RRB NTPC CBT 2 (Level-2) Official Paper (Held On: 16 June 2022 Shift 2) (Previous Year Paper)

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FULL TEST

Q1. In a certain code language,

'find my car' is coded as 'mi co kh',

'black vintage car' is coded as 'co ne ve',

'find black house' is coded as 'ne kh sa'.

(Note: All codes are two letter codes only)

What could be the code for 'my vintage house' in the given code language?

(a) ve kh ne
(b) mi ne co
(c) kh co sa
(d) sa mi ve

Q2. Five people C, D, X, Y and Z each scored different marks in the same test. All scores are in whole numbers only. D scored the second lowest and D's score was 40. X scored more than D but less than the one who scored 45.45 was not the highest score. C's score is an even number. C did not score the least. Y scored 6 marks less than Z. Which of the following can be a possible score of C?

(a) 38
(b) 44
(c) 46
(d) 42

Q3. Which popular folk dance of Himachal Pradesh has a Yagya performed by the dancers at the end of the dance performance as a homage to the Gods and Goddesses?

(a) Jawara
(b) Bihu
(c) Kalbelia
(d) Nati

Q4. The Golden Quadrilateral is a _____ transport network aimed at facilitating faster movement of goods and people in India.

(a) airway
(b) railway
(c) road
(d) waterway

Q5. Find the volume of a cylinder (in cm^3) if its area of the base is 1,386 cm^2 and its height is 30 cm.

(a) 45810
(b) 41850
(c) 41580
(d) 40815

Q6. In India, the Chief Election Commissioner is appointed by the:

(a) Chief Justice of India
(b) President of India
(c) Prime Minister of India
(d) Lok Sabha speaker

Q7. Five boys Anand, Balu, Charan, Dinesh and Tom are sitting on a staircase in a way such that Anand is sitting exactly below Tom, who is sitting exactly below Balu. Charan is sitting exactly between Anand and Dinesh. Who is sitting exactly between Tom and Charan on the staircase?

(a) Anand
(b) Cannot be determined
(c) Balu
(d) Dinesh

Q8. Each cell of a memory device is capable of storing one bit of information in the form of binary numbers. What does the term 'bit' mean?

(a) Binary divisor
(b) Bidirectional divisor
(c) Binary digit
(d) Bidirectional digit

Q9. Financial emergency can be declared under _____ of the Constitution of India.

(a) Article 356
(b) Article 359
(c) Article 360
(d) Article 352

Q10. There are 12 numbers arranged in ascending order. If the mean of the last 11 numbers is 9 and the mean of all the 12 numbers is 11, then find the value of second number, which is 662/3% more than the first number.

(a) 54
(b) 53
(c) 55
(d) 56

Q11. _____ is a strait between the Tamil Nadu state of India and the Jaffna District of the Northern Province of the island nation of Sri Lanka.

(a) Bering Strait
(b) Palk Strait
(c) Strait of Hormuz
(d) Strait of Malacca

Q12. For the classes 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89 and 90-99 of grouped data, which one of the following is the upper limit of the class interval 70-79

(a) 79
(b) 70
(c) 79.5
(d) 69.5

Q13. Who among the following is the author of the famous book 'Rihla' which provides extremely rich and interesting details about the social and cultural life of the Indian subcontinent in the fourteenth century?

(a) Al-Biruni
(b) Francois Bernier
(c) Ibn Battuta
(d) Hiuen Tsang

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Q14. Which of the quadratic equations below will not have real roots?

(a) $x^2 + 4x + 4 = 0$
(b) $x^2 + 4x + 5 = 0$
(c) $x^2 + 4x - 4 = 0$
(d) $x^2 + 4x - 5 = 0$

Q15. A person can acquire Indian citizenship by naturalisation if the person is ordinarily a resident of India for _____ years.

(a) 5
(b) 15
(c) 9
(d) 12

Q16. Simplify the following:

(10 - [3/4 + {41/2 - (1/4 + 1/84)}])/4 = ?

(a) 385/336
(b) 485/336
(c) 285/336
(d) 185/336

Q17. The construction of the _____ in Rajasthan is based on the theme of nine planets.

(a) Raj Bhavan Chikitsalaya
(b) Jawahar Kala Kendra
(c) Jain MM Emitra
(d) Raj Palace

Q18. Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.

CEGI, EDIH, GCKG, IBMF, ?

(a) KAOE
(b) QXUB
(c) OYSC
(d) MZQD

Q19. 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 pigeons are doves.

All doves are mynas.

Conclusions:

I. All mynas are pigeons.

II. All pigeons are mynas.

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

Q20. Sheetal incurred 28% loss by selling an item for Rs. 207. What was the cost price of the item?

(a) Rs. 287.50
(b) Rs. 277.50
(c) Rs. 292.50
(d) Rs. 282.50

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Q21. According to the directions given by the coach, Jhulan walks 7 metres to the south-east from point X. Then Jhulan walks 14 metres to the west. She then walks 7 metres to the north-west. Finally, Jhulan walks 4 metres to the east and reaches point Y. What is the shortest distance between X and Y?

(a) 19 metres
(b) 10 metres
(c) 18 metres
(d) 7 metres

Q22. The Dead Sea, a highly saline water body is located in which of the following continents?

(a) North America
(b) Europe
(c) Asia
(d) Africa

Q23. Five bells commence tolling together and toll at intervals of 3, 6, 12, 15 and 18 seconds respectively. They tolled at 9:58:45 hours then at which time they will again toll together?

(a) 10:01:15
(b) 10:02:45
(c) 10:00:15
(d) 10:01:45

Q24. A contractor undertakes to complete a work in 250 days. He employs 300 workers for 50 days and they complete 1/2 of the work. He then reduces the number of workers to 100, who work for 120 days, after which there are 20 days of holidays. How many workers must be employed after holidays for the remaining period to complete the work on time?

(a) 74
(b) 68
(c) 50
(d) 80

Q25. In measuring the sides of a rectangle error of 10% and 8% in excess are made. Find the error percent in its area.

(a) 1.88
(b) 188
(c) 18.8
(d) 0.188

Q26. The curve that shows the levels of output that a profit maximising firm would choose a produce at different values of the market price is called the firm's _____.

(a) demand curve
(b) performance curve
(c) variable curve
(d) supply curve

Q27. Who bagged the gold medal in the 73 kg category at the 2021 World Cadet Wrestling Championship held in Budapest, Hungary?

(a) Babita Kumari
(b) Vinesh Phogat
(c) Sakshi Malik
(d) Priya Malik

Q28. Rewa runs 40 m towards East to reach a stadium. She then turns right and runs 20 m. Then, she turns right and runs another 18 m to reach a music store. Again, she turns right and runs 10 m. After this, she turns left and runs 24 m, and finally she turns right and runs 12 m. In which direction is Rewa facing now? (All turns are 90^?turns only)

(a) East
(b) South
(c) North

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(d) West

Q29. The _____ river is known as river Jamuna in its lower course, after it enters Bangladesh.

(a) Brahmaputra
(b) Ganga
(c) Hooghly
(d) Yamuna

Q30. The Gadgil formula which is named after social scientist and the first critic of Indian planning was approved in _____ for determining the allocation of central assistance for state plans in India.

(a) 1966
(b) 1969
(c) 1967
(d) 1970

Q31. Who among the following is NOT an exponent of Carnatic music?

(a) M.S.Subbulakshmi
(b) Priya Sisters
(c) Bombay Jayashri
(d) Kishori Amonkar

Q32. Select the number from among the given options that can replace the question mark (?) in the following series.

1, 1, 2, 2, 5, 4, 26, 8, 677, ?

(a) 342
(b) 74
(c) 64
(d) 16

Q33. The health component of Human Development Index is measured by the _____.

(a) sex ratio
(b) total number of births
(c) life expectancy at birth
(d) total number of deaths

Q34. The first ever detailed commentary of the Bhagwad Gita in Marathi was done by _____.

(a) Eknath
(b) Tukaram
(c) Dnyaneshwar
(d) Ramdas

Q35. Six people A, B, C, D, E and F are sitting around a circular table facing the centre. C sits second to the right of D. A is an immediate neighbour of C. Only two people sit between F and A. B sits to the immediate right of F. Who sits third to the left of E?

(a) D
(b) F
(c) C
(d) A

Q36. How many beats are there in the Hindustani classical taal named Dadra Taal?

(a) 3
(b) 6
(c) 12
(d) 9

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Q37. Read the given statement and conclusion carefully. Decide which of the given conclusions logically follow(s) from the statement.

Statement:

Q > P ≥ I > J = M ≤ L < E

Conclusions:

(I) J < E

(II) Q > M

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

Q38. The number of students in grades 10, 11 and 12 of a school are 348, 256 and 480 respectively. All students were divided into different groups, with no group having students from more than one grade. What is the minimum number of groups that would be formed if all the groups have the same number of students?

(a) 236
(b) 130
(c) 332
(d) 271

Q39. Study the given information carefully and answer the question that follows.

In an office, four colleagues Lewis, Alex, Philip and Siri are sitting around a square table, and each of them are seated at different corners facing the centre of the table. Lewis is sitting to the immediate right of Alex. Philip is sitting to the immediate left of Siri.

Which of the following pairs is sitting diagonally opposite each other?

(a) Alex-Siri
(b) Lewis-Philip
(c) Lewis-Alex
(d) Philip-Alex

Q40. Six friends A, B, C, D, E and F are sitting on a bench facing north. A is sitting second to the right of C, who is an immediate neighbour of D. E is sitting to the immediate left of A. F is an immediate neighbour of both just D and B. If B is sitting at one extreme end of the bench, then who among the following is sitting at the other extreme end?

(a) C
(b) E
(c) D
(d) A

Q41. Who took charge as the new vice chief of the Indian Army on 1^(st) February 2022?

(a) Lt Gen Manoj Pande
(b) Lt Gen Satinder Kumar Saini
(c) Lt Gen Sarath Chand
(d) Lt Gen Chandi Prasad Mohanty

Q42. Which of the following keyboard shortcuts is used to display and hide the desktop in windows 10?

(a) Ctrl + H
(b) Windows logo key + D
(c) Windows logo key + H
(d) Ctrl + D

Q43. Eight people F, G, N, O, S, T, Y and Z are sitting in a straight line. All of them are facing the North. F sits second from one of the extreme ends of the line. Only three people sit between F and G. N sits second to the right of G. As many people sit to the right of N as to the left of O. Only two people sit between O and S. Y sits at one of the positions to the left of S. T sits at one of the positions to the right of Z.

How many people sit to the left of Z?

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

Q44. Six employees S, T, U, V, W, X are sitting around a circular table for a meeting, facing the centre. T is an immediate neighbour of both X and U. S is an immediate neighbour of both W and V. X is to the immediate left of V. Who is an immediate neighbour of both S and X?

(a) V
(b) U
(c) W
(d) T

Q45. Which Article of the Indian Constitution is related with the audit of the accounts of Panchayats?

(a) 243C
(b) 243J
(c) 243K
(d) 243B

Q46. The ratio of the speeds of A and B is 4 : 5 and hence A takes 20 minutes more than the time taken by B to reach destination. If A had walked at double his speed, he would have covered the distance in :

(a) 40 min
(b) 50 min
(c) 80 min
(d) 100 min

Q47. A and B together can do a piece of work in 30 days. Together with C they can complete the same work in 24 days. In how many days can C alone complete the same work?

(a) 150
(b) 120
(c) 96
(d) 90

Q48. Select the alphanumeric-cluster from among the given options that can replace the question mark (?) in the following series.

D2E#F, G#H3I, J4K#L, ?, P6Q#R, S#T7U

(a) M#O7N
(b) M3N#P
(c) M6A#T
(d) M#N5O

Q49. Who among the following elects the Vice President of India?

(a) The members of the Parliament and State Legislatures
(b) The elected members of the Parliament
(c) Members of both houses of parliament
(d) The members of the Rajya Sabha

Q50. Which of the following is the lowermost layer of the earth's atmosphere?

(a) Thermosphere
(b) Mesosphere
(c) Stratosphere
(d) Troposphere

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Q51. If each packet contains the same number of pencils and there are 96 pencils in all in 12 packets, how many packets will one have to purchase if one requires 304 pencils?

(a) 39
(b) 38
(c) 36
(d) 33

Q52. What is the compound interest (in Rs.) on a sum of Rs. 31600 for 11/3 years at 9% p.a., when the interest is compounded 8-monthly? (Nearest to a Rs.)

(a) 3906
(b) 3896
(c) 3928
(d) 3916

Q53. 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 follows(s) from the statements.

Statements:

Some mangoes are oranges.

All oranges are grapes.

Conclusions:

I. All grapes are oranges.

II. All mangoes are grapes.

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

Q54. _____ was appointed as the first Surveyor General of India in the year 1815.

(a) Colin Mackenzie
(b) James Rennell
(c) Thomas Adams
(d) George Everest

Q55. In a certain code language,

'find my book' is coded as 'tu en li',

'my new house' is coded as 'ab uv tu',

'book house tomorrow' is coded as 'li mo ab'.

(Note: All codes are two letter codes only)

What is the probable code for 'new tomorrow' in the given code language?

(a) ab li
(b) mo uv
(c) en tu
(d) uv ab

Q56. Find the value of k, if k% of 280 = 50% of 350

(a) 75
(b) 62.5
(c) 72.5
(d) 60

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Q57. Who among the following won the men's doubles final at the badminton tournament, the India Open, 2022?

(a) B Sai Praneeth, Sameer Verma
(b) Satwiksairaj Rankireddy, Chirag Shetty
(c) Lakshya Sen, Srikanth Kidambi
(d) Prannoy Kumar, Subhankar Dey

Q58. If 13.5 kg of grapes cost Rs. 681.75, find the cost of 12 kg of grapes.

(a) Rs. 606.00
(b) Rs. 612.00
(c) Rs. 603.00
(d) Rs. 610.00

Q59. If '<' means '-', '>' means '+', and '$' means '÷', then what would be the value of the following expression?

37 > 165 $ 3 < 5

(a) 87
(b) 63
(c) 95
(d) 72

Q60. B's mother R has only one daughter. A is the only son of R. How is B related to A?

(a) Sister
(b) Father
(c) Brother
(d) Mother's sister

Q61. The area of a trapezium is 1792 cm² and the perpendicular distance between its parallel sides is 28 cm. If the length of one of the parallel sides is 72 cm, then find the length of the other side.

(a) 48 cm
(b) 56 cm
(c) 64 cm
(d) 84 cm

Q62. Which of the numbers below is not divisible by 15?

(a) 123465
(b) 234675
(c) 234570
(d) 384575

Q63. During the period of the uprising of 1857, Shah Mal who rebelled at Barout in Uttar Pradesh was killed in the battle in _____.

(a) May 1858
(b) June 1858
(c) September 1857
(d) July 1857

Q64. If 19^(th) July 2019 was a Friday, what was the day on 21^(st) September 2019?

(a) Thursday
(b) Tuesday
(c) Wednesday
(d) Saturday

Q65. Akshita covers a distance of 300 km at the speed of 50 km/h, then 360 km at 30 km/h and another 420 km at 60 km/h. If her average speed for the whole journey is k km/h, then how much time (in hours) will she take to cover 216 km at k km/h?

(a) 5 hours

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(b) 7 hours
(c) 6 hours
(d) 4 hours

Q66. On 13 July 2021, the Badminton World Federation (BWF) officially allocated which country to host the BWF World Championships for 2026?
(a) India
(b) Spain
(c) Malaysia
(d) Japan

Q67. In a certain code language, 'PAINT' is coded as '70', and 'POLISH' is coded as '89'. How will 'CLEAN' be coded in that language?
(a) 35
(b) 45
(c) 95
(d) 40

Q68. IN 2009-10, the poverty line was defined for rural areas as consumption worth Rs. 673 per person _____ and for urban areas it was Rs. 860.
(a) half-yearly
(b) monthly
(c) quarterly
(d) yearly

Q69. In each of the number-pairs, the second number is obtained by performing a certain mathematical operation on the first number. Three of the following pairs follow the same pattern and thus form a group. Select the number-pair that does NOT belong to that group.
(a) 125 : 512
(b) 64 : 1331
(c) 343 : 1000
(d) 216 : 729

Q70. The length of a diagonal of a square is 18 cm. What is the perimeter of the square?
(a) 36√2 cm
(b) 72 cm
(c) 36 cm
(d) 72√2 cm

Q71. During the Indus Valley Period, from where were the shells procured for craft production?
(a) Shortughai
(b) Ropar
(c) Jaipur
(d) Nageshwar

Q72. In each of the given number-clusters, the number on the right side of = (the equal to sign) is calculated by performing certain mathematical operations on the two numbers on the left of = (the equal to sign). All three number-clusters follow the same pattern. Select the number from among the given options that can replace the question mark (?) in the third number-cluster.

6, 8 = 12

9, 8 = 18

6, 10 = ?

(a) 18
(b) 17
(c) 16

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(d) 15

Q73. Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.

KSQ : OWU :: FIJ : JMN :: TPV : ?

(a) XTZ
(b) XYZ
(c) ZSY
(d) XRX

Q74. Select the option that is related to the sixth letter-cluster in the same way as the first letter-cluster is related to the second letter-cluster and the third letter-cluster is related to the fourth letter-cluster.

OSU : LQT :: IKL : FIK :: ? : JTB

(a) MWC
(b) MVC
(c) NUD
(d) NVD

Q75. The East-West Corridor connects Silchar in Assam with _____ in Gujarat.

(a) Surat
(b) Kandla
(c) Ahmedabad
(d) Porbandar

Q76. Six girls, Harshita, Priyanka, Kusum, Ragini, Sangita and Tiya, each has a different age. Only three girls are older than Harshita. Only four girls are younger than Sangita. Priyanka is younger than Sangita and older than Harshita. Tiya is the youngest among all. Kusum is not the oldest among all.

Who amongst the following is NOT older than Harshita?

(a) Ragini
(b) Kusum
(c) Priyanka
(d) Sangita

Q77. A 360 m train crosses an electric pole in 12 seconds. Find the time (in seconds) taken by the train to cross a 150 m long bridge.

(a) 24
(b) 21
(c) 18
(d) 17

Q78. Which of the following programs launched by the Raksha Mantri Shri Rajnath Singh in August 2021 is called by him as 'a reflection of the government's resolve to create a self-reliant defence sector'?

(a) DISC 2.0
(b) DISC 3.5
(c) DISC 2.5
(d) DISC 5.0

Q79. Which of the following fractions is the largest?

7/9,6/7,22/25, and 11/13

(a) 7/9
(b) 11/13
(c) 6/7
(d) 22/25

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Q80. A person bought articles A and B for a total of Rs. 2312. He sold A at a loss of 16% and sold B at a gain of 20%. The selling prices of A and B were the same. What was the difference between the cost prices of A and B?

(a) Rs. 416
(b) Rs. 428
(c) Rs. 420
(d) Rs. 408

Q81. Who received the 30^(th) Saraswati Samman by the KK Birla Foundation in March 2021?

(a) Vasdev Mohi
(b) Padma Sachdev
(c) Sharankumar Limbale
(d) K Siva Reddy

Q82. Cyanocobalamin is a man-made form of _____ vitamin.

(a) B2
(b) B6
(c) B12
(d) B1

Q83. If $x + 1/x = 4$, then find the value of the following:

$(4x^2 + 4)/(9x^2 + 10x + 9)$

(a) 1
(b) 8/23
(c) 4/9
(d) 8/22

Q84. When a proportional increase in all input results in an increase in output by a larger proportion, the production function is said to display _____.

(a) doubling returns to scale
(b) constant returns to scale
(c) increasing returns to scale
(d) decreasing returns to scale

Q85. Which of the following is a unit of acceleration?

(a) m/s/s
(b) ft/s
(c) m/s
(d) sqm/s

Q86. If $\text{cosec}\ \theta \times \tan\theta = 2/(\sqrt{3})$, and θ is an acute angle, then find the value of θ.

(a) 45°
(b) 90°
(c) 60°
(d) 30°

Q87. Which of the following is NOT a parameter used to calculate Human Development Index?

(a) Life expectancy
(b) Environment around living area
(c) Expected years of schooling
(d) Gross National Income per capita

Q88. A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question.

Question:

What is Preetee's age?

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Statements:

I. Preetee is 10 years younger to her sister Arpita.

II. Arpita is 25 years younger to her mother and 30 years younger to her father.

(a) Statement II alone is sufficient, while statement I alone is not sufficient
(b) Both statements I and II together are sufficient
(c) Statement I alone is sufficient, while statement II alone is not sufficient
(d) Statement I and II together are not sufficient

Q89. Find the total surface area (in m^2) of a right circular cone whose radius of base is 70 cm and perpendicular height is 240 cm. [Use $\pi = 22/7$]

(a) 704
(b) 7.04
(c) 0.704
(d) 70400

Q90. How many such pairs of letters are there in the word HABITS (in both the forward and backward directions) which have as many letters between them in the word as there are in the English alphabetical order?

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

Q91. Laurel Hubbard representing _____ became the first-ever transgender athlete to take part in the Tokyo 2020 Olympics under the women's 87+ kg weightlifting category.

(a) Australia
(b) China
(c) the United States
(d) New Zealand

Q92. Of the options listed below, which is the smallest country by population?

(a) Honduras
(b) East Timor
(c) Cuba
(d) Vatican City

Q93. For which sport did Bhavina Patel win a silver medal at the 2020 Tokyo Paralympic Games in August 2021?

(a) Swimming
(b) Wheelchair Rugby
(c) Shooting
(d) Table Tennis

Q94. Where is the famous Bermuda triangle located?

(a) Black Sea
(b) Atlantic Ocean
(c) Caspian Sea
(d) South China sea

Q95. ON 8 July 2021, the Ministry of Defence implemented a web-based integrated system for sanction and disbursement of defence pension. What is the name of that system?

(a) SPARSH
(b) SUVIDHA
(c) ADARSH
(d) NIRYATAK

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Q96. The Securities and Exchange Board of India functions to monitor and regulate the _____.

(a) foreign exchange only
(b) private sector industries
(c) public health sector
(d) Indian capital market operations

Q97. Find the mode of the following data.

15, 26, 15, 29, 19, 18, 19, 15, 24, 23, 15, 19

(a) 15
(b) 26
(c) 19
(d) 29

Q98. Identify the alphanumeric-cluster that does NOT belong to the following series.

NG3, PJ6, RM9, TQ12, VS15

(a) VS15
(b) PJ6
(c) TQ12
(d) RM9

Q99. Select the correct combination of mathematical signs that can sequential replace that * signs and balance the given equation.

25 * 15 * 5 * 4 * 16 * 21

(a) ÷, ×, +, -, =
(b) +, ×, -, =, ÷
(c) -, +, ÷, ×, =
(d) +, ÷, ×, -, =

Q100. ABCD is a cyclic quadrilateral whose side AB is a diameter of the circle through A, B, C and D. If angle ADC = 129°, then what is the measure of angle BAC?

(a) 39°
(b) 49°
(c) 41°
(d) 51°

Q101. What does 'S' stand for, in the grouping of BRICS nations?

(a) Sweden
(b) South Africa
(c) Sudan
(d) Singapore

Q102. Who among the following was the first elected President of the Central Legislative Assembly in 1925?

(a) Bhagat Singh
(b) Vithalbhai Patel
(c) Motilal Nehru
(d) Subash Chandra Bose

Q103. The Khajuraho dance festival was instituted by the Government of India in collaboration with the Madhya Pradesh Kala Parishad in the year _____.

(a) 2015
(b) 2005
(c) 1975
(d) 1995

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Q104. If 3^(rd) February 2015 was a Tuesday, what was the day of the week on 6^(th) June 2015?

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

Q105. Two poles are on either side of a road. A 20 m long ladder is placed between the two poles. When the ladder rests against one pole, it makes an angle of 60° with the pole and when it is turned to rest against the other pole, it makes an angle of 30° with the road. Calculate the width of the road. (in m) (Use √3 = 1.732)

(a) 3.464
(b) 0.3264
(c) 32.64
(d) 34.64

Q106. With which of the following countries does India share its longest land border?

(a) Myanmar
(b) Bhutan
(c) Bangladesh
(d) Pakistan

Q107. If each side of a square is increased by 50%, then what is the percentage change in its area?

(a) 90%
(b) 110%
(c) 125%
(d) 75%

Q108. In a certain code language, 'MAIDEN' is written as 'ADEIMN', and 'SILVER' is written as 'EILRSV'. How will 'MAGNET' be written in that language?

(a) EAGNMT
(b) AGENMT
(c) ENGATM
(d) AEGMNT

Q109. Which of the following is an East flowing river?

(a) Damodar
(b) Narmada
(c) Tapi
(d) Mandovi

Q110. Simplify the following expression:

(17/2 ÷ 15/2 × 13/2)/(17/2 ÷ (15/2 × 13/2)) ÷ 169/30

(a) 6
(b) 71/2
(c) 7
(d) 61/2

Q111. Pandit Birju Maharaj was associated with which of the following dance forms?

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

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Q112. Read the given statement and courses of action carefully. Assuming that the information given in the statement is true, decide which of these can be a possible Course of Action to improve the sales of Company X to atleast some extent.

Statement:

The sales of a specific product sold by company X has decreased in recent times, much to the company's concern.

Courses of Action:

I: The company should conduct a proper study of other competitive products in the market.

II: The price of the product should be decreased, while maintaining a desirable quality.

(a) Only II can be a possible course of action
(b) Only I can be a possible course of action
(c) Neither I nor II can be a possible course of action
(d) Both I and II can be possible courses of action

Q113. Which of the following is commonly used in making solar cells?

(a) Ruthenium
(b) Polonium
(c) Silicon
(d) Selenium

Q114. Six friends Amit, Vinay, Rajiv, Mukul, Chetan and David are living on six different floors of the same building. The lowermost floor of the building is numbered 1, the floor above it is numbered 2, and so on till the topmost floor is numbered 6. No two friends live on the same floor. Vinay lives on the floor immediately above the floor on which Rajiv lives. Mukul lives on floor number 4. Amit lives on an even numbered floor. Chetan lives on floor number 1. Vinay does not live on floor number 6.

On which floor number does David live?

(a) 2
(b) 5
(c) 3
(d) 6

Q115. A part of Rs. 55,800 was invested in Scheme A for 2 years at 20% per annum compound interest, compounded annually, and the rest of the money was invested in Scheme B at 20% per annum simple interest for 4 years. Both the schemes earned equal interests. How much was invested in Scheme A?

(a) Rs. 36000
(b) Rs. 28300
(c) Rs. 40100
(d) Rs. 32400

Q116. Simplify the following expression: $(5.5^3 - 4^3)/(30.25 + 22 + 16)$

(a) 9.5
(b) 0.75
(c) 1.5
(d) 14.25

Q117. Find the simple interest on Rs. 48750 at 16% per annum for 73 days of a non-leap year.

(a) Rs. 1560
(b) Rs. 1600
(c) Rs. 1860
(d) Rs. 1500

Q118. Consider a sequence of seven consecutive numbers. If the average of the first five numbers is 'z', then find the average of the last three numbers.

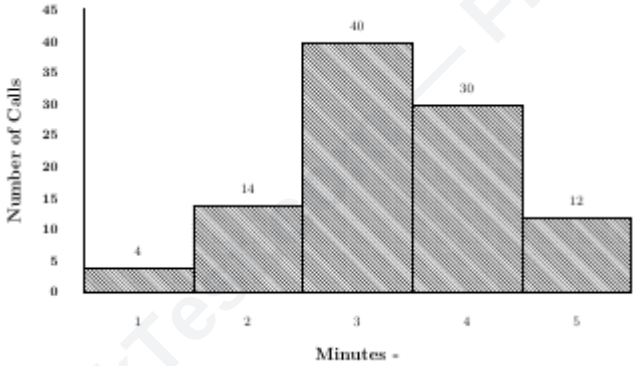
(a) z + 5
(b) z + 1
(c) z + 7

(d) z + 3

Q119. Which of the following is the correct full form of GDFCF?

(a) Gross Domestic Fixed Currency Formation
(b) Gross Development Funding Capital Formation
(c) Gross Domestic Fixed Capital Formation
(d) Gross Development on Fixed Capital Formation

Q120. The following chart shows the number of telephone conversations at a Call Centre for various call durations on a particular day.



How many minutes of telephone conversations took place on that day?

(a) 547
(b) 332
(c) 100
(d) 98

ANSWER KEY

1	d	2	c	3	d	4	c	5	c	6	b	7	a	8	c	9	c	10	c
11	b	12	c	13	c	14	b	15	d	16	d	17	b	18	a	19	d	20	a
21	b	22	c	23	d	24	c	25	c	26	d	27	d	28	c	29	a	30	b
31	d	32	d	33	c	34	c	35	a	36	b	37	d	38	d	39	d	40	d
41	a	42	b	43	b	44	a	45	b	46	b	47	b	48	d	49	c	50	d
51	b	52	a	53	d	54	a	55	b	56	b	57	b	58	a	59	a	60	a
61	b	62	d	63	d	64	d	65	a	66	a	67	b	68	b	69	b	70	a
71	d	72	d	73	a	74	b	75	d	76	b	77	d	78	d	79	d	80	d
81	c	82	c	83	b	84	c	85	a	86	d	87	b	88	d	89	b	90	c
91	d	92	d	93	d	94	b	95	a	96	d	97	a	98	c	99	d	100	a
101	b	102	b	103	c	104	d	105	d	106	c	107	c	108	d	109	a	110	b
111	a	112	d	113	c	114	b	115	a	116	c	117	a	118	d	119	c	120	b

SOLUTIONS

Q1. Answer: (d) sa mi ve

• my → mi
• vintage → ve
• house → sa
So the code for "my vintage house" will be "sa mi ve".
Hence the correct answer is "sa mi ve".

Mistake Points

• The given language is a code language, so we cannot determine the order of the words.

• Therefore, "sa mi ve" or "mi ve sa" or "sa ve mi" - all these are valid answers.

Q2. Answer: (c) 46

GIVEN:

Five people C, D, X, Y and Z each scored different marks in the same test.

all scores are in whole numbers

CALCULATION :

=> As, D scores second lowest marks i.e. 40 and X > D but X < 45

=> 45 was not the highest score.

So, highest score > 45 > X > D 40 > lowest score.

=> As, given in the question C did not score least and is an even number.

Hence, only position left for C is the highest score, which should be an even number.

So, C > 45

Therefore, among all the above options only option (3) i.e. 46 satisfy the condition.

Hence, the correct answer is 46.

Q3. Answer: (d) Nati

The correct answer is Nati.

Key Points

• Nati

• The very famous folk dance of Himachal Pradesh is known as Nati.

• Himachal has not forgotten about its rich culture and historical heritage, even after modernisation.

• Nati is mostly connected to Himachal Pradesh's Kullu district.

• The dance tells the story of Krishna and the Gopis and represents the Raas Lila.

• Tunis is the name given to musicians in this region and they perform using the dhol, flute, nagara, karnal, narsingha, and a shenai.

• The dancers conduct a Yagya as a homage to the Gods and Goddesses at the end of a Nati dance.

Additional Information

Folk dance	State	Occasion
Jawara	Madhya Pradesh	Performed by the peasant community of Bundelkhand region's to mark the good harvest and celebrate prosperity.
Bihu	Assam	On Bihu, farmers and villagers pray to God and express their thankfulness for the great harvest.
Kalbelia	Rajasthan	On the occasion of joy, it is performed by the women of the Kalbelia community also known as Snake Charmers on the tunes of Been.

Q4. Answer: (c) road

The correct answer is road.

Key Points

• Golden Quadrilateral (GQ)

• Atal Bihari Vajpayee, who served as prime minister at the time, laid the foundation for the Golden Quadrilateral (GQ) Highway project in 1999.

• The GQ is the fifth-longest highway in the world and the longest road project in India.

• The National Highways Authority of India (NHAI), a division of the Ministry of Road, Transport, and Highways, is in charge of maintaining the GQ project.

• It essentially consists of a network of highways that connects Delhi (North), Chennai (South), Kolkata (East), and Mumbai, (west) the country's four largest metropolitan cities.

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• In addition to building new express roadways, the Golden Quadrilateral project also renovated and added four or six lanes to existing routes.

Additional Information

• Although the project's planning was finished in 1999, actual construction didn't begin until 2001.

• Despite being expected to be finished by 2006, it actually started operating in January 2012.

• The Golden quadrilateral measures 5,846 kilometres in total length.

• State highways and rural-urban routes are not included in the Golden Quadrilateral.

• The project's expected cost was INR600 billion, however it was one of those that was finished for roughly INR308.58 billion, or nearly half of the estimated cost

• Benefits of GQ

• provides more efficient transportation systems connecting major cities and ports.

• connects to the country's key agricultural, industrial, and cultural centres.

• allows for easier movement of people and goods throughout the nation.

• allows for industrial growth and the creation of jobs in smaller communities by providing access to a variety of markets.

Q5. Answer: (c) 41580

Given:

Area of base (circle) of the cylinder = 1386 cm^2

Height (h) of the cylinder = 30 cm

Formula used:

Cylinder volume = $\pi \times (\text{radius})^2 \times \text{height}$

Area of the circle = $\pi \times (\text{radius})^2$ [Radius (r)]

Calculation:

Area of the circle = $\pi \times (\text{radius})^2$

=> $1386 = \pi \times (r)^2$ .....(1)

=> Volume of the cylinder = $\pi \times (r)^2 \times$ height .....(2)

From (1) and (2) we get,

=> Volume = 1386 x h

=> Volume = 1386 x 30 = 41580 cm^3

Therefore The volume of a cylinder (in cm3) is 41580 cm3.

Q6. Answer: (b) President of India

The correct answer is President of India.

Key Points

• Chief Election Commissioner (CEC)

• The administration of the Union and State election processes in India is the responsibility of the independent, constitutional Election Commission of India (ECI).

• The organisation administers elections for the President and Vice President of India as well as the Lok Sabha, Rajya Sabha, and State Legislative Assemblies.

• In the commission, there are two Election Commissioners (EC) and the Chief Election Commissioner.

• The CEC and election commissioners are chosen by the President of India.

• They are appointed for a definite period of six years, or until they reach the age of 65.

Additional Information

• New Delhi serves as the commission's secretariat.

• CEC and EC have the same privileges and positions as Indian Supreme Court (SC) judges, including the same pay and benefits.

• According to Section 2 of Article 124 of the Constitution, the President appoints the Chief Justice of India and the Supreme Court judges.

• According to Article 75, the Prime Minister shall be chosen by the President, but in order to remain in office, the Prime Minister must have the support of the majority of the Lok Sabha members, who are chosen directly every five years.

• The Lok Sabha speaker is chosen inside the Parliament by the members of the lower chamber. These representatives are referred to as "House of the people" in the Parliament. The 552 members who make up the Parliament vote to elect the speaker.

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Q7. Answer: (a) Anand

Given: Anand, Balu, Charan, Dinesh, and Tom are sitting on a staircase

1: Anand is sitting exactly below Tom.

2: Tom is sitting exactly below Balu. So, there are three possibilities.

Case I	CaseII	CaseIII
	Balu	
	Tom	Balu
Balu	Anand	Tom
Tom		Anand
Anand		

3: Charan is sitting exactly between Anand and Dinesh. So, Case I and Case III is eliminated.

CaseII
Balu
Tom
Anand
Charan
Dinesh

So, Anand is sitting exactly between Tom and Charan.

Hence, Anand is the correct answer.

Q8. Answer: (c) Binary digit

The correct answer is Binary digit.

Key Points

• Binary digit (bit)

• The smallest unit of data that a computer can process and store is a bit (binary digit).

• Similar to an on/off light switch, a bit is always in one of two physical states.

• Usually a 0 or 1, the state is represented by a single binary integer.

• However, yes/no, on/off, or true/false can also be used to describe the state.

• Capacitors are used to store bits in memory because they can store electrical charges.

• Each bit's state, which in turn determines its value, is determined by the charge.

• The majority of systems, process and store data in bytes, even if a computer may be able to evaluate and alter data at the bit level.

Additional Information

• A byte is an eight-bit string that is regarded as a single unit.

• How bits work

• The place value, also known as the bit value, is the value that is assigned to each bit in a byte.

• Based on the individual bits of a byte, the place values are utilised to explain the meaning of the byte as a whole.

• Each bit is given a place value in a right-to-left pattern, with the value starting at 1 and increasing by doubling for each bit.

Q9. Answer: (c) Article 360

The correct answer is Article 360.

Key Points

• Financial emergency

• If the Indian President thinks a situation has arisen that threatens India's financial stability, its credit, or any portion of its territory, he declares a financial emergency.

• Article 360 of the Indian Constitution authorises the declaration of a financial emergency in that country.

• Grounds of Declaration for Financial Emergency

• It states that the President may declare a financial emergency if he is sure that India's financial stability or credit, or any element

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of it, is in risk.

• The executive and legislative authorities will be centralised in such a scenario.

• According to the 38th Amendment Act of 1975, the president's declaration of a financial emergency is definitive, conclusive, and cannot be challenged in court on any grounds.

• The clause included by the 38th Amendment Act of 1975, which suggests that the president's satisfaction is subject to judicial review, was repealed by the 44th Amendment Act of 1978 (that is, it can be challenged in court).

Additional Information

• The Financial Emergency has not yet been declared in India.

• Consequences of financial emergency:

• Any of the States may receive financial guidance from the Union Government.

• The President may request that all or a specific class of government employees have their salary and benefits reduced by the States.

• After being approved by the State Legislature, the President may request that the States hold all money bills for consideration by the Parliament.

• The President may also direct the Central Government employees, including the Supreme Court and High Court Judges, to receive lower salaries and benefits.

• Article 365 empowers the President of India to intervene in the functioning of a state government if it is not adhering to Constitutional principles.

• As per Article 359, In times of national emergency, the President of India is permitted to suspend the right to petition any court for the enforcement of fundamental rights.

• When war, external aggression, or armed rebellion threatens the security of India or a portion of it, the President is authorised by Article 352 to proclaim a national emergency.

Q10. Answer: (c) 55

GIVEN:

12 numbers in an ascending order

mean of last 11 numbers =9

mean of all 12 numbers =11

second number = 662/3 % more than first number

FORMULA USED:

Mean = sum of the terms ÷ number of terms.

Ascending order = arrange the series that begins with the least or smallest and ends with the greatest or largest.

CALCULATION :

Let the numbers be a >b >c>d>e>f>g>h>i>j>k>l

mean of last 11 numbers = 9

=> (b + c +d + e + f+ g+ h + i +j + k + l) ÷ 11 = 9

=> (b + c+ d+ e+ f+ g+ h + i + j+ k + l) = 99 .....(1)

Now, mean of all 12 numbers = 11

=> (a+ b+ c + d+ e + f + g + h+ i + j + k + l) ÷ 12 = 11

=> (a + b + c + d + e + f + g + h + i + j + k + l) = 132 .....(2)

Now, on subtracting eq. 1 from 2 i.e. (2) -(1) we get,

(a + b + c + d + e + f + g + h + i + j +k + l) - (b + c + d + e + f + g + h + i + j + k + l) = (132 - 99)

=> a = 33

Now, second number = 662/3 % more than first number

=> b= 2/3 × 33 +33

=> b= (22+33) = 55.

Therefore The value of second number is 55.

Q11. Answer: (b) Palk Strait

The correct answer is Palk Strait.

Key Points

• Palk Strait

• It is a strait between the Tamil Nadu state of India and the Jaffna District of the Northern Province of the island nation of Sri Lanka.

• Sri Lanka and India are separated by the Palk Strait.

• The Gulf of Mannar, Pamban Island (India), Adam's (Rama's) Bridge (a chain of shoals), and Mannar Island (Sri Lanka) surrounds it on the south (Sri Lanka).

• Palk Bay is another name for the strait's western portion.

• The strait is less than 330 feet (100 metres) deep, 40 to 85 miles (64 to 137 km) long, and 64 to 137 km wide.

• On the Sri Lankan side, it contains many islands and various rivers, including the Vaigai (India).

Additional Information

• Robert Palk, a governor of Madras from 1755 to 1763 during the Company Raj era, is honoured by the strait's name.

• Palk Strait is distinct because of the high contrast between the waves to its north and south.

• The waves in the Bay of Bengal are primarily swelled to the north, while the waves in Palk Bay are primarily sea waves to the south.

• Despite being heavily influenced by the sea, Palk Bay locations have comparatively small notable wave heights.

Q12. Answer: (c) 79.5

Given:

Grouped data = 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89 and 90-99

Formula used:

Mean = (Sum of the values)/(Total no. of values)

Calculations:

Here the class intervals are not continuous. To make them continuous take the mean of upper limit of the class 70-79 and lower limit of the class 80-89.

Mean = (79 + 80)/2 = 79.5,

Therefore The upper limit of the class 70-79 is 79.5.

Q13. Answer: (c) Ibn Battuta

The correct answer is Ibn Battuta.

Key Points

• Rihla

• The Arabic word for a journey or the travelogue that documents it.

• Formal title A Masterpiece to Those Who Contemplate the Wonders of Cities and the Marvels of Travelling.

• This book is a travelogue documenting his lifetime of travel and exploration, which according to his description covered about 70,000 miles.

• Original Language: Arabic

• Ibn Battuta

• Abu Abdullah Muhammad ibn Battutah.

• He was a Berber Maghrebi scholar and explorer who travelled extensively in the lands of Afro-Eurasia, largely in the Muslim world.

• He came to India during the reign of Muhammad bin-Tughlaq.

• He travelled around 117,000 km in pre-modern history.

Additional Information

• Al-Biruni

• One of the most important Muslim authorities in the history of religion.

• Also known as "founder of Indology", "Father of Comparative Religion", "Father of modern geodesy", and the first anthropologist.

• Nationality: Iranian

• Francois Bernier

• French physician and traveller.

• He was associated with the Mughal Court as a personal physician of Dara Shikoh and later as a scientist with Danishmand Khan.

• Hiuen Tsang

• The 7th-century Chinese Buddhist monk, scholar, traveller, and translator.

• He started translating Sanskrit texts that he brought from India and successfully completed the translation of more than 600 Buddhist texts.

Q14. Answer: (b) $x^2 + 4x + 5 = 0$

Concept used:

The quadratic equation $ax^2 + bx + c = 0$ has no real roots only when discriminant $D < 0$.

$D = b^2 - 4ac < 0$

Calculation:

According to the options,

Option 1:

x2 + 4x + 4 = 0

D = b2 - 4ac < 0

=> D = 4^2 - 4 × 1 × 4

=> D = 16 - 16 = 0

Option 2:

x2 + 4x + 5 = 0

D = b2 - 4ac < 0

=> D = 42 - 4 × 1 × 5

=> D = 16 - 20 = -4

Option 3:

x2 + 4x - 4 = 0

D = b2 - 4ac < 0

=> D = 42 - 4 × 1 × (-4)

=> D = 16 + 16 = 32

Option 4:

x2 + 4x - 5 = 0

D = b2 - 4ac < 0

=> D = 42 - 4 × 1 × (-5)

=> D = 16 + 20 = 36

According to the solution, we can see only Options 2 will not have real roots.

Q15. Answer: (d) 12

The correct answer is 12.

Key Points

• 12 years implies the period of 12 months immediately preceding the date of application and for 11 years in the aggregate in the 14 years preceding the twelve months.

• A person shall be deemed to be a Person of Indian origin if he/she, or either of his parents, was born in undivided India or in such other territory which became part of India after the 15th day of August 1947.

• Eligibility criteria for application are under the Citizenship Act, 1955 and the Citizenship Rules, 1956.

Additional Information

• Naturalization is the legal act or process by which a non-citizen of a country may acquire citizenship or nationality of that country.

• The rules of naturalization vary from country to country but typically include a promise to obey and uphold that country's laws and taking and subscribing to an oath of allegiance, and may specify other requirements such as a minimum legal residency and adequate knowledge of the national dominant language or culture.

Q16. Answer: (d) 185/336

Given:

(10 - [3/4 + {41/2 - (1/4 + 1/84)}])/4 = ?

Concept used

BODMAS rule

Calculations:

[10 - [(3/4) + {9/2 - (1/4 + 1/84)}]] ÷ 4

=> [10 - [(3/4) + {9/2 - (21 + 1)/84}]] ÷ 4

=> [10 - [(3/4) + {9/2 - (22/84)}]] ÷ 4

=> [10 - [(3/4) + {9/2 - 11/42)}]] ÷ 4

=> [10 - [(3/4) + {(189 - 11)/42}]] ÷ 4

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=> [10 - [(3/4) + {178/42}]] ÷ 4

=> [10 - {(3/4) + 89/21}] ÷ 4

=> [10 - {(63 + 356)/(21 × 4)}] ÷ 4

=> [10 - (419/84)] ÷ 4

=> [(840 - 419)/84)] ÷ 4

=> [421/84] ÷ 4

=> [421/336]

=> 185/336

Therefore The simplified value of the above equation is 185/336.

Q17. Answer: (b) Jawahar Kala Kendra

The correct answer is Jawahar Kala Kendra.

Key Points

• Jawahar Kala Kendra:

• Multi arts centre located in the city of Jaipur, India.

• It was built by the Government of Rajasthan with the purpose of preserving Rajasthani arts and crafts.

• The plan of Jawahar Kala Kendra, inspired by the original city plan of Jaipur, consists of nine squares with a central square left open.

• The centre consists of eight blocks housing museums, one Amphi theatre and the other closed auditorium, library, art display rooms, cafeteria, small hostel and art studio.

• Also houses two permanent art galleries and three other galleries. and hosts its own theatre festival each year.

Additional Information

• Raj Bhavan Chikitsalaya

• It is located in Jaipur and is one of the leading businesses in the Clinics.

• This well-known establishment acts as a one-stop destination servicing customers both local and from other parts of Jaipur.

• Jain MM Emitra

• It is a hospital located in Ganganagar, Rajasthan.

• It is the major hospital in Jaipur and Rajasthan state of India.

• This government hospital is staffed with 1500 doctors and 4000 nurses with 6251 beds in 43 wards and daily more than 10000 OPD.

• Raj Palace

• The Raj Palace is an imposing palace hotel that holds you spellbound.

• The hotel houses 50 luxurious rooms and suites.

Q18. Answer: (a) KAOE

Alphabetical order with its place value:

According to the positional value of the given table:

Hence, KAOE is the correct answer.

Q19. Answer: (d) Only conclusion II follows.

Explanation:

The possible venn daigram is:

conclusions:

I. All mynas are pigeons. - False (There is no definite relation between mynas and pigeons. Hence, false)

II.All pigeons are mynas. - True (As, all pigeon are mynas as shown above in venn diagram)

Hence, Only conclusion II follows is the correct answer.

Q20. Answer: (a) Rs. 287.50

GIVEN:

loss incurred by sheetal = 28%

selling price of an item = Rs.207

FORMULA USED :

Loss = (C.P. - S.P.) where, C.P. and S.P. are Cost Price and Selling Price respectively.

Loss % = (Loss/C.P.) × 100

CALCULATION:

28 = [(C.P. - 207)/C.P.] × 100

=> 28/100 = (C.P. -207)/C.P.

=> 28 C.P. =(100 C.P. -20700)

=> 72 C.P. = 20700

=> C.P. = Rs.287.50

Therefore The value of C.P. is Rs.287.50.

Q21. Answer: (b) 10 metres

Explanation:

• Jhulan walks 7 metres to the south-east from point X.

• Then Jhulan walks 14 metres to the west.

• She then walks 7 metres to the north-west.

• Jhulan walks 4 metres to the east and reaches point Y.

10 metres is the shortest distance between X and Y.

Hence, 10 metres is the correct answer.

Q22. Answer: (c) Asia

The correct answer is Asia.

Key Points

• Dead Sea

• A salt lake bordered by Jordan to the east and Israel and the West Bank to the west.

• Length: 50km

• One of the saltiest bodies of water on Earth, with almost 10 times more salt than ordinary seawater.

• And this is because the water flows into the Dead Sea from one main tributary, the River Jordan. It then has no way to get out of the lake and so is forced to evaporate.

• The human body can't sink in it due to the salinity which makes it heavier and denser than freshwater.

Additional Information

• Continents and Oceans

• A continent is any of several large landmasses.

• Ordered from largest in the area to smallest, seven continents are Asia, Africa, North America, South America, Antarctica, Europe, and Australia.

• Oceanic islands are frequently grouped with a nearby continent to divide all the world's land into geographical regions.

• Oceans are Pacific (the largest), Atlantic, Indian, Southern (Antarctic), and Arctic (the smallest).

Q23. Answer: (d) 10:01:45

Shortcut Trick

Find the LCM of the given intervals: 3, 6, 12, 15, and 18 seconds.

LCM(3, 6, 12, 15, 18) = 180 seconds.

Convert 180 seconds to minutes → 180 ÷ 60 = 3 minutes.

Next tolling time = Initial time + LCM = 9:58:45 + 3 minutes = 10:01:45.

Therefore The correct answer is 10:01:45.

Alternate Method

Given:

Intervals of tolling: 3 sec, 6 sec, 12 sec, 15 sec, 18 sec.

First tolling time: 9:58:45 hr.

Formula Used:

The time after which all bells will toll together is the Least Common Multiple (LCM) of their individual tolling intervals.

Calculations:

=> Prime factorization of intervals:

=> $3 = 3^1$

=> $6 = 2^1 \times 3^1$

=> $12 = 2^2 \times 3^1$

=> 15 = $3^1 \times 5^1$

=> 18 = $2^1 \times 3^2$

=> LCM = $2^2 \times 3^2 \times 5^1 = 4 \times 9 \times 5 = 180$ seconds.

=> Convert 180 seconds to minutes: 180 ÷ 60 = 3 minutes.

=> Add 3 minutes to the initial time (9:58:45):

=> 9:58:45 + 0:03:00 = 10:01:45.

Therefore The correct answer is 10:01:45.

Additional Information

Application of LCM

LCM is used to find the next simultaneous occurrence of events that happen at fixed periodic intervals, such as bells tolling or traffic lights changing.

Time Conversion Rules

To convert seconds into minutes, divide by 60. To convert minutes into hours, divide by 60 again (1 hour = 3600 seconds).

Number of Times Tolling Together

In a given total time T, the number of times bells toll together is (T ÷ LCM) + 1, where '+ 1' accounts for the initial tolling at the start.

Q24. Answer: (c) 50

GIVEN:

300 people worked for 50 days and completed half of the work. Next 100 people worked for 120 days.

Total time taken to complete the work is 250 days

CONCEPT USED:

Total Work = Time × Number of people

CALCULATION :

300 people in 50 days = ½ work

Let one people 1 day's work be a

=>Total work done by 300 people in 50 days = 300a × 50

Accordingly,

=> 300a × 50 =1/2

=> a =1/ 30,000

100 people's 120 days work = 100a × 120 =100/30,000 × 120 = 2/5

=> Total work done = (1/2 + 2/5) = 9/10

=>Remaining work = 1- 9/10 = 1/10

=> Remaining time = 250 -(50+120+20)= 60 days

Then,

=>Let, the remaining work done by n people.

=> 1/10 = n/30,000 × 60

=> n = 50

Therefore 50 workers must be employed to complete the remaining work on time.

Q25. Answer: (c) 18.8

Given:

Error in measuring sides = 10 % and 8 %

Formula used:

Error % = = x + y + xy/100

Calculation:

Since Area of Rectangle = (side)1 x (side)2

Therefore, error% in area:

=> [10 + 8 + (10 x 8)/100]

=> [18 + (8/10)]

=> [18 + 0.8] = 18.8 %

Therefore The error percent in its area is 18.8%.

Q26. Answer: (d) supply curve

The correct answer is supply curve.

Key Points

• The supply Curve shows the levels of output that a profit-maximizing firm would choose a product at different values of the market price.

• The supply curve is upward sloping because, over time, suppliers can choose how much of their goods to produce and later bring to market.

Additional Information

• Demand Curve

• a graphic representation of the relationship between product price and the quantity of the product demanded.

• Performance Curve

• also known as a bell curve, is a systematic measure for assessing employees' performance via a graphic diagram.

• Variable Curve

• A curve that graphically represents the relation between the total variable cost incurred by a firm in the short-run production of a good or service and the quantity produced.

Q27. Answer: (d) Priya Malik

The correct answer is Priya Malik.

Key Points

• The 2021 World Cadets Wrestling Championships (U17) was the World Cadets Wrestling Championship of combined events and took place from June 19 to 25 in Budapest, Hungary.

• Last year, Priya Malik had become the first Indian woman wrestler to win gold in the 73kg weight class (the highest) at the U17 World.

• Priya Malik won in the women’s 73kg weight category and she has given the country another reason to smile as, on Saturday, weightlifter Mirabai Chanu won a silver medal at the Tokyo Olympics.

• Priya Malik had also won the gold medal in the 2019 edition of Khelo India in Pune and she then went on to clinch gold at the 17th School Games held in Delhi.

• Priya Malik is from Mokhra village in Haryana which has given India the likes of India's first-ever woman Olympic medallist in wrestling, Sakshi Malik.

Additional Information

• Babita Kumari Phogat (born 20 November 1989) is an Indian wrestler, who won the gold medal in the 2014 Commonwealth Games.

• Vinesh Phogat Profile Wrestling Tokyo Olympics: First woman to win Gold in Asian and Commonwealth Games and an Arjuna Awardee.

• Sakshi Malik became the first Indian female wrestler to win a medal at Olympics in Rio 2016.

• Sakshi Malik won the bronze medal in the 58 kg category, becoming the first Indian female wrestler to win a medal at the Olympics.

Q28. Answer: (c) North

1) Rewa(A) runs 40 m towards the East to reach a stadium.

2) She then turns right and runs 20 m. Then, she turns right and runs another 18 m to reach a music store.

3) She turns right and runs 10 m.

4) After this, she turns left and runs 24 m, and finally she turns right and runs 12 m.

We have drawn the figure according to the information given in the question,

So, Rewa (E) is facing the North direction now.

Hence, the correct answer is "North".

Q29. Answer: (a) Brahmaputra

The correct answer is the Brahmaputra.

Key Points

• Jamuna is the downstream course of the Brahmaputra which took place after the earthquake and catastrophic flood between 1782-1787.

Additional Information

• The Brahmaputra enters the plains of Bangladesh after turning south around the Garo Hills below Dhuburi, India.

• After flowing past Chilmari, Bangladesh, it is joined on its right bank by the Tista River and then follows a 240 km (150-mi)

course due south as the Jamuna River.

• The Brahmaputra-Jamuna is the second largest river in Bangladesh and one of the largest rivers in the world, flowing through Tibet, China, India and Bangladesh.

Important Points

• The Yamuna also spelt Jamuna, is the second-largest tributary river of the Ganges by discharge and the longest tributary in India.

• After entering Bangladesh, the main branch of the Ganges river is known as the Padma.

Q30. Answer: (b) 1969

The correct answer is 1969.

Key Points

• Gadgil Formula

• It was named after Dhananjay Ramchandra Gadgil, a social scientist and the first critic of Indian planning.

• The formulation of the third five-year plan(1961 – 1966) for the distribution of plan transfers amongst the states.

• It was adopted for distribution of plan assistance during Fourth and Fifth Five Year Plans.

Additional Information

• The Rashtriya Krishi Vikas Yojana (RKVY) is a continuing scheme under implementation from the 11th Five Year Plan period of the National Development Council (NDC).

• Five-Year Plans

• The First Five-year Plan was launched in 1951 which mainly focused on the development of the primary sector.

• The first prime minister of India Pandit Jawaharlal Nehru was the father of these five-year plans.

• Five-year Plans were formulated by the Planning Commission of India.

Q31. Answer: (d) Kishori Amonkar

The correct answer is Kishori Amonkar.

Key Points

• Carnatic Music

• Carnatic music is known as Karnataka Sangita in the South Indian languages.

• It is a system of music commonly associated with South India, including the modern Indian states of Karnataka, Andhra Pradesh, Telangana, Kerala and Tamil Nadu, and Sri Lanka.

• It has a rich history and tradition.

• Kishori Amonkar

• She was a leading Indian classical vocalist, belonging to the Jaipur Gharana, or a community of musicians sharing a distinctive musical style.

• She was a performer of the classical genre khyal and the light classical genres thumri and bhajan.

Additional Information

• M.S. Subbulakshmi

• Madurai Shanmukhavadivu Subbulakshmi was an Indian Carnatic singer from Madurai, Tamil Nadu.

• She was the first musician ever to be awarded the Bharat Ratna, India's highest civilian honour.

• Priya Sisters

• Shanmukhapriya and Haripriya, popularly known as the Priya Sisters, are Carnatic music singers.

• Bombay Jayashri

• Bombay Jayashri Ramnath is an Indian Carnatic vocalist, singer and musician.

• She has sung in multiple languages including Tamil, Telugu, Kannada, Malayalam and Hindi movies.

Q32. Answer: (d) 16

This is an alternate number series.

It follows the following pattern :

Hence, the correct answer is 16.

Q33. Answer: (c) life expectancy at birth

The correct answer is life expectancy at birth.

Key Points

• Life Expectancy at birth

• The average number of years that a newborn could expect to live if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory, or geographic area.

• Hong Kong has the highest life expectancy.

• Human Development Index

• The statistic composite index of life expectancy, education, and per capita income indicators, is used to rank countries into four tiers of human development.

Additional Information

• Sex ratio

• The sex ratio is the ratio of females to males in a population.

• Qatar has the highest sex ratio, with three males per woman, followed by the United Arab Emirates, having 222 men per 100 women.

Q34. Answer: (c) Dnyaneshwar

The correct answer is Dnyaneshwar.

Key Points

• Dnyaneshwari also referred to as Jnanesvari, Jnaneshwari or Bhavartha Deepika is a commentary on the Bhagavad Gita written by the Marathi saint and poet Sant Dnyaneshwar in 1290 CE.

• Dnyaneshwar took Samadhi at Alandi in 1296 by entombing himself in an underground chamber.

Additional Information

• Acharya Vinoba Bhave wrote a Marathi translation of Bhagwat Geeta, called Geeta.

• Bhagavad Gita, as well as the epic Mahabharata of which it is a part, is attributed to the sage Vyasa, whose full name was Krishna Dvaipayana, also called Veda-Vyasa.

Q35. Answer: (a) D

People : A, B, C, D, E, F are sitting around a circular table facing the centre.

1. C sits second to the right of D.

2. A is an immediate neighbour of C.There are two cases of this statement.

Case 1:

Case 2 :

3. Only two people sit between F and A. Therefore, Case 2 is eliminated.

Case 1

4. B sits to the immediate right of F.

Possible seating arrangement :

Therefore, D sits third to the left of E.

Hence, the correct answer is "D".

Q36. Answer: (b) 6

The correct answer is 6.

Key Points

Dadra Tal:

• Dadra taal, which has six beats, is quite popular in the lighter types of music.

• In India, it is frequently heard in qawwalis, film songs, bhajans, gazals, and folk music.

• The name is derived from its resemblance to the dadra singing style.

• This semiclassical form resembles thumri in certain ways.

• The beginning location of the dadra singing style is also where the style gets its name.

• Dadra is extremely well-liked for a variety of reasons. One reason is the simplicity of playing in three and six beats; they are fairly symmetrical and present no difficulty.

Additional Information

Different types of taal

• The taal or tal is a repeating rhythm pattern usually played by the tabla.

• It usually has between six and sixteen beats.

• The beats are grouped into small sections within the pattern.

• There are mainly six types of tal in classical music. They are: Teen taal, dadra taal, keharwa taal, roopak taal, jhap taal, ek taal.

• Teen taal – 16 Beats
Dadra taal – 6 Beats
Keharwa taal – 8 Beats
Roopak taal – 7 Beats
Jhap taal – 10 Beats
Ek taal – 12 Beats

Q37. Answer: (d) Both conclusions follow

Given statement : Q > P ≥ I > J = M ≤ L < E
Conclusions :
(I) J < E = True (as J = M ≤ L < E)
(II) Q > M = True (as Q > P ≥ I > J = M)
Thus, Both conclusions follow.
Hence, Option 4 is the correct answer.

Q38. Answer: (d) 271

Given:
The number of students in grades 10 = 348
The number of students in grades 11 = 256
The number of students in grades 12 = 480
Calculations:
According to the question,
Maximum no. of students in each group = HCF of all grades
=> HCF of grade 10 = 348 = 2 × 2 × 3 × 29
=> HCF of grade 11 = 256 = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2
=> HCF of grade 12 = 480 = 2 × 2 × 2 × 2 × 2 × 3 × 5
HCF of (348, 256, 480) = 4
Now no. of group in grade 10
=> (No. of students)/(No. of students in each group)
=> 348/4 = 87
=> Now no. of group in grade 11 = 256/4 = 64
=> Now no. of group in grade 12 = 480/4 = 120
Now total no. of groups
=> 120 + 87 + 64 = 271
Therefore The minimum number of groups that would be formed is 271.

Q39. Answer: (d) Philip-Alex

Colleagues : Lewis, Alex, Philip and Siri
1. Lewis is sitting to the immediate right of Alex.
2. Philip is sitting to the immediate left of Siri.
Thus, Philip - Alex is sitting diagonally opposite to each other.
Hence, the correct answer is Philip-Alex.

Q40. Answer: (d) A

Given: Six friends A, B, C, D, E and F are sitting on a bench facing north.
(1): B is sitting at one extreme end of the bench. So, there have two possibilities
Case(I):
Case (II):
(2): F is an immediate neighbour of both just D and B.
Case(I):
Case (II):
(3): A is sitting second to the right of C, who is an immediate neighbour of D. i.e. A is sitting second to the right of C and C is an immediate neighbour of D.

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So, Case (II) is eliminated.

Case (I):

Then, the final arrangement is:

Therefore, A is sitting at the other extreme end.

Hence, the correct answer is A.

Q41. Answer: (a) Lt Gen Manoj Pande

The correct answer is Lt Gen Manoj Pande.

Key Points

Lt Gen Manoj Pande:

• Lt. Gen. Manoj Pande replaced Lt. Gen. C.P. Mohanty, who retired on January 31.

• He replaced Lt. Gen. C.P. Mohanty as the Vice Chief of Army Staff as part of a series of changes to the Army's top leadership.

• He took charge as the new vice chief of the Indian Army on 1st February 2022.

• Lt. Gen. Pande had previously been the Eastern Army Commander.

• In December 1982, he received his commission into the Corps of Engineers (The Bombay Sappers).

Additional Information

• On January 25, 2020, Lieutenant General Satinder Kumar Saini took over as the Indian Army's 41st Vice Chief of the Army Staff.

• He was the Politician and former Vice Chief of Army Staff (VCOAS) of the Indian Army.

• Lieutenant General Sarath Chand is from India.

• From 13 January 2017 until his retirement on May 31, 2018, he held the position of Vice Chief of Army Staff.

