RRB NTPC Tier I Official Paper (Held On: 9 Apr 2016 Shift 3) (Previous Year Paper)

RRB NTPC • 2016 • 100 questions • 90 minutes • Answer key and solutions

Take this paper as a timed mock test

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

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

Q1. If x = 7, y = 4, z = 9, then which of the following is TRUE?

I. x + y + z = 20

II. x - y + z = 13

III. x + y - z = 3

IV. -x + y - z = -12

A. I and II

B. III and IV

C. I and IV

D. I and III

(a) A

(b) D

(c) C

(d) B

Q2. A sum of money was invested for 2 years at a fixed interest rate. Had that money been invested at a 5% higher rate of interest, it would have gained Rs. 200 more. Find the amount?

A. Rs. 3000

B. Rs. 2600

C. Rs. 5000

D. Rs. 2000

(a) A

(b) B

(c) C

(d) D

Q3. Who is considered the world's first programmer?

A. Alan Turing

B. Ada Lovelace

C. Tim Berners - Lee

D. Steve Wozniak

(a) Alan Turing

(b) Ada Lovelace

(c) Steve Wozniak

(d) Tim Berners - Lee

Q4. Which country has won the maximum number of Oscar awards to date in the category of foreign films?

A. Italy

B. France

C. Japan

D. Spain

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

Q5. The purchase price of 30 items is equal to the selling price of 40 items. Find the % of profit or loss in sales.

A. 20% loss
B. 25% profit
C. 25% loss
D. 20% profit

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

Q6. What is the SI unit of pressure?

A. Newton per square centimetre (Newton per square centimetre)
B. Newton - Square Meter (Newton - Square Meter)
C. Newton per square meter (Newton per square meter)
D. Newton - Square centimetre (Newton - Square centimