = 13 × 31 → Composite.

=> 404: Even number → Composite.

=> 405: Ends in 5 → Composite.

=> 406: Even number → Composite.

=> 407: 407 = 11 × 37 → Composite.

=> Prime numbers found = {397, 401}. Count = 2.

Therefore The correct answer is 2.

Additional Information

Prime Number Definition

A natural number greater than 1 that has no positive divisors other than 1 and itself.

Primality Test

To check if N is prime, test divisibility by primes up to √N. If no prime ≤ √N divides N, then N is prime.

Divisibility by 11

A number is divisible by 11 if the difference between the sum of digits at odd positions and even positions is 0 or a multiple of 11.

For 407: (4+7)−0 = 11.

Q54. Answer: (d) 3125

Shortcut Trick

Let the total registered voters be 100 units.

Polled votes = 96% of 100 = 96 units.

Valid votes = 90% of 96 = 86.4 units.

Winner gets 57% and Loser gets 43% of valid votes. Difference = 14% of 86.4.

=> 14% × 86.4 units = 378 => 1 unit = 378 ÷ (0.14 × 86.4) = 31.25.

Total voters = 100 × 31.25 = 3125.

Therefore The correct answer is 3125.

Alternate Method

Given: Votes polled = 96%, Invalid = 10%, Winner = 57% of Valid, Margin = 378.

Let the total number of registered voters be x.

=> Polled votes = 0.96x

=> Valid votes = 90% of 0.96x = 0.90 × 0.96x = 0.864x

=> Winner's votes = 57% of 0.864x

=> Loser's votes = (100 − 57)% of 0.864x = 43% of 0.864x

=> Margin = (57% − 43%) of 0.864x = 14% of 0.864x

=> 0.14 × 0.864x = 378

=> 0.12096x = 378

=> x = 378 ÷ 0.12096

=> x = 3125

Therefore The correct answer is 3125.

Additional Information

Successive Percentage

When multiple percentages are applied one after another, the total effect is Calculated as: Final = Initial × (p1/100) × (p2/100).

Election Margin

The winning margin is always the difference between the winner's and the runner-up's votes, usually calculated on the valid votes base.

Valid vs Polled Votes

Valid Votes = Total Polled Votes − Invalid Votes. Registered voters include those who did not cast a vote.

Q55. Answer: (c) Rs. 14,000

Shortcut Trick

Net profit percentage = a + b + (ab ÷ 100) where a is markup and b is discount (negative).

Profit% = 35 − 18 − (35 × 18 ÷ 100) = 17 − 6.3 = 10.7%.

Given 10.7% of CP = 1,498.

1% of CP = 1,498 ÷ 10.7 = 140.

100% of CP = 140 × 100 = 14,000.

Therefore The correct answer is Rs. 14,000.

Alternate Method

Given → Markup % = 35%, Discount % = 18%, Profit = Rs. 1,498.

Formulas: MP = CP × (100 + Markup%) ÷ 100 | SP = MP × (100 − Discount%) ÷ 100 | Profit = SP − CP.

=> Let Cost Price (CP) = 100 units.

=> Marked Price (MP) = 100 + 35% of 100 = 135 units.

=> Selling Price (SP) = 135 − 18% of 135 = 135 − 24.3 = 110.7 units.

=> Profit = SP − CP = 110.7 − 100 = 10.7 units.

=> 10.7 units = Rs. 1,498.

=> 1 unit = 1498 ÷ 10.7 = 140.

=> 100 units = 140 × 100 = Rs. 14,000.

Therefore The correct answer is Rs. 14,000.

YourMockTest.com — Free Study Material

Additional Information

Marked Price and Discount

Discount is always calculated on the Marked Price (MP). Relationship: SP = MP × (100 − D%)/100.

Markup Percentage

Markup is the increase in price over the Cost Price (CP). Relationship: MP = CP × (100 + Markup%)/100.

Q56. Answer: (d) Rs. 14,595

Shortcut Trick

Effective rate for first case = 3.2% × 8.5 = 27.2%

Principal (P) = (2550 ÷ 27.2) × 100 = Rs. 9,375

New effective interest rate = 9.6% × 5.8 = 55.68%

New Simple Interest = 9375 × 55.68% = Rs. 5,220

Total Amount = Principal + New Interest = 9375 + 5220 = Rs. 14,595

Therefore The correct answer is Rs. 14,595.

Alternate Method

Given:

Case 1: Simple Interest (SI1) = Rs. 2,550, Rate (R1) = 3.2% p.a., Time (T1) = 8.5 years

Case 2: Rate (R2) = 9.6% p.a., Time (T2) = 5.8 years

Formula Used:

Simple Interest (SI) = (P × R × T) / 100

Amount (A) = Principal (P) + SI

Calculations:

=> 2550 = (P × 3.2 × 8.5) / 100

=> 2550 × 100 = P × 27.2

=> P = 255000 / 27.2 = Rs. 9,375

=> New Simple Interest (SI2) = (9375 × 9.6 × 5.8) / 100

=> SI2 = (9375 × 55.68) / 100 = Rs. 5,220

=> Payable Amount = P + SI2 = 9375 + 5220 = Rs. 14,595

Therefore The correct answer is Rs. 14,595.

Additional Information

Effective Rate of Interest

In Simple Interest, the total interest percentage over multiple years is simply the product of the annual rate and the number of years (R × T).

Compound Interest Formula

Unlike SI, Compound Interest is calculated on the accumulated amount: $A = P(1 + r/100)^n$, where n is the number of compounding periods.

Difference between SI and CI

For a period of 2 years, the difference between CI and SI is given by the formula: Difference = $P(r/100)^2$.

Q57. Answer: (a) 576

Shortcut Trick

To find the square of a number ending in 4, use the formula $(a+b)^2$ or memorize base squares.

$24^2 = (25 − 1)^2 = 625 − 50 + 1 = 576$.

Alternatively, 24 × 24 → 4 × 4 = 16 (unit digit 6).

Therefore The correct answer is 576.

Alternate Method

Given: Number = 24

Formula Used: Square of a number n = n × n

=> $24^2 = 24 × 24$

=> 24 × (20 + 4)

=> (24 × 20) + (24 × 4)

=> 480 + 96

=> 576

Therefore The correct answer is 576.

Additional Information

Square of Numbers

The square of a number is the result of multiplying the number by itself. For example, $x^2 = x \times x$.

Identity Method

You can use $(a + b)^2 = a^2 + 2ab + b^2$ or $(a - b)^2 = a^2 - 2ab + b^2$ to calculate squares of larger numbers easily.

Perfect Squares

A perfect square is an integer that is the square of an integer. 576 is a perfect square as $\sqrt{576} = 24$.

Q58. Answer: (d) 28 hours

Shortcut Trick

Distance is constant, so Speed is inversely proportional to Time (S1T1 = S2T2).

Speed ratio (Ishaan : Meghna) = 147 : 42 = 7 : 2.

Time ratio (Ishaan : Meghna) = 2 : 7.

Given 2 units = 8 hours → 1 unit = 4 hours.

Time taken by Meghna = 7 units × 4 = 28 hours.

Therefore The correct answer is 28 hr.

Alternate Method

Given:

Speed of Ishaan (S_I) = 147 km/hr

Time taken by Ishaan (T_I) = 8 hours

Speed of Meghna (S_M) = 42 km/hr

Formula Used:

Distance = Speed × Time

Calculations:

=> Distance = S_I × T_I

=> Distance = 147 × 8 = 1176 km

=> Time taken by Meghna (T_M) = Distance ÷ S_M

=> T_M = 1176 ÷ 42

=> T_M = 28 hours

Therefore The correct answer is 28 hr.

Additional Information

Inversely Proportional Relation

When the distance is constant, the time taken is inversely proportional to the speed (T prop. to 1/S). This means S1/S2 = T2/T1.

Average Speed Formula

For a round trip or two equal distances covered at speeds x and y, the average speed is (2xy) ÷ (x + y).

Unit Conversion

To convert km/hr to m/s, multiply by 5/18. To convert m/s to km/hr, multiply by 18/5.

Q59. Answer: (a) Rs. 5,55,689

Shortcut Trick

Effective multiplier for Selling Price (SP) = Marked Price (MP) × (1 − d1/100) × (1 − d2/100) × (1 − d3/100).

SP = 6,48,200 × (94/100) × (95/100) × (96/100).

SP = 6,48,200 × 0.94 × 0.95 × 0.96 = 6,48,200 × 0.857664.

SP ≈ 5,55,688.67.

Rounding to the nearest rupee, we get 5,55,689.

Therefore The correct answer is Rs. 5,55,689.

Alternate Method

Given → Marked Price (MP) = Rs. 6,48,200; Discounts = 6%, 5%, and 4%.

Formulas: SP = MP × (100 − D1%)/100 × (100 − D2%)/100 × (100 − D3%)/100

=> Step 1: Price after 6% discount = 6,48,200 × 0.94 = 6,09,308.

=> Step 2: Price after 5% discount = 6,09,308 × 0.95 = 5,78,842.6.

=> Step 3: Price after 4% discount = 5,78,842.6 × 0.96 = 5,55,688.896.

=> Final Selling Price rounded off = Rs. 5,55,689.

Therefore The correct answer is Rs. 5,55,689.

Additional Information

Successive Discounts

When multiple discounts are applied one after another, the total discount is not the simple sum. For two discounts a% and b%, effective discount = (a + b − ab/100)%.

Marked Price and Selling Price

The Marked Price (MP) is the price printed on the label, and Selling Price (SP) is the actual price after deducting the discount from MP.

Q60. Answer: (d) 16

Shortcut Trick

Ratio of Exterior angle : Interior angle = 1 : 7

Total ratio units = 1 + 7 = 8 units

Sum of Interior and Exterior angles at a vertex = 180°

8 units = 180° => 1 unit (Exterior angle) = 180° ÷ 8 = 22.5°

Number of sides (n) = 360° ÷ Exterior angle = 360° ÷ 22.5° = 16

Therefore The correct answer is 16.

Alternate Method

Given:

Exterior angle of a regular polygon = (1/7) × Interior angle

Formula Used:

1. Interior angle + Exterior angle = 180°

2. Number of sides (n) = 360° ÷ Exterior angle

Calculations:

Let the exterior angle be e and the interior angle be i.

=> e = i / 7

=> i = 7e

=> i + e = 180°

=> 7e + e = 180°

=> 8e = 180°

=> e = 180° ÷ 8 = 22.5°

=> n = 360° ÷ 22.5°

=> n = 16

Therefore The correct answer is 16.

Q61. Answer: (a) 138

Shortcut Trick

Let the second number be 1 unit. Then the first number is 5 units.

Product of units → 5 × 1 = 5 units² = 2645.

1 unit² = 529 => 1 unit = √529 = 23.

Sum of numbers → (5 + 1) units = 6 units = 6 × 23 = 138.

Therefore The correct answer is 138.

Alternate Method

Given:

Product of two positive numbers = 2645

Relationship: First number = 5 × Second number

Let the second number be x. Then the first number is 5x.

=> 5x × x = 2645

=> $5x^2 = 2645$

=> $x^2 = 2645 \div 5$

=> $x^2 = 529$

=> x = √529 = 23
=> First number = 5 × 23 = 115
=> Sum = 115 + 23 = 138
Therefore The correct answer is 138.
Additional Information
Perfect Squares
To solve such problems quickly, memorize squares up to 30. Here, $23^2 = 529$ and $25^2 = 625$.
Ratio and Proportion
If two numbers are in ratio a:b and their product is P, then the numbers are $a\sqrt{(P/ab)}$ and $b\sqrt{(P/ab)}$.
Sum of Numbers Rule
If one number is n times the other, their sum is (n+1) times the smaller number.

Q62. Answer: (c) 34.52

Shortcut Trick
Assume the initial average as the base: 43.
Net deviation for next 10 matches = 10 × (15 − 43) = −280.
Distribute deviation across all 33 matches = −280 ÷ 33 ≈ −8.4848.
New Average = 43 − 8.4848 = 34.5151 ≈ 34.52.
Therefore The correct answer is 34.52.
Alternate Method
Given:
Average runs in first 23 matches = 43
Average runs in next 10 matches = 15
Formula Used:
Combined Average = (Total Runs) ÷ (Total Matches)
Total Runs = (n1 × A1) + (n2 × A2)
=> Total runs in 23 matches = 23 × 43 = 989
=> Total runs in 10 matches = 10 × 15 = 150
=> Total runs in all 33 matches = 989 + 150 = 1139
=> Combined Average = 1139 ÷ 33
=> Combined Average = 34.515151...
=> Rounded to two decimal places = 34.52
Therefore The correct answer is 34.52.
Additional Information
Weighted Average Formula
When two groups with sizes n1, n2 and averages A1, A2 are combined, the new average is (n1A1 + n2A2) ÷ (n1 + n2).
Deviation Method
New Average = Old Average + (Total Deviation ÷ Total Number of Items). This is often faster for large numbers.
Rounding Decimals
To round to two decimal places, look at the third decimal; if it is 5 or more, round up the second decimal place.
Therefore The correct answer is 34.52.

Q63. Answer: (c) 5

Shortcut Trick
Check the unit digit of the number 938315.
If the last digit of a number is 0 or 5, then the entire number is divisible by 5.
The last digit of 938315 is 5.
Therefore The correct answer is 5.
Alternate Method
Given: Number = 938315
Divisibility Rules Check:
=> For 12: Number must be divisible by 3 and 4. Since the number is odd, it is not divisible by 4 (or 12).

=> For 9: Sum of digits = 9 + 3 + 8 + 3 + 1 + 5 = 29. Since 29 is not divisible by 9, the number is not divisible by 9.
=> For 5: The last digit must be 0 or 5. Here, the unit digit is 5.
=> 938315 ÷ 5 = 187663
Therefore The correct answer is 5.
Additional Information
Divisibility by 3 and 9
A number is divisible by 3 (or 9) if the sum of its digits is divisible by 3 (or 9).
Divisibility by 4 and 8
A number is divisible by 4 if its last two digits are divisible by 4, and by 8 if its last three digits are divisible by 8.
Divisibility by 11
Difference between the sum of digits at odd places and sum of digits at even places must be 0 or a multiple of 11.

Q64. Answer: (c) 314

Shortcut Trick
Total Ratio parts = 19 + 3 + 18 = 40 units.
Difference between Largest (19) and Smallest (3) = 16 units.
Required difference = (16 ÷ 40) × 785 = (2 ÷ 5) × 785.
Required difference = 2 × 157 = 314.
Therefore The correct answer is Rs. 314.
Alternate Method
Given:
Total amount = Rs. 785
Ratio of shares = 19 : 3 : 18
Calculations:
=> Sum of ratio terms = 19 + 3 + 18 = 40
=> Value of 1 unit = 785 ÷ 40 = Rs. 19.625
=> Largest share = 19 units
=> Smallest share = 3 units
=> Difference = 19 − 3 = 16 units
=> Required difference in Rs. = 16 × 19.625
=> Required difference = Rs. 314
Therefore The correct answer is Rs. 314.
Additional Information
Ratio and Proportion
If a total quantity T is divided in the ratio a : b : c, then the share of the first person is (a ÷ (a+b+c)) × T.
Difference between shares
The difference between any two shares can be calculated directly by using the difference of their respective ratio units: Difference = ((a − b) ÷ (a+b+c)) × T.

Q65. Answer: (d) 111 km/hr

Shortcut Trick
Total Distance = 907 km | Total Time = 14 hours
D1 = 5 × 32 = 160 km | T2 = 81 ÷ 27 = 3 hours
Remaining Distance = 907 − (160 + 81) = 666 km
Remaining Time = 14 − (5 + 3) = 6 hours
Required Speed = 666 ÷ 6 = 111 km/hr
Therefore The correct answer is 111 km/hr.
Alternate Method
Given:
Total distance = 907 km, Total time limit = 14 hours
Calculations:
=> Distance1 = Speed1 × Time1 = 32 × 5 = 160 km

=> Time2 = Distance2 ÷ Speed2 = 81 ÷ 27 = 3 hours
=> Total Distance covered = 160 + 81 = 241 km
=> Total Time elapsed = 5 + 3 = 8 hours
=> Remaining Distance = 907 − 241 = 666 km
=> Remaining Time = 14 − 8 = 6 hours
=> Required Speed = Remaining Distance ÷ Remaining Time = 666 ÷ 6 = 111 km/hr
Therefore The correct answer is 111 km/hr.
Additional Information
Average Speed
It is the total distance traveled divided by the total time taken. Average Speed = Total Distance ÷ Total Time.
Basic Speed Formula
Relationship between Distance (D), Speed (S), and Time (T) is given by D = S × T.
Unit Conversion
To convert km/hr to m/s, multiply by 5/18. To convert m/s to km/hr, multiply by 18/5.

Q66. Answer: (c) 97/132

Shortcut Trick
Work done by A and B together in 1 day = (1/11 + 1/24) = (24 + 11)/(11 × 24) = 35/264.
Work done in 2 days = 2 × (35/264) = 35/132.
Remaining work = 1 − 35/132 = (132 − 35)/132 = 97/132.
Therefore The correct answer is 97/132.
Alternate Method
Given: Time taken by A = 11 days, Time taken by B = 24 days.

Person	Days	Total Work	Efficiency
A	11	264	24
B	24	11	

=> Total Efficiency of (A + B) = 24 + 11 = 35 units/day.
=> Work completed in 2 days = 2 × 35 = 70 units.
=> Remaining work = 264 − 70 = 194 units.
=> Fraction of work left = 194/264 = 97/132.
Therefore The correct answer is 97/132.
Additional Information
Work and Time Relationship
Total Work = Efficiency × Time. Efficiency is inversely proportional to the time taken to complete a task.
Combined Work Formula
If A takes x days and B takes y days, together they complete the work in (x × y)/(x + y) days.
Pipes and Cisterns
Similar logic applies where an inlet pipe has positive efficiency and an outlet/leak pipe has negative efficiency.

Q67. Answer: (b) 616

Shortcut Trick
For a circle inside a rectangle, the diameter of the largest circle is equal to the shorter side of the rectangle.
Diameter (d) = 196 m
Circumference = π × d = (22/7) × 196
=> 22 × 28 = 616 m
Therefore The correct answer is 616 m.
Alternate Method
Given:
Length (l) = 271 m
Breadth (b) = 196 m
Formula Used:

Diameter of largest circle (d) = min(length, breadth)
Circumference of circle = πd or 2πr
Calculations:
=> Diameter (d) = 196 m
=> Radius (r) = 196 ÷ 2 = 98 m
=> Circumference = 2 × (22/7) × 98
=> Circumference = 2 × 22 × 14
=> Circumference = 44 × 14 = 616 m
Therefore The correct answer is 616 m.
Additional Information
Area of Circle
The space occupied by the circle is calculated as Area = πr^2.
Circle in a Square
For a circle inside a square, the diameter is exactly equal to the side of the square.
Rectangle Perimeter
The total boundary of the rectangle is given by P = 2 × (length + breadth).

Q68. Answer: (a) 17.31

Shortcut Trick
Direct square root calculation of each term:
√400 = 20
√0.0121 = 0.11 (since √121 = 11 and 4 decimal places become 2)
√7.84 = 2.8 (since √784 = 28 and 2 decimal places become 1)
Expression: 20 + 0.11 − 2.8 = 17.31
Therefore The correct answer is 17.31.
Alternate Method
Given: √400 + √0.0121 − √7.84
Step-by-step evaluation:
=> √400 = 20
=> √0.0121 = √(121/10000) = 11/100 = 0.11
=> √7.84 = √(784/100) = 28/10 = 2.8
Substitute back into the expression:
=> 20 + 0.11 − 2.8
=> 20.11 − 2.8
=> 17.31
Therefore The correct answer is 17.31.
Additional Information
Square Roots of Decimals
When taking the square root of a decimal, the number of decimal places in the result is exactly half of those in the original number.
Perfect Squares to Remember
Knowing squares up to 30 is helpful: $11^2 = 121$, $20^2 = 400$, $28^2 = 784$.
BODMAS Rule
Always perform addition and subtraction from left to right after solving the roots.

Q69. Answer: (a) 72/7

Shortcut Trick
Total Work = LCM(12, 9, 8) = 72 units.
Efficiency: Anjani = 6, Anjani + Khushbu = 8, Anjani + Khushbu + Sushmita = 9.
Sushmita efficiency = (A+K+S) − (A+K) = 9 − 8 = 1.
Combined efficiency (Anjani + Sushmita) = 6 + 1 = 7.
Time taken = 72 ÷ 7 = 72/7 days.
Therefore The correct answer is 72/7 days.

Alternate Method

Given: Time taken by Anjani = 12 days, Anjani + Khushbu = 9 days, Anjani + Khushbu + Sushmita = 8 days.

Formula: Total Work = LCM of individual days; Efficiency = Work ÷ Time.

Person	Days	Total Work	Efficiency
Anjani	12	72	6
Anjani + Khushbu	9	8	
Anjani + Khushbu + Sushmita	8	9	

=> Efficiency of Sushmita = (Efficiency of A + K + S) − (Efficiency of A + K)

=> Efficiency of Sushmita = 9 − 8 = 1 unit/day.

=> Efficiency of Anjani + Sushmita = 6 + 1 = 7 units/day.

=> Time taken by Anjani and Sushmita = Total Work ÷ Combined Efficiency

=> Time = 72/7 days.

Therefore The correct answer is 72/7 days.

Additional Information

Total Work Concept

Total work is usually assumed as the LCM (Least Common Multiple) of the number of days taken by individuals to simplify calculations.

Efficiency Relation

Efficiency is inversely proportional to the time taken. If time taken is T1 and T2, the ratio of efficiency is E1 : E2 = T2 : T1.

Combined Work Formula

If two people do work in A and B days respectively, they together finish it in (A × B) ÷ (A + B) days.

Q70. Answer: (c) 1/2

Shortcut Trick

Given: $6x = \text{cosec}\ \theta$ and $6/x = \cot\ \theta$

Square and subtract: $(6x)^2 - (6/x)^2 = \text{cosec}^2\ \theta - \cot^2\ \theta$

$36(x^2 - 1/x^2) = 1$

Divide by 2: $18(x^2 - 1/x^2) = 1/2$

Therefore The correct answer is 1/2.

Alternate Method

Given:

$x = (\text{cosec}\ \theta)/6$

$1/x = (\cot\ \theta)/6$

Formula Used:

Identity: $\text{cosec}^2\ \theta - \cot^2\ \theta = 1$

Calculations:

=> $x^2 = \text{cosec}^2\ \theta / 36$

=> $1/x^2 = \cot^2\ \theta / 36$

=> $(x^2 - 1/x^2) = (\text{cosec}^2\ \theta - \cot^2\ \theta) / 36$

=> $(x^2 - 1/x^2) = 1 / 36$

=> $18 \times (x^2 - 1/x^2) = 18 \times (1 / 36)$

=> $18(x^2 - 1/x^2) = 1/2$

Therefore The correct answer is 1/2.

Additional Information

Fundamental Trigonometric Identities

There are three primary identities: $\sin^2\ \theta + \cos^2\ \theta = 1$, $1 + \tan^2\ \theta = \sec^2\ \theta$, and $1 + \cot^2\ \theta = \text{cosec}^2\ \theta$.

Reciprocal Relations

$\text{cosec}\ \theta = 1/\sin\ \theta$, $\sec\ \theta = 1/\cos\ \theta$, and $\cot\ \theta = 1/\tan\ \theta$.

Square Difference Property

In algebra, $x^2 - y^2 = (x - y)(x + y)$, which is often combined with trig identities to simplify complex expressions.

Q71. Answer: (a) 6

'RACK' is coded as '3192' and 'JACK' is coded as '1326'.

'RACK' - '3192'

'JACK'- '1326'.