• Lieutenant General Chandi Prasad Mohanty was the former general officer of the Indian Army.

• On February 1, 2021, he became the 42nd Vice Chief of the Army Staff.

Q42. Answer: (b) Windows logo key + D

The correct answer is Windows logo key + D.

Key Points

• Windows logo key+D

• Windows logo key+D shortcut is used to display and hide the desktop in windows 10.

• This command forces Windows to switch to the desktop immediately and minimize all open windows to the taskbar.

• We can use this same shortcut to bring back those open windows.

Additional Information

• Other Shortcuts

• Ctrl+H shortcut is used to open the find and replace tool in word processors that allow you to search for a word, character or phrase and you can replace it with something else.

• Windows logo key+H shortcut is used to share the content if supported by the active app.

• Ctrl+D shortcut is used to create a new bookmark for the favourite for the current page.

Q43. Answer: (b) Four

People facing north : F, G, N, O, S, T, Y, Z are sitting in a straight line.

1. F sits second from one of the extreme ends.

Case 1 :

2. Only three people sit between F and G.

Case 1 :

Case 2 :

3. N sits second to the right of G.

Case 1 :

Case 2 :

4. As many people sit to the right of N as to the left of O.

Case 1 :

Case 2 :

5. Only two people sit between O and S.

Case 1 :

Case 2 :

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6. Y sits at one of the positions to the left of S. (Thus, case 2 is eliminated)

7. T sits at one of the positions to the right of Z.

Thus, 4 people sit to the left of Z.

Hence, the correct answer is "4".

Q44. Answer: (a) V

Given: S, T, U, V, W, X are sitting around a circular table for a meeting, facing the centre.

1. X is to the immediate left of V.

2. T is an immediate neighbour of both X and U.

3. S is an immediate neighbour of both W and V.

Therefore, V is an immediate neighbour of both S and X.

Hence the correct answer is "V".

Q45. Answer: (b) 243J

The correct answer is 243J.

Key Points

Article 243J:

• Article 243J of the Indian Constitution is related with the audit of the accounts of Panchayats.

• According to article 243J, "The Legislature of a State may, by law, make provisions with respect to the maintenance of accounts by the Panchayats and the auditing of such accounts".

Additional Information

Other articles:

• According to article 243C, "The Legislature of a State may, by law, make provisions with respect to the composition of Panchayats: Provided that the ratio between the population of the territorial area of a Panchayat at any level and the number of seats in such Panchayat to be filled by election shall, so far as practicable, be the same throughout the State".

• According to article 243K, " The Legislature of a State the conditions of service and tenure of office of the State Election Commissioner shall be such as the Governor may by rule determine: Provided that the State Election Commissioner shall not be removed from his office except in like manner and on the like ground as a Judge of a High Court".

• According to article 243B, " A Gram Sabha may exercise powers and perform such functions at the village level as the Legislature of a State".

Q46. Answer: (b) 50 min

Given:

The ratio of speed of A and B = 4 : 5

Time taken by A = 20 minutes + Time taken by B

Formula used:

Time = Distance/Speed

Concept used:

Whenever the speed is doubled for a fixed distance then the time taken is reduced to half.

Calculation:

Ratio of time taken by A and B = 1/4 : 1/5 = 5 : 4

Difference between the time taken by A and B:

A - B = 20 minutes

=> 5x - 4x = 20 minutes

=> x = 20 minutes

=> 5x = 20 × 5 = 100 minutes

Now the speed of A is doubled then

=> Time = 100/2 = 50 mins

Therefore Time taken by A when speed of his walking is doubled is 50 mins.

Q47. Answer: (b) 120

Given:

A and B together can do a piece of work in 30 days.

Together A, B, and C can complete the same work in 24 days.

Calculations:

Work done by (A + B) in one day = 1/30

Work done by (A + B + C) in one day = 1/24

Work done by (C) in one day = Work done by (A + B + C) in one day - Work done by (A + B) in one day

=> (1/24) - (1/30)

=> (5 - 4)/120 = 1/120

Therefore C alone complete the same work in 120 days.

Q48. Answer: (d) M#N5O

Option 4 is the correct answer.

According to the English alphabet series and its positional value :

The logic followed here is :

Hence, " M#N5O " is the correct answer.

Q49. Answer: (c) Members of both houses of parliament

The correct answer is Members of both houses of parliament.

Key Points

• Members of both Lok Sabha and Rajya Sabha elect the Vice President of India

• The Vice-President is chosen by an electoral college made up of representatives from both Houses of Parliament using a single transferable vote under the proportional representation system.

• Voting in this election is conducted in secret.

• All members of both Houses of Parliament make up the Electoral College, which chooses the Vice-President.

Additional Information

• The Vice-President is not a member of any state legislature or of either house of parliament.

• If a member of either the House of Representatives or the House of the Legislature of any state is elected vice president, that member is assumed to have resigned from that House as of the day they take office.

• To become a Vice President:

• A person should be a citizen of India.

• He has completed the age of 35 years

• He should be qualified for election as a member of the Council of the states.

Q50. Answer: (d) Troposphere

The correct answer is Troposphere.

Key Points

Troposphere

• The lowest layer of our atmosphere is called the troposphere.

• It begins at ground level and rises to a height of approximately 10 kilometers (6.2 miles or 33,000 feet) above sea level.

• Nearly all weather occurs in the troposphere, where we people reside.

• Because the troposphere contains 99 percent of the atmosphere's water vapor, this is where the majority of clouds form.

Additional Information

Stratosphere

• From the troposphere to roughly 50 km (31 miles) above the surface, the stratosphere is present.

• The stratosphere contains the protective ozone layer.

• High-intensity ultraviolet (UV) light from the Sun is absorbed by ozone molecules in this layer, which turns the UV energy into heat.

Mesosphere

• The mesosphere is located above the stratosphere.

• It rises to an altitude of roughly 85 km (53 miles) above our planet.

• The mesosphere is where most meteors burn up. As you ascend through the mesosphere, temperatures drop once more, in contrast to the stratosphere.

Thermosphere

• The thermosphere refers to the layer of extremely rare air above the mesosphere.

• The thermosphere heats up to hundreds or even thousands of degrees as a result of the Sun's high-energy X-rays and UV radiation being absorbed there.

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Q51. Answer: (b) 38

Given:

96 pencils in 12 packets.

All packets contain the same number of pencils.

Calculation:

12 packets contain = 96 pencils

=> 1 packet of pencils contain = 96/12 = 8 pencils

=> 304 pencils will be contained in = 304/8 = 38 packets

Therefore 38 packets will be required to contain 304 pencils.

Q52. Answer: (a) 3906

Given:

Principal = Rs.31600

Time = 1 1/3 years or 16 months

Rate = 9% Per annum

=> Rate as per 8-monthly basis = 8/12 × 9 = 6%

Formulas used:

Compound Interest = Amount - Principal

Amount = P × (1 + R/100)n

Calculation:

Time period = 2 (16 months/8)

Compound Interest = 31600 × (1 + 6/100)²- 31600

=> 31600[(106/100)² - 1]

=> 31600 × 6/100 × 206/100

=> 3905.76~ 3906

Therefore Compound Interest = Rs.3906

Q53. Answer: (d) Neither conclusion I nor II follows

Statements:

1. Some mangoes are oranges.

2. All oranges are grapes.

The logical Venn diagram is given below :

Conclusions :

I. All grapes are oranges. → False (All oranges are grapes but all grapes can't be oranges)

II. All mangoes are grapes. → False (Some mangoes e grapes)

Hence, option 4 is the correct answer.

Q54. Answer: (a) Colin Mackenzie

The correct answer is Colin Mackenzie.

Key Points

• The Surveyor General of India is the Head of the Department of Survey of India, a Department under the Ministry of Science and Technology of the Government of India.

• Colin Mackenzie was appointed as the first Surveyor General of India in 1815.

• He holds this post from 1815 to 1821.

• It was he who produced the first authentic geographical map of south India.

Additional Information

• Major James Rennell received training in surveying in the Royal Navy.

• He joined the East India Company in 1763 and was the first Surveyor General of Bengal.

• He carried out the first comprehensive geographical survey of India.

• Colonel George Everest was a British surveyor and geographer who served as Surveyor General of India from 1830 to 1843.

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Q55. Answer: (b) mo uv

In tabular form, the data can be represented as follows:

code	word
en	find
tu	my
li	book
uv	new
ab	house
mo	tomorrow

Code for " new tomorrow" will be coded as " uv mo"

Hence, the correct answer is "option (2)".

Q56. Answer: (b) 62.5

Given,

K% of 280 = 50% of 350

Concept used:

Simplify L.H.S. = R.H.S.

Calculation:

(K/100) × 280 = (50/100) × 350

=> K = (50 × 350 × 100)/(100 × 280)

=> K = (50 × 350)/280

=> K = (50 × 5)/4 = 250/4

=> K = 62.5

Therefore The value of K is 62.5.

Q57. Answer: (b) Satwiksairaj Rankireddy, Chirag Shetty

The correct answer is Satwiksairaj Rankireddy, Chirag Shetty.

Key Points

• On January 16, 2022, the top doubles duo of Satwiksairaj Rankireddy and Chirag Shetty became the first male Indian team to win the Yonex-Sunrise India Open.

• They triumphed over Indonesia's Mohammad Ahsan and Hendra Setiawan, who have won three world championships.

• In addition to winning the Thailand Open Super 500 championship in 2019, Satwik and Chirag also advanced to the French Open Super 750 final.

Additional Information

Yonex-Sunrise India Open 2022.

• The 2022 India Open also known as the Yonex-Sunrise India Open 2022.

• It was a badminton tournament that took place at the K. D. Jadhav Indoor Hall in New Delhi, India, from 11 to 16 January 2022.

• In 2008, India has hosted the Yonex India Open, an annual badminton competition.

• It is an international badminton competition of the BWF World Tour Super 500 Grade.

• At the 4th Para-Badminton National Championship, which was completed in Bhubaneswar, Odisha, Nitesh Kumar won doubles gold.

• At the BWF World Championships, shuttler Kidambi Srikanth became the first man from India to take home a silver medal.

Q58. Answer: (a) Rs. 606.00

Shortcut Trick

Apply the unitary method directly:

Cost of 13.5 kg = Rs. 681.75

Cost of 12 kg = (681.75 ÷ 13.5) × 12

Cost of 12 kg = 50.5 × 12 = 606

Therefore The correct answer is Rs. 606.00.

Alternate Method

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Given:

Quantity 1 (Q1) = 13.5 kg

Cost 1 (C1) = Rs. 681.75

Quantity 2 (Q2) = 12 kg

Formula Used:

Since cost is directly proportional to weight: C1 ÷ Q1 = C2 ÷ Q2

=> Cost of 1 kg grapes = 681.75 ÷ 13.5

=> Cost of 1 kg grapes = 68175 ÷ 1350

=> Cost of 1 kg grapes = 50.5

=> Cost of 12 kg grapes = 50.5 × 12

=> Cost of 12 kg grapes = 606

Therefore The correct answer is Rs. 606.00.

Additional Information

Unitary Method Concept

The unitary method is a technique for solving problems by first finding the value of a single unit, and then finding the necessary value by multiplying the single unit value.

Direct Variation

When two quantities are related such that as one increases, the other also increases at the same rate, they are in direct variation. The ratio Cost/Weight remains constant.

Calculation Tip

To simplify decimals, multiply both the numerator and denominator by a power of 10 (e.g., 681.75/13.5 = 68175/1350) before performing division.

Q59. Answer: (a) 87

EXPLANATION:

According to the question,

37 > 165 $ 3 < 5

And '<' means '-', '>' means '+', and '$' means '÷'.

so the given equation becomes,

37 + 165 ÷ 3 - 5 [According to BODMAS rule]

= 37 + 55 - 5

= 92 - 5

= 87

.Hence the correct answer is option 1) 87.

Q60. Answer: (a) Sister

The family tree diagram is shown below:

Given information,

1. B's mother R has only one daughter.

2. A is the only son of R.

Now, check all the options

1. Sister → True (B is the sister of A.)

2. Father → False (B is not the father of A)

3. Brother → False (B is not the brother of A)

4. Mother's sister → False (B is not the Mother's sister of A)

Hence, the correct answer is Sister.

Q61. Answer: (b) 56 cm

Given,

The area of a trapezium (A) = 1792 cm^2

Perpendicular distance (h) = 28 cm

Length of one of the parallel sides (a) = 72 cm

Formula used:

Area of trapezium = 1/2 × (a + b) × h,

Where a and b are the lengths of the parallel sides and h stands for the perpendicular distance between the parallel sides.

Calculation:

According to the question,

=> 1792 = 1/2 × (72 + b) × 28 cm²

=> 1792 = (72 + b) × 14

=> 128 = (72 + b)

=> b = 128 − 72

=> b = 56 cm.

Therefore The length of the other parallel side (b) is 56 cm.

Q62. Answer: (d) 384575

Shortcut Trick

A number is divisible by 15 if it is divisible by both 3 and 5.

All options end in 0 or 5, so all are divisible by 5.

Check divisibility by 3: The sum of digits must be a multiple of 3.

For 384575: 3 + 8 + 4 + 5 + 7 + 5 = 32 (32 is not divisible by 3).

Therefore The correct answer is 384575.

Alternate Method

Given Numbers: 123465, 234675, 234570, 384575

Formula: 15 = 3 × 5. A number is divisible by 15 if it is divisible by co-prime factors 3 and 5.

Step-by-step verification:

=> Option 1 (123465): Last digit is 5. Sum = 1+2+3+4+6+5 = 21. Since 21 ÷ 3 = 7, it is divisible by 15.

=> Option 2 (234675): Last digit is 5. Sum = 2+3+4+6+7+5 = 27. Since 27 ÷ 3 = 9, it is divisible by 15.

=> Option 3 (234570): Last digit is 0. Sum = 2+3+4+5+7+0 = 21. Since 21 ÷ 3 = 7, it is divisible by 15.

=> Option 4 (384575): Last digit is 5. Sum = 3+8+4+5+7+5 = 32. Since 32 ÷ 3 leaves a remainder of 2, it is not divisible by 3.

=> Since 384575 is not divisible by 3, it cannot be divisible by 15.

Therefore The correct answer is 384575.

Additional Information

Divisibility Rule of 3

A number is divisible by 3 if the sum of its digits is a multiple of 3.

Divisibility Rule of 5

A number is divisible by 5 if its unit digit (last digit) is either 0 or 5.

Composite Divisibility

If a number is divisible by two co-prime numbers x and y, then it is also divisible by their product (x × y).

Rule for 15

Since 3 and 5 are co-prime, divisibility by 15 requires fulfilling both rules for 3 and 5 simultaneously.

Q63. Answer: (d) July 1857

The correct answer is July 1857.

Key Points

• During the period of the uprising of 1857, Baraut (a town in baghpath), witnessed 158 deaths.

• Hundreds of farmers were killed when a British force attacked the village and hanged the rebels.

• Shah Mal was one of them, who was killed during the Revolt of 1857 while leading a fighting force of farmers against the British.

• Shah Mal was from Bijroul village near the town of Baraut.

Additional Information

Uprising of 1857

• The Indian Rebellion of 1857 was a major uprising in India in 1857–58 against the rule of the British East India Company.

• The East India Company functioned as a sovereign power on behalf of the British Crown.

• The rebellion began on 10 May 1857 in the form of a mutiny of sepoys of the Company's army in the garrison town of Meerut.

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Q64. Answer: (d) Saturday

EXPLANATION:

Given that:-

• No of days from 19^(th) July 2019 to 21^(st) September 2019 = 64 days as 2019 is a non-leap year.

• Since, it was Friday on 19th July 2019, every 7th day from 19^(th) July will be a Friday.

• Thus, no. of odd days = 64/7 = 1

• Now, 19th July 2019 (Friday) + 1 odd days = 21st September 2019 (Saturday)

• 21st September 2019 will be Saturday.

The correct answer is option 4) Saturday.

Q65. Answer: (a) 5 hours

Given,

Akshita covers different distance (D) at different speeds (S) as follows:

D1 = 300 km, S1 = 50 km/h

D2 = 360 km, S2 = 30 km/h

D3 = 420 km, S3 = 60 km/h

D4= 216 km,

Formula used:

Speed = Distance /Time

Average Speed (SAVE) = (Total distance travelled)/Total time taken

Calculation:

According to the question

Average Speed (S_(AVE)) = (300 + 360 + 420)/(6 + 12 + 7)

=> 1080/25 = 43.2 m/s

For time taken by Akshita to travel 216 km with average speed will be:

=> S_(AVE) = D4/T

=> T = D4/S_(AVE) = 216/ 43.2

=> T = 5h

Therefore The time taken to travel 216 km with an average speed of 46.6 km/h is ~ 5 hours.

Q66. Answer: (a) India

The correct answer is India.

Key Points

• It is also known as IBF World Championships.

• The tournament is among the most prestigious in badminton, offering the most ranking points, together with the Summer Pumpics Badminton Tournaments.

• It was introduced in 1992.

• The winner of these tournaments are also crowned as "World Champions" of the sport and are awarded a gold medal.

• It is held once every three years.

• In the starting it was hosted by IBF(International Badminton Federation).

Additional Information

There are some years and countries where BWF organized

1997	**Sweden**
1980	Indonesia
1983	Denmark
1991	Denmark
2015	Indonesia
2017	Scotland
2018	China
2019	Switzerland

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2021	Spain
2026	India

Q67. Answer: (b) 45

EXPLANATION:

The logic followed here is :

Sum of position value of letter + 10

PAINT' is coded as '70'

P + A + I + N + T +10

= 16 + 1 + 9 + 14 + 20 + 10

= 60 +10

= 70.

'POLISH' is coded as '89'

P + O + L + I + S + H + 10

= 16 + 15 +12 + 9 + 19 + 8 + 10

= 79 + 10

= 89.

'CLEAN' = ?

C + L + E + A + N + 10

= 3 + 12 + 5 + 1 + 14 + 10

= 35 + 10

= 45

Hence, 45 is the correct answer.

Q68. Answer: (b) monthly

The correct answer is monthly.

Key Points

• The poverty threshold, poverty limit, poverty line, or breadline is the minimum level of income deemed adequate in a particular country.

• A common method used to estimate poverty in India is based on the income or consumption levels

• The cost of housing, such as the rent for an apartment, usually makes up the largest proportion of this estimate, so economists track the real estate market and other housing cost indicators as a major influence on the poverty line.

• Individual factors are often used to account for various circumstances, such as whether one is a parent, elderly, a child, married, etc.

Additional Information

• Poverty estimation in India is now carried out by NITI Aayog's task force through the calculation of the poverty line based on the data captured by the National Sample Survey Office under the Ministry of Statistics and Programme Implementation (MOSPI).

Q69. Answer: (b) 64 : 1331

LOGIC: (First Number)^3 : (First Number + 3)^3

1. 125 : 512 = $5^3 : 8^3$

= 5 : $(5 + 3)^3$

2. 64 : 1331 = $4^3 : 11^3$

= 4 : $(4 + 7)^3$

3. 343 : 1000 = 7^3: 10^3

= 7 : $(7 + 3)^3$

4. 216 : 729 = 6^3: 9^3

= 6 : $(6 + 3)^3$

Since difference between two number is 3 in all the option except for option 2.

Hence, option 2 : 64 : 1331 is the correct answer.

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Q70. Answer: (a) 36√2 cm

Shortcut Trick

Direct relationship between Perimeter (P) and Diagonal (d) of a square: P = 2√2 × d

Given Diagonal = 18 cm

=> Perimeter = 2√2 × 18

=> Perimeter = 36√2 cm

Therefore The correct answer is 36√2 cm.

Alternate Method

Given: Diagonal (d) = 18 cm

Formula used: Diagonal = Side × √2

=> 18 = Side × √2

=> Side = 18 / √2

=> Side = (18 × √2) / (√2 × √2)

=> Side = 18√2 / 2

=> Side = 9√2 cm

=> Perimeter of the square = 4 × Side

=> Perimeter = 4 × 9√2

=> Perimeter = 36√2 cm

Therefore The correct answer is 36√2 cm.

Additional Information

Area of a Square

The Area can be calculated using the diagonal: Area = $d^2 / 2$ or using the side: Area = $Side^2$.

Side and Diagonal Relation

For any square with side 'a', the Diagonal is always a√2, which is derived from the Pythagoras Theorem ($a^2 + a^2 = d^2$).

Perimeter of Polygons

For a regular polygon with 'n' sides of length 's', the Perimeter is n × s. For a square, n = 4.

Q71. Answer: (d) Nageshwar

The correct answer is Nageshwar.

Key PointsThe Harappans procured materials for craft production in various ways:

• They established settlements such as Nageshwar and Balakot where shells were available.

• Other such sites were Shortughai, in far-off Afghanistan, the best source of lapis lazuli.

• A blue stone that was apparently very highly valued, and Lothal which was near sources of carnelian from Bharuch in Gujarat.

• Steatite was procured from south Rajasthan and north Gujarat.

Additional Information

• Settlements of the Harappans were situated at such places where raw materials were easily available.

• Recent archaeological find suggests that Harappans procured materials from other countries like - they got copper from Omen.

• Some of the raw materials were locally available while some were purchased from different places.

• Soil and wood were locally available raw materials.

• Stones, fine quality wood, metals were procured from different places.

Q72. Answer: (d) 15

The logic followed here is:

1. 6, 8 = 12

6 x 8 = 48

= 48 ÷ 4

= 12

2. 9, 8 = 18

9 x 8 = 72

= 72 ÷ 4

= 18

so, 6, 10 will be

6 x 10 = 60

= 60 ÷ 4

= 15

Hence option 4 is the correct answer.

Q73. Answer: (a) XTZ

The positions of the alphabets are:

The pattern followed here is

In KSQ : OWU

In FIJ : JMN

Similarly,

In TPV

Hence, XTZ is the correct answer.

Q74. Answer: (b) MVC

The position of English alphabets are

The pattern followed here is:

In OSU : LQT

In IKL : FIK

Similarly,

Hence option 2 is the correct answer.

Q75. Answer: (d) Porbandar

The correct answer is Porbandar.

Key Points

• East-West Corridor

• The Indian cities of Silchar and Porbandar are connected via the Golden Quadrilateral's East-West corridor.

• National Highways Authority of India (NHAI) is in charge of overseeing the project under the Ministry of Road Transport and Highways.

• The length of the golden quadrilateral's East-West corridor is 3,300 kilometres.

• The East-West corridor is associated via National Highway 27.

Additional Information

• The biggest highway project (currently under construction) in India is the North-South-East-West Corridor.

• To connect Indian cities like Srinagar, Kanyakumari, Kochi, Porbandar, and Silchar, the project of North-South-East-West Corridor will build 7300 kilometres of four- and six-lane expressways.

• North-South Corridor

• The 4,000-kilometer-long north-south corridor of the golden quadrilateral connects Srinagar to Kanyakumari/Kochi.

• It is associated with National Highway 44.

Q76. Answer: (b) Kusum

The logic followed here is:

1. Only three girls are older than Harshita.

> > Harshita > >.

2. Only four girls are younger than Sangita.

Sangita > > Harshita > >.

3. Priyanka is younger than Sangita and older than Harshita.

Sangita > Priyanka > Harshita > >.

4. Tiya is the youngest among all.

Sangita > Priyanka > Harshita > > Tiya.

5. Kusum is not the oldest among all.

Ragini > Sangita > Priyanka > Harshita > Kusum > Tiya.

So, Kusum is not older than Harshita.

Hence, the correct answer is Kusum.

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Q77. Answer: (d) 17

Shortcut Trick

Since the speed of the Train is constant, Time is directly proportional to Distance.

Case 1: Crosses pole → Distance = 360 m → Time = 12 sec

Case 2: Crosses bridge → Distance = 360 + 150 = 510 m

Required Time = (12 ÷ 360) × 510 = 17 sec

Therefore The correct answer is 17 sec.

Alternate Method

Given: Length of Train = 360 m, Time to cross pole = 12 sec, Length of Bridge = 150 m.

Formula Used: Speed = Distance ÷ Time

=> Speed of Train = Length of Train ÷ Time to cross pole

=> Speed = 360 ÷ 12 = 30 m/s

=> Total distance to cross Bridge = Length of Train + Length of Bridge

=> Total Distance = 360 + 150 = 510 m

=> Time taken = Total Distance ÷ Speed

=> Time taken = 510 ÷ 30 = 17 sec

Therefore The correct answer is 17 sec.

Additional Information

Relative Speed

When two objects move in the same direction, relative speed = |v1 − v2|. In opposite directions, relative speed = v1 + v2.

Unit Conversion

To convert km/hr to m/s, multiply by 5/18. To convert m/s to km/hr, multiply by 18/5.

Distance Logic

When a train crosses a stationary point object (pole/man), distance = length of train. When crossing a platform/bridge, distance = train length + platform/bridge length.

Q78. Answer: (d) DISC 5.0

The correct answer is DISC 5.0.

Key Points

• DISC 5.0 is a reflection of the Government’s resolve to create a self-reliant defence sector.

• The challenge is to take innovation, design & development to newer heights.

• iDEX plays a crucial role in building a strong military & ‘AatmaNirbhar’ defence industry.

• Government support to the private sector in building ‘AatmaNirbhar Bharat.'

Additional Information

• DISC's full form is Defence India Startup Challenge.

• The Ministry of Defence is chaired by Shri. Rajnath Singh.

• Stating that DISC 5.0 is a reflection of the Government’s resolve of creating an ‘AatmaNirbhar’ defence sector, he exuded confidence that this challenge will move forward from its earlier editions and take innovation, design & development to newer heights.

Q79. Answer: (d) 22/25

Given:

7/9,6/7,22/25, 11/13

Concept Used:

Simplify the fractions into decimal digits.

Calculation:

=> 7/9 = 0.77

=> 6/7 = 0.85

=> 22/25 = 0.88

=> 11/13 = 0.84

The largest value is 0.88 which can be fractionalized into 22/25.

Therefore The largest fraction is 22/25.

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Q80. Answer: (d) Rs. 408

Given:

Cost Price (CP) of article A and B = Rs. 2312

Sold article A at 16% Loss

Sold article B at 20% Gain.

Formula used:

Selling Price (SP) at Gain% = Cost price × (100 + Gain%)/100

Selling Price (SP) at Loss% = Cost price × (100 − Loss%)/100

Calculations:

According to the question,

Let CP of article A be 'a', then CP of article B = (2312 - a).

=> SP at Gain% = SP at Loss%

=> CP of A × (100 - 16)/100 = CP of B × (100 + 20)/100

=> a × (84) = (2312 - a) × (120)

=> 84a = (2312 × 120) - (120a)

=> 84a + 120a = 277440

=> a = 277440 / 204 = 1360

The CP of article A = Rs. 1360 and CP of article B = 2312 - 1360 = Rs. 952.

Now the difference in cost of both the articles,

=> CP of article A - CP of article B

=> 1360 - 952 = Rs. 408

Therefore The difference between the cost prices of A and B is Rs. 408.

Q81. Answer: (c) Sharankumar Limbale

The correct answer is Sharankumar Limbale.

Key Points

• Sharankumar Limbale received the 30^(th)Saraswati Samman by the KK Birla Foundation in March 2021.

• Sharankumar Limbale is a famous Marathi novelist, poet, critic and short story writer.

• The 30th edition of the prize, the highest recognition in the field of Indian literature in the country, was given to Limbale for his 2018 Marathi novel, Sanatan.

• Apart from the citation, the award carries a plaque and award money of Rs. 15 lakh.

Additional Information

• The Saraswati Samman is an annual award for outstanding prose or poetry literary works in any of the 22 languages of India listed in Schedule VIII of the constitution of India.

• It is named after an Indian goddess of knowledge.

• The K.K. Birla Foundation was established in 1991 by Krishna Kumar Birla in Delhi.

• Its mission is to promote literature (especially Hindi literature) and the arts, as well as education and social work.

Q82. Answer: (c) B12

The correct answer is Vitamin B12.

Key Points

• Cyanocobalamin is a man-made form of Vitamin B12.

• It's used to treat and prevent vitamin B12 deficiency anaemia (when you have low levels of this vitamin in your body).

• Your body requires vitamin B12 to make red blood cells.

Additional Information

• Vitamin B2 - (Riboflavin) helps break down proteins, fats and carbohydrates.

• Vitamin B6 - pyridoxine, is a water-soluble vitamin found naturally in many foods, as well as added to foods and supplements.

• Vitamin B1 - Thiamin (thiamine) is a water-soluble vitamin, as are all vitamins of the B complex.

Q83. Answer: (b) 8/23

GIVEN:

x + 1/x = 4.

FORMULA USED:

a + 1/a = n.

$a^2 + 1 = n \times a$

$a^2 = an - 1$.

CALCULATION :

$x^2 + 1 = 4x$

$\Rightarrow x^2 = 4x - 1$

Now, putting the value of x^2 in $(4x^2 + 4)/(9x^2 + 10x + 9)$

$\Rightarrow (4(4x - 1) + 4)/(9(4x - 1) + 10x + 9) = (16x - 4 + 4)/(36x - 9 + 10x + 9)$

$= 16x/46x = 8/23$.

=> The value is 8/23.

Q84. Answer: (c) increasing returns to scale

The correct answer is increasing returns to scale.

Key Points

• The law of variable proportions emerges because factor proportions change as long as one factor is held unchanged and the other is raised.

• When a proportionate increase in all inputs results in the rise in output by the same proportion, the production function is said to exhibit Constant returns to scale (CRS).

Additional Information

• In economics, returns to scale describe what happens to long-run returns as the scale of production increases, when all input levels including physicalcapital usage are variable (able to be set by the firm).

• The concept of returns to scale arises in the context of a firm's production function.

Q85. Answer: (a) m/s/s

The correct answer is m/s/s.

Key Points

Acceleration

• Any process in which the velocity varies is referred to as acceleration. Because velocity is both a speed and a direction, there are only two ways to accelerate: modify your speed or your direction—or both.

• When we compute acceleration, we take velocity and time and divide them in terms of meters per second [m/s] by the second [s].

• Furthermore, dividing distance by time twice equals dividing distance by time squared. As a result, the SI unit of acceleration is the meter per second squared, abbreviated as ($m\ s^2$).

• The unit of acceleration is m/s/s.

• The rate of change in velocity of an object with respect to time is defined as acceleration.

• Acceleration is measured as a vector quantity.

• It has magnitude as well as direction.

Additional InformationMeter

• A meter is equal to 1650763.73 times the wavelength of light emitted in a vacuum as a result of the electronic transition from the 2p^(10) to the 5d^5states in Krypton-86. However, during the 17th General Assembly of Weights and Measures in 1983, a new definition for the meter in terms of light velocity was approved. A meter, according to this definition, is the distance travelled by light in a vacuum over a time span of 1/299, 792, 458 a second.

• Kilogram: The weight of a cylinder of platinum-iridium alloy stored at the International Bureau of Weights and Measures at Serves, near Paris.

• Second, one second is the duration of 9192631770 cycles of the radiation corresponding to the transition between the two hyperfine levels of the ground state of caesium-133 atoms.

• One ampere is defined as the current that, when flowing in two parallel conductors of infinite length and negligible cross-section and put one meter apart in a vacuum, causes each conductor to experience a force of 2 10^(-7) newtons per meter of length.

• Kelvin is defined as a fraction of 1/273.16 of the thermodynamic temperature of the triple point of water.