Code for J is 6.

Hence, the correct answer is "Option 1"

Q72. Answer: (d) Only conclusion (II) follows.

The least possible Venn diagram is:

Conclusions:

(I) No watch is a tie.- False (As their is no direct relation between watch and Tie. So,No watch is a tieis may be possible but not definite. Hence, it is false)

(II) No bow is a watch.- True (No watch is a bow. No bow is a watch is True)

Only conclusion (II) follows.

Hence, the correct answer is "Option 4"

Q73. Answer: (b) 57

Gievn Number 17 ÷ 3 + 49 × 7 − 13 = ?

'+' and '−' are interchanged and '×' and '÷' are interchanged

BODMAS Rule:

17 × 3 − 49 ÷ 7 + 13 = ?

17 × 3 − 7 + 13 = ?

51 + 13 − 7 = ?

64 − 7 = ?

57.

Hence, the correct answer is "Option 2"

Q74. Answer: (b) 689

The logic follows here,

Hence, the correct answer is "Option 2"

Q75. Answer: (c) 32, 128

Logic: First number x 4 = Second Number

The logic follows here,

Similarly,

Hence, the correct answer is "Option 3"

Q76. Answer: (d) Sister

Preparing the family tree diagram by using the following symbols:

As per the given information:

Hence, the correct answer is "Option 4"

Q77. Answer: (d) LKO

The logic followed here is:

Hence, the correct answer is "Option 4"

Q78. Answer: (d) 11 km towards west

- Manoj starts from Point A and drives 9 km towards north.
- He then takes a right turn, drives 6 km, turns right and drives 3 km.
- He then takes a left turn and drives 5 km.
- He takes a final right turn, drives 6 km and stops at Point P.

The Final Diagram,

Hence, the correct answer is "Option 4"

YourMockTest.com — Free Study Material

Q79. Answer: (d) bd

Given - 'mud depth urn' is coded as 'qz bd aa' and 'rain dog mud' is coded as 'bd gl kn'.

'mud depth urn' - 'qz bd aa'

'rain dog mud' - 'bd gl kn'.

Code for mud is bd.

Hence, the correct answer is "Option 4"

Q80. Answer: (b) Only conclusion (II) follows.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

(I): Some stars are cones.- False (As their is no direct relation between stars and cones, may it is possible but not definite. Hence, it is false.

(II): Some rectangles are cones. - True (All cones are rectangles.Some cones are rectangles and Some rectangles are cones. Hence, it is true.

Only conclusion (II) follows.

Hence, the correct answer is "Option 2"

Q81. Answer: (b) VQU

The logic followed here is:

Hence, the correct answer is "Option 2"

Q82. Answer: (d) Five

Given: Seven people A, B, C, D, E, F and G are sitting in a row, facing the north.

• No one sits to the right of G.

• Only four people sit between E and F.

• C sits fifth from the right end of the row.

• B sits to the immediate right of A but left of E

The Final Arrangement is,

Hence, the correct answer is "Option 4"

Q83. Answer: (d) Three

Given: Six friends, B, C, D, E, F and N, are sitting in a straight line, facing north.

• No one sits to the right of D.

• Only two people sit between D and B.

• Only one person sits between E and C.

• F sits third to the right of E

The Final Arrangement is,

Hence, the correct answer is "Option 4"

Q84. Answer: (d) GDH

The logic followed here is:

Hence, the correct answer is "Option 4"

Q85. Answer: (a) 2

Given: (Left) 6 @ 8 $ 7 1 * 2 + £ 5 & 3 Ω 9 # % 4 (Right)

Required Condition : Number - Symbol - Another Symbol

(Left) 6 @ 8 $ 7 1 * 2 + £ 5 & 3 Ω 9 # % 4 (Right)

Hence, the correct answer is "Option 1"

Q86. Answer: (b) 2 km to the east

• Pratik starts from Point A and drives 10 km towards the north.

• He then takes a right turn and drives 8 km, then turns right and drives 17 km.

• He then takes a right turn and drives 10 km.

• He takes a final right turn, drives 7 km and stops at Point P.