Q86. Answer: (d) 30°

GIVEN :

$\text{cosec}\ \theta \times \tan\theta = 2/\sqrt{3}$

FORMULA USED :

$\tan\theta = \sin\theta/\cos\theta$

cosecθ = 1/sinθ

cos30° = √3/2

cos60° = ½

CALCULATION :

1/sinθ × sinθ/cosθ = 2/√3

=> 1/cosθ = 2/√3

=> cosθ = √3/2

=> θ = 30° as, we know that cos30° = √3/2

Therefore The value of θ is 30°.

Q87. Answer: (b) Environment around living area

The correct answer is Environment around the living area.

Key Points

• Life Expectancy, Expected years of schooling and Gross National Income per capita are the parameter used to calculate Human Development Index.

• Human Development Index is the statistical tool used to measure a country's overall achievement in social and economic dimensions.

• The social and economic dimensions of a country are based on the health of people, their level of educational attainment and their standard of living.

Additional Information

• The human development Index(HDI) was developed by Pakistani economist Mahbub ul Haq and was further used to measure a country's development by the United Nations Development Programme's Human Development Report Office.

• United Nation Development Programme (UNDP) released Human development Index.

Q88. Answer: (d) Statement I and II together are not sufficient

Statements:

I. Preetee is 10 years younger to her sister Arpita.

Preetee's age is 10 years less than Arpita.

so in order to find preetee's age, firstly Arpita's age must be known.

II. Arpita is 25 years younger to her mother and 30 years younger to her father.

Arpita's age is 25 years less than her mother. And again Arpita's age is 30 years less than her father.

so in order to find Arpita's age either her mother's age or her father's age must be known.

But the age of both of her mother's and father's are not known.

Conclusion: Nobody's present age is mentioned. so it is not possible to find preetee's age.

The correct answer is Statement I and II together are not sufficient.

Q89. Answer: (b) 7.04

Shortcut Trick

Convert units to meters: radius (r) = 0.7 m and height (h) = 2.4 m.

Using Pythagorean triplet (7, 24, 25), the slant height (l) = 2.5 m.

Total Surface Area (TSA) = πr(r + l) = (22/7) × 0.7 × (0.7 + 2.5).

TSA = 2.2 × 3.2 = 7.04 m².

Therefore The correct answer is 7.04 m².

Alternate Method

Given:

Radius (r) = 70 cm = 0.7 m

Height (h) = 240 cm = 2.4 m

Formula Used:

Slant height (l) = √(h² + r²)

Total Surface Area (TSA) = πr(l + r)

=> l = √(2.4² + 0.7²)

=> l = √(5.76 + 0.49) = √6.25

=> l = 2.5 m

=> TSA = (22/7) × 0.7 × (2.5 + 0.7)

=> TSA = 2.2 × 3.2

=> TSA = 7.04 m²

Therefore The correct answer is 7.04 m².

Additional Information

Slant Height of a Cone

The distance from the apex to any point on the base circumference, calculated as $l = \sqrt{(r^2 + h^2)}$.

Curved Surface Area (CSA)

The area of the side surface of the cone, given by the formula CSA = πrl.

Volume of a Cone

The capacity of a right circular cone is calculated as $V = (1/3)\pi r^2 h$.

Unit Conversion Rule

To convert cm² to m², divide the value by 10,000 (since 1 m² = 100 cm × 100 cm).

Q90. Answer: (c) Two

The word can be represented as follows:

Hence there are only two such pairs of letters.

The correct answer is option 3.

According to English alphabetical order,

• The letter between A and B is 0.

• The letter between T and S is 0.

In the Given word "HABITS",

• The pair AB has 0 letters between them.

• The pair TS has 0 letters between them.

Q91. Answer: (d) New Zealand

The correct answer is New Zealand.

Key Points

• Laurel Hubbard

• Laurel Hubbard representing New Zealand became the first-ever transgender athlete to take part in the Tokyo 2020 Olympics under the women's 87+ kg weightlifting category.

• She has battled back from a serious injury in 2018 that threatened to cut her career short.

• Laurel Hubbard is considered among the top athletes in the world when her category is taken into consideration.

• Hubbard, who is from Auckland, won a silver medal at the 2017 World Championships and gold in the 2019 Pacific Games in Samoa.

Additional Information

• The theme for Tokyo Olympics was "United by Emotion".

• New Games included: karate, surfing, skateboarding and sports climbing.

• India medal tally: 7; Gold : 1, Silver: 2, Bronze:4

• Best performing country: USA

Q92. Answer: (d) Vatican City

The correct answer is Vatican City.

Key Points

• The smallest country by population is Vatican City.

• The area of Vatican City is 0.49 km²/0.17 mi².

• The smallest country in the world in terms of population is Vatican City, which has approximately 800 citizens.

• Since the 1950s, the UN Statistics Division (UNSD), as the secretariat to the decennial World Programme on Population and Housing Censuses, has promoted population censuses worldwide under the authority of the UN Statistical Commission.

• Vatican City, a city-state surrounded by Rome, Italy, is the headquarters of the Roman Catholic Church.

• It's home to the Pope and a trove of iconic art and architecture.

• Vatican city currency is Euro.

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Additional Information

• The second smallest country is Monaco with an area of 2 km²/0.78 mi².

• Rabat is the capital of Morocco.

• Currency: Moroccan dirham

• Territories such as Tokelau (New Zealand), Saint Barthélemy (France), and Macau (China) are comparably tiny, but not independent countries, and are therefore ineligible.

Q93. Answer: (d) Table Tennis

The correct answer is Table Tennis.

Key Points

• Bhavina Patel won a silver medal in Table tennis at the 2020 Tokyo Paralympic Games in August 2021.

• Bhavina Patel won the silver medal after losing to China's Zhou Ying in the final of the women's singles class 4 event at the Tokyo Paralympics in Japan.

• The 34-year-old, who was diagnosed with polio when she was 12, beat her Serbian opponent 11-5 11-6 11-7 in a quarterfinal match that lasted 18 minutes.

Additional Information

• Anurag Thakur, the Union Minister for Youth Affairs and Sports launched the theme song “Kar De Kamaal Tu” for the Indian Paralympic contingent.

• Bhavinaben Patel hails from Mehsana, Gujarat.

Q94. Answer: (b) Atlantic Ocean

The correct answer is Atlantic Ocean.

• The famous Bermuda triangle is located in the Atlantic Ocean.

Key Points

• The Bermuda Triangle, also known as the Devil's Triangle, is an urban legend focused on a loosely-defined region in the western part of the North Atlantic ocean.

• It is said that more than 50 ships and 20 aeroplanes are said to have mysteriously disappeared.

• The area, whose boundaries are not universally agreed upon, has a vaguely triangular shape marked by the Atlantic coast of the Florida panhandle (in the United States), Bermuda, and the Greater Antilles.

Additional Information

• The Atlantic Ocean is the second-largest of the world's five oceans, with an area of about 106,460,000 km2 (41,100,000 sq mi).

• It covers approximately 20% of Earth's surface and about 29% of its water surface area.

• It is known to separate the "Old World" of Africa, Europe and Asia from the "New World" of the Americas in the European perception of the World.

• Historically, there are four named oceans: the Atlantic, Pacific, Indian, and Arctic.

• However, most countries - including the United States - now recognize the Southern (Antarctic) as the fifth ocean.

Q95. Answer: (a) SPARSH

The correct answer is SPARSH.

Key Points

• On 8 July 2021, the Ministry of Defence implemented a web-based integrated system for sanction and disbursement of defence pension, The name of that system was SPARSH.

• This web-based system processes pension claims and credits pensions directly into the bank accounts of defence pensioners without relying on any external intermediary.

• The full form of SPARSH is System for Pension Administration (Raksha).

• Comprehensive Pension Package (CPP), an end-to-end Online System facilitating and easing every aspect of Defence Pensions from Initiation to Disbursement and more is being launched shortly in a phased-wise manner.

Additional Information

• Ujjwala and Himachal Grihini Suvidha scheme of Centre and State government prove a boon for the people of the state and making Himachal Pradesh the first state in the country to become a smoke-free state.

• To enable an area-based development approach, a new scheme called the Pradhan Mantri Adarsh Gram Yojana (PMAGY) was launched on a Pilot basis during 2009-10

• The 'Mission Niryatak Bano' is a campaign to promote aspiring exporters in Rajasthan by the Rajasthan government's industries department and the Rajasthan State Industrial Development and Investment Corporation (RIICO).

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Q96. Answer: (d) Indian capital market operations

The correct answer is India capital market operations.

Key Points

• SEBI (Securities and Exchange Board of India) is the body which is accountable for the efficient functioning of the share market of our country.

• The SEBI was constituted as a non-statutory body on April 12, 1988, through a resolution of the Government of India.

• The SEBI was established as a statutory body in the year 1992, and the provisions of the Securities and Exchange Board of India Act, 1992 (15 of 1992) came into force on January 30, 1992, with its headquarters in Mumbai, India.

• SEBI has regional offices in the capital of India, Chennai, Kolkata, and Ahmedabad, together with other local regional offices across prominent cities in India.

• Role of SEBI:

• Issuers of securities

• Investor

• Financial Intermediaries

Important Points

• Powers and Functions of SEBI

• To protect the interests of Indian investors within the stock exchange.

• To promote the event and hassle-free functioning of the stock exchange.

• To regulate the business operations of the stock market.

Additional Information

• When you make trades within the forex market, you're basically buying the currency of a specific country and simultaneously selling the currency of another country

• The private sector is the part of the economy sometimes brought up because the citizen sector, which is owned by private groups, usually as a way of multinational for profit or non-profit, instead of being owned by the govt.

• The Healthcare and Public Health sectors protect all sectors of the economy from hazards like terrorism, communicable disease outbreaks, and natural disasters.

Q97. Answer: (a) 15

Given,

The data: 15, 26, 15, 29, 19, 18, 19, 15, 24, 23, 15, 19.

Concept used:

The mode is the value that is repeatedly occurring in a given set

Calculation:

values	15	18	19	23	24	26	29
frequency	4	1	3	1	1	1	1

The value 15 has the maximum frequency.

Therefore The mode of data is 15.

Q98. Answer: (c) TQ12

Lets go through the options-

The pattern followed here is:

Here, TQ12 is not follow any pattern.

Hence, the correct answer is TQ12

Q99. Answer: (d) +, ÷, ×, -, =

The given equation is 25 * 15 * 5 * 4 * 16 * 21

Let us go through the options.

Option 1: ÷, ×, +, -, =

L.H.S

25 ÷ 15 × 5 + 4 - 16

= 5/3 × 5 + 4 - 16

= 25/3 + 4 - 16

= 37/3 - 16

= - 11/3 ≠ R.H.S

Option 2: +, ×, -, =, ÷

L.H.S

25 + 15 × 5 - 4

=25 + 75 - 4

= 100 - 4

= 96

R.H.S

16 ÷ 21

= 0.76

L.H.S ≠ R.H.S

Option 3: -, +, ÷, ×, =

L.H.S

25 - 15 + 5 ÷ 4 × 16

= 25 - 15 + 1.25 × 16

= 25 - 15 + 20

= 25 + 5

= 30 ≠ R.H.S

Option 4: +, ÷, ×, -, =

25 + 15 ÷ 5 x 4 - 16 = 21

25 + 3 x 4 - 16

25 + 12 - 16

37 - 16

= 21.

Hence, the correct answer is option 4.

Q100. Answer: (a) 39°

Shortcut Trick

In a cyclic quadrilateral, the sum of opposite angles is 180°.

=> angle B = 180° − angle D = 180° − 129° = 51°

Since AB is the diameter, the angle subtended in the semicircle is a right angle:

=> angle ACB = 90°

In right-angled triangle ABC, the acute angles are complementary:

=> angle BAC = 90° − angle B = 90° − 51° = 39°

Therefore The correct answer is 39°.

Alternate Method

Given:

ABCD is a cyclic quadrilateral where AB is the diameter of the circle.

angle ADC = 129°

Formula/Theorem Used:

1. Opposite angles theorem: The sum of opposite angles of a cyclic quadrilateral is 180°.

2. Angle in a semicircle: The angle subtended by a diameter at any point on the circumference is 90°.

3. Angle sum property: The sum of all interior angles of a triangle is 180°.

Calculations:

Since ABCD is a cyclic quadrilateral, the opposite angles angle ADC and angle ABC must sum to 180°:

=> angle ADC + angle ABC = 180°

Substitute the given value of angle ADC = 129° into the equation:

=> 129° + angle ABC = 180°

=> angle ABC = 180° − 129°

=> angle ABC = 51°

Since AB is the diameter of the circle, the angle subtended by it at point C on the circumference is a right angle:

=> angle ACB = 90°

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Now, in triangle ABC, the sum of all interior angles is 180°:

=> angle BAC + angle ACB + angle ABC = 180°

Substitute the values of angle ACB = 90° and angle ABC = 51°:

=> angle BAC + 90° + 51° = 180°

=> angle BAC + 141° = 180°

=> angle BAC = 180° − 141°

=> angle BAC = 39°

Option Analysis:

• Option (1) 39° is correct because angle BAC = 180° − (angle ACB + angle ABC) = 180° − (90° + 51°) = 39°.

• Option (2) 49° is incorrect because it would imply angle ABC = 41°, which contradicts the cyclic quadrilateral property where angle ABC = 180° − 129° = 51°.

• Option (3) 41° is incorrect because it would mean angle ABC = 49°, which does not satisfy angle ABC + angle ADC = 180°.

• Option (4) 51° is incorrect because 51° is the measure of angle ABC, not angle BAC.

Therefore The correct answer is 39°.

Additional Information

Cyclic Quadrilateral Properties

A quadrilateral is cyclic if all its four vertices lie on a single circle. The sum of opposite angles is always 180° (angle A + angle C = 180° and angle B + angle D = 180°).

Angle in a Semicircle

An angle inscribed in a semicircle is always a right angle (90°). This is a special case of the inscribed angle theorem where the central angle is 180°.

Exterior Angle of a Cyclic Quadrilateral

The exterior angle formed by extending one side of a cyclic quadrilateral is equal to the interior opposite angle.

Q101. Answer: (b) South Africa

The correct answer South Africa.

Key Points

• BRICS is an abbreviation that alludes to the non-industrial nations of Brazil, Russia, India, China, and the Republic of South Africa.

• It can work as a base and moreover as a passage for the venture from the BRICS nations to the immense market of a billion Africans.

• Goldman Sachs financial analyst Jim O'Neill began the term BRIC (without South Africa) in 2001, asserting that by 2050 the four BRIC economies would come to rule the overall economy.

• The Republic of South Africa was added to the rundown in 2010.

• South Africa is now the voice of the mainland at different worldwide gatherings.

Additional Information

• The higher Committee for Sudan relations with BRICS Countries held a day-to-day gathering at the Republican Palace, headed by the representative director of the Committee, BRICS is the abbreviation for a relationship of 5 significant arising public economies.

• The job and commitment of the BRICS are vital for the world economy regarding populace (40%), GDP (25% ostensible and US$ 16.039 trillion), land inclusion (30%), world exchange (18%), and worldwide forex (US$ 4 trillion).

Q102. Answer: (b) Vithalbhai Patel

The correct answer is Vithalbhai Patel.

Key Points

• Vithalbhai Patel was the pol and co-founder of Swaraj Party with Chittaranjan Das and Motilal national leader. He was electoral to Central legislature in 1925.

• The Central legislature was the lower house of the Imperial general assembly, the general assembly of British Republic of India. it absolutely was created by the govt. of Republic of India Act 1919, implementing the Montagu–Chelmsford Reforms. it absolutely was conjointly generally referred to as the Indian legislature and therefore the Imperial legislature.

• Vithalbhai Patel (27 Sept 1873 – twenty two Oct 1933) was associate Indian lawgiver and pol, co-founder of the Swaraj Party and elder brother of Sardar patel.