The Final Diagram,

YourMockTest.com — Free Study Material

Hence, the correct answer is "Option 2"

Q87. Answer: (d) 176

The logic follows here,

Hence, the correct answer is "Option 4"

Q88. Answer: (b) 10

Given number 1593486

Arranged in the ascending order - 1 3 4 5 6 8 9

Sum of the digits that are third from the left and third from the right in the new number thus formed

(Left) 1 3 4 5 6 8 9 (Right)

6 + 4 = 10.

Hence, the correct answer is "Option 2"

Q89. Answer: (c) MDZS

The logic followed here is:

Hence, the correct answer is "Option 3"

Q90. Answer: (c) 100

The logic follows here,

Hence, the correct answer is "Option 3"

Q91. Answer: (d) NEAM - ENAM - MENA

The logic follows here,

Similarly,

Hence, the correct answer is "Option 4"

Q92. Answer: (d) 35

The total number of people is 90, and Mr. Leu is 16th from the right end. The formula to find the position from the opposite end is:

Position from left = Total people − Position from right + 1

Plugging in the values:

Mr. Leu's position from left = 90 – 16 + 1 = 74 + 1 = 75

So, Mr. Leu is in the 75th position from the left end.

Now we have the positions of both individuals from the same end (the left end):

• Mr. Sanga's position from the left = 39

• Mr. Leu's position from the left = 75

The number of people between two positions is the difference in their positions minus one.

People between=Mr. Leu's position−Mr. Sanga's position−1

Plugging in the values:

People between=75−39−1=36−1=35

There are 35 people standing between Mr. Leu and Mr. Sanga

Hence, the correct answer is "Option 4"

Q93. Answer: (a) None

Given number 781234

Arranged in ascending order - 1 2 3 4 7 8

Given number 7 8 1 2 3 4

Arranged in ascending order - 1 2 3 4 7 8.

None of digits unchanged.

Hence, the correct answer is "Option 1"

Q94. Answer: (d) Five

To determine the number of people between Kumar and Mohana, first find Mohana's position from the left end of the row. The total number of people is 43, and Mohana is 9th from the right end.

Mohana's position from left end = Total people - Position from right end + 1

YourMockTest.com — Free Study Material

Mohana's position from left end=43−9+1=35

So, Mohana is 35th from the left end.

Now that we know both Kumar's and Mohana's positions from the left end, we can find the number of people between them. Kumar is 29th from the left and Mohana is 35th from the left.

Number of people between = |Mohana's position - Kumar's position| - 1

= (35 – 29) – 1= 6 - 1= 5.

Hence, the correct answer is "Option 4"

Q95. Answer: (a) +

Given (Left) 5 @ 1 £ 3 * 4 7 + $ 9 % 6 2 & 8 Ω # (Right)

Required Conditions: Number are dropped from the series,

(Left) @ £ * + $ % & Ω # (Right)

Hence, the correct answer is "Option 1"

Q96. Answer: (d) N

Seven boxes, A, B, C, D, M, N and O, are kept one over the other but not necessarily in the same order.

• Only three boxes are kept below D.

• Only two boxes are kept between D and O.

• Only A is kept above M.

• C is kept at some place below B and at some place above N

The Final Arrangement is,

A
M
B
D
C
N
O

Hence, the correct answer is "Option 4"

Q97. Answer: (a) 53

Given - 18 B 3 D 112 A 16 C 6 = ?

'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−',

BODMAS Rule:

18 × 3 − 112 ÷ 16 + 6 = ?

18 × 3 − 7 + 6 = ?

54 + 6 − 7 = ?

60 − 7 = ?

53.

Hence, the correct answer is "Option 1"

Q98. Answer: (d) WBL

The logic followed here is:

Hence, the correct answer is "Option 4"

Q99. Answer: (b) JVBV

The logic followed here is:

Hence, the correct answer is "Option 2"

Q100. Answer: (a) SMHD

The logic followed here is:

Hence, the correct answer is "Option 1"

More previous year papers and mock tests: **www.yourmocktest.com/pyq**

YourMockTest.com — Free Study Material