Additional Information

• On 8 April, 1929, revolutionaries Bhagat Singh and Batukeshwar Dutt threw bombs at the Central legislature at Delhi. The incident is thought because the Central Assembly Bombing Case in fashionable Indian History.

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• Legislature of the Union, that is termed Parliament, consists of the President and 2 homes, referred to as Council of States (Rajya Sabha) and House of the individuals (Lok Sabha).

• After returning to Republic of India Netaji Subhash Chandra Satyendra N. Bose came beneath the influence of nationalist leader and joined the Indian National Congress.

• On Gandhiji's directions, he started operating beneath Deshbandhu Chittaranjan Das, whom he later acknowledged his political guru.

Q103. Answer: (c) 1975

The correct answer is 1975.

Key Points

• Khajuraho Festival is organized by the Kala Parishad under the Madhya Pradesh Government whereby many popular classical dancers from all over India perform.

• The Khajuraho Dance Festival began in 1975 to celebrate this art and since then it has become one of the most anticipated cultural events in India.

• This festival highlights the richness of the Indian classical dance styles such as Kathak, Bharathanatyam, Odissi, Kuchipudi, Manipuri, Gaudiya Nritya, and Kathakali.

Additional Information

• The culture of Madhya Pradesh is a harmonious amalgamation of Hindus, Muslims, Buddhists, Jains, Christians and Sikhs.

• Kala Parishad (Academy of Performing and Fine Arts) is the Cultural wing of the Govt. of National Capital Territory of Delhi

• The opposition is being coordinated by the Culture Department through Ustad Alauddin Khan Music and humanities Academy Bhopal.

• The opposition was facilitated consistently at the noteworthy town of Khajuraho set inside the locale of Chhatarpur, the craftsmen perform inside the backcloth of authentic landmarks.

• Khajuraho, got comfortable Madhya Pradesh, holds the social customs of Central Bharat. a tiny low town in Bundelkhand, Khajuraho is unbelievable for its incredible sanctuaries place the dance rivalry is ordered ritualistically, inside the long stretch of February one time each year. The opposition could be an interesting festival of Indian traditional moves.

Q104. Answer: (d) Saturday

No of days from 3rd February 2015 to 6th June 2015 = 25 + 31 + 30 + 31 + 6 = 123 as 2015 is a non-leap year.

Since, it was Tuesday on 3rd February 2015, every 7th day from 3rd February will be a Tuesday.

Thus, no. of odd days = 123/7 = 4

Now, 3rd February 2015 (Tuesday) + 4 odd days = 6th June 2015 (Saturday)

6th June 2015 will be Saturday.

Hence, "option 4" is the correct answer.

Q105. Answer: (d) 34.64

GIVEN:

Two poles

20 m long ladder which makes an angle of 60 with one pole and an angle of 30 with other on turning.

FORMULA USED:

$\sin 60° = \sqrt{3}/2$

$\cos 30° = \sqrt{3}/2$

CALCULATION:

Let the pole be AB and CD respectively

BD be the width where BD=BE+ED

Let the ladder be AE with one pole and CE be the ladder on turning with other pole

Hence Pole AB makes an angle of 60 with ladder AE

sin 60= perpendicular/hypotenuse=BE/AE

$\sqrt{3}/2 = BE/20$

$BE = 10 \times \sqrt{3} = (10 \times 1.73) = 17.3$

On turning with other pole ladder becomes EC makes an angle of 30 with the road

COS 30° = Base/hypotenuse

ED/EC=ED/20

$\sqrt{3}/2 = ED/20$

ED=10 × √3

(10 × 1.73) = 17.3

Width of the road =(17.3+17.3) = 34.6

Therefore Width of the road is 34.6 m.

Q106. Answer: (c) Bangladesh

The correct answer is Bangladesh.

Key Points

• Bangladesh is following countries does India share its longest land border.

• Bangladesh is a South Asian country whose capital is Dhaka. The Sunderban Delta is well-known. It is the world's ninth most populous country. It became a part of Pakistan after India was partitioned. The border between India and Bangladesh is 4,096 kilometers long, making it the world's fifth-longest international border. As a result, India and Bangladesh share the world's longest border.

• Bangladesh and India share a 4,096-kilometer-long (2,545-mile) international border, the world's fifth-longest land border, which includes 262 kilometres (163 miles) in Assam, 856 kilometres (532 miles) in Tripura, 318 kilometres (198 miles) in Mizoram, 443 kilometres (275 miles) in Meghalaya, and 2,217 kilometres (1,378 miles) in West Bengal.

• Along the border are the Bangladeshi divisions of Mymensingh, Khulna, Rajshahi, Rangpur, Sylhet, and Chittagong.

• The border between the two states is marked by a number of pillars. On both sides, little delimited sections of the boundary are fenced.

Additional Information

• Myanmar, formerly known as Burma, is a Southeast Asian country. Myanmar's capital is Naypyidaw. Myanmar's largest city is Yangon.

• Bhutan is bounded to the east by Arunachal Pradesh, to the west by Sikkim, and to the south by Assam and West Bengal. The Himalayan monarchy is also bordered by Nepal and China.

• Between India and Pakistan, there is just one fully operational international border crossing - the Wagah-Attari border. It is well-known for the Wagah border ritual, which is held every evening.

Q107. Answer: (c) 125%

Given:

The side of a square is increased by 50%.

Formula used:

Area of square = a^2

Concept used:

Percentage change in area of square = [(Final Area - inital area)/initial area] x 100

Calculations:

let side of square = x

Then area of square = x^2

If the side of the square is increased by 50% then,

Side of square = x + 50%of x

=> x + 50x/100

=> x + x/2 = (2x + x)/2 = 3x/2

Area = $(3x/2)^2 = 9x^2/4$

Percentage change in area of square,

=> [(9x2/4-x2) / x2] x100

=> (5x2/4x2) x 100

=> 1.25 x100 = 125%

Therefore If the length of the side of the square is increased by 50% then the area will increase by 125%.

Confusion Points

The change in percentage is the difference between the final and initial percentage divided by the initial percentage multiplied by 100.

Q108. Answer: (d) AEGMNT

Concept: Letters are in increasing alphabetical order.

Solution:

• 'MAIDEN' is written as 'ADEIMN'.

• • 'SILVER' is written as 'EILRSV'.

• • Therefore,MAGNET will be written as AEGMNT.

• Thus, the correct answer is option4.

Q109. Answer: (a) Damodar

The correct answer is Damodar.

Key Points

• Damodar is an East flowing river.

• The Damodar River is a Ganga tributary, and the Mahanadi River flows east.

• The Damodar River was previously known as the "River of Sorrows" since it used to flood numerous areas in the districts of Bardhaman, Hooghly, Howrah, and Medinipur.

Floods continue to affect the lower Damodar Valley, although the devastation they caused in previous years is now history.

Additional Information

• The Narmada river rises in the state of Madhya Pradesh and flows into the Arabian Sea along Gujarat's coast.

• Tapi originates in Madhya Pradesh and flows into the Gulf of Khambhat on India's western coast.

• The Mandovi River is one of Goa's major west-flowing rivers. The river flows in a north-easterly direction for about 5 kilometres before turning westward.

Q110. Answer: (b) 71/2

Given:

(17/2 ÷ 15/2 × 13/2)/(17/2 ÷ (15/2 × 13/2)) ÷ 169/30

Concept:

Follow the BODMAS rule according to the table given below:

(17/2 ÷ 15/2 × 13/2)/(17/2 ÷ (15/2 × 13/2)) ÷ 169/30

=> 17/2×2/15×13/2over17/2×4/(13×15) ÷ 169over30

=> 17×13over15×2over17×2over13×15 ÷ 169over30

=> 17×13over15×2 × 13×15over17×2 ÷ 169over30

=> 169over4 × 30over169 = 15over2 = 71/2

Q111. Answer: (a) Kathak

The correct answer is Kathak.

Key Points

• Pandit Birju Maharaj was associated with the Kathak dance form.

• He was a descendant of the Maharaj family of Kathak dancers, which includes his two uncles, Shambhu Maharaj and Lachhu Maharaj, and his father and guru, Acchan Maharaj.

• He was born on 4 February 1938 in Handia and died on 17 January 2022.

• He was awarded Padma Vibhushan and Filmfare Award for Best Choreography and more.

• Kathak is one of the eight major forms of Indian classical dance. It is the classical dance form of Uttar Pradesh. The origin of Kathak is traditionally attributed to the travelling bards in ancient northern India known as Kathakars or storytellers.

• Awards:

• National Film Award for Best Choreography: 2013

• Sangeet Natak Akademi Awards: 1964

• Filmfare Award for Best Choreography: 2016

Additional Information

• Bharatanatyam is an ancient dancing art form from southern India that serves as a foundation for many other dance styles.

• Rukmini Devi Arundale was a well-known Bharatanatyam dancer in India.

• Kathakali is one of the world's oldest theatre forms, known for its opulence.

• Kalamandalam Gopi is a well-known Kathakali dancer in India.

• The Charkula dance form has been practised for generations.

Q112. Answer: (d) Both I and II can be possible courses of action

The logic followed here is.

Here, statement is assumed to be hundred percent true. On the basis of this, courses of action are examined whether they pursue

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the statement or not.

In the given question,

• statement represents 'the sales of a specific product sold by company X has decreased in recent times, much to the company's concern.'

• So, the company can conduct a proper study or can decrease the price. The former course of action will help in updating the market strategy which will in turn help the company to have higher number of sales as compared to current scenario while the latter course of action satisfies law of demand. Law of demand states that as the price decreases, the demand of the product increases.

Hence, Both I and II can be possible courses of action is the correct answer.

Q113. Answer: (c) Silicon

The correct answer is Silicon.

Key Points

• A solar cell is an electronic device that converts the energy of light directly into electricity by the photovoltaic effect.

• The photovoltaic effect is the generation of voltage and electric current in a material upon exposure to light.

• It is a physical and chemical phenomenon.

• It is also named a photovoltaic cell.

• The source can be sunlight or any artificial light.

• A solar cell consists of a layer of p-type silicon and n-type silicon.

• PV cells are wafers made of crystalline seconders covered with a grid of electrically conductive metal traces.

Additional Information

• The operation of a photovoltaic(PV) cell requires three basic attributes

• The absorption of light

• The separation of charge carriers of opposite types.

• The separate extraction of those carriers to an external circuit.

Q114. Answer: (b) 5

Given:

Number of floors: 6 (The lowermost floor of the building is numbered 1 so on till the topmost floor is numbered 6.)

Number of friends:6

Name of friends: Amit, Vinay, Rajiv, Mukul, Chetan and David

Explanation:

• Mukul lives on floor number 4.

• Chetan lives on floor number 1.

Floor	Name
6	
5	
4	Mukul
3	
2	
1	Chetan

• Amit lives on even number floor.

• Either he stays at 2 or 6.

Floor	Name (case1)	Name (case2)
6	Amit	
5		
4	Mukul	Mukul
3		

2		Amit
1	Chetan	Chetan

• Vinay lives above the floor Rajiv lives.
• Vinay does not live on floor number 6.

Floor	Name (case1)	Name (case2)
6	Amit	Vinay
5	David	Rajiv
4	Mukul	Mukul
3	Vinay	David.
2	Rajiv	Amit
1	Chetan	Chetan

• Therefore, case2 is eliminated.
• The final solution is:

Floor	Name (case1)
6	Amit
5	David
4	Mukul
3	Vinay
2	Rajiv
1	Chetan

So, David lives on 5th floor.
Hence, 5 is the correct answer.

Q115. Answer: (a) Rs. 36000

Given:
Total amount = Rs. 55800
Scheme A:
Amount =?
Time Period = 2 years
Compound Interest = 20% per annum
Formula used:
Future Value of A = Amount × (1 + R%)^T
Concept used:
The interest of both the schemes are equal so simplify by keeping one scheme in L.H.S. and the other equation in R.H.S.
Calculations
Let amount invested in Scheme A = Rs. x
Amount invested in Scheme B = Rs. (55800 - x)
According to question,
x [(1 + 20/100) 2 - 1] = (55800 - x) × 4 × 20/100
=> x [36/25 - 1] = (55800 - x) × 4 × 1/5
=> x[(36 - 25)/25] = (55800 - x) × 4/5
=> 11x/25 = 44640 - 4x/5
=> 11x/25 + 4x/5 = 44640
=> 31x/25 = 44640
=> x = (44640 × 25)/31

=> x = Rs. 36000

Therefore The amount invested in scheme A is Rs. 36000.

Q116. Answer: (c) 1.5

Given:

$(5.5^3 - 4^3)/(30.25 + 22 + 16)$

Concept used:

$a^3 - b^3 = (a - b)(a^2 + ab + b2)$

Calculations:

$(5.5^3 - 4^3)/(30.25 + 22 + 16)$

$=> (5.5 - 4)((5.5)^2+5.5 \times 4+(4)^2)/((5.5)^2+5.5 \times 4+(4)^2)$

$=> (5.5 - 4) = 1.5$

Hence, the correct answer is option (3).

Q117. Answer: (a) Rs. 1560

Given:

Principal (P) = Rs. 48750

Rate of interest (R) = 16% per annum

Time period (T) = 73 days

Formula used:

Simple Interest = $(P \times R \times T)/100$

Concept used:

As the rate of interest is in per annum we have to convert the given time period of days into years.

Time Period = 73/365 = 0.2 year.

Calculations:

Simple Interest = $48750 \times 16 \times 0.2/100 = 156000/100$

Simple Interest = 1560 Rs.

Therefore The Simple Interest for 48750 rs at 16% per annum for 73 days is Rs.1560.

Q118. Answer: (d) z + 3

Given:

The average of the first five numbers is 'z'

Calculations:

Let the seven consecutive numbers be $(x - 3), (x - 2), (x - 1), x, (x + 1), (x + 2), (x + 3)$

Average of first five numbers,

$z = [(x - 3) + (x - 2) + (x - 1) + x + (x + 1)]/5$

$=> 5x - 5 = 5z$

$=> x - 1 = z$

$=> x = z + 1$ ----(1)

Average of last three numbers,

$[(x + 1) + (x + 2) + (x + 3)]/3$

$=> (3x + 6)/3$

$=> 3(x + 2)/3$

$=> x + 2 = z + 1 + 2 = z + 3$

Therefore The average of last three numbers is $(z + 3)$.

Q119. Answer: (c) Gross Domestic Fixed Capital Formation

The correct answer is Gross Domestic Fixed Capital Formation.

Key Points

- GDFCF is measured by following
- The total value of a producer's acquisition, fewer disposals, of fixed assets during the accounting period.
- Certain additions to the value of non-produced assets are realized by the productive activity of institutional units.
- It also meant gross capital formation consists of outlays on additions to the fixed assets of the economy plus net changes in the

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level of inventories.

Confusion Points

• GFCF(Gross Fixed Capital Formation)

• It is a component of the expenditure on gross domestic product and thus shows something about how much of the new value added to the economy is invested rather than consumed.

Q120. Answer: (b) 332

Given :

On x - axis = minutes of conversation.

On y - axis = number of calls.

Calculation :

First we have to find total no. of minutes for each bar (a BAR represents no. of calls according to the minutes of conversation).

Total no. of minutes for each bar = no. of minutes × no. of calls.

For 1 minute conversation = no. of minutes × no. of calls

=> 1 × 4 = 4 minutes.

For 2 minute conversation = 2 × 14 = 28 minutes.

For 3 minute conversation = 3 × 40 = 120 minutes.

For 4 minute conversation = 4 × 30 = 120 minutes.

For 5 minute conversation = 5 × 12 = 60 minutes.

To find the total number of minutes of conversations, we have to add all the minutes.

Total no. of minutes = 4 + 28 + 120 + 120 + 60.

Total no. of minutes = 332 minutes.

Therefore The total no. minutes of telephone conversations that took place on that day is 332 minutes.

Hint

Multiply the digit above the bar to the digit below it and add the products for all bars.

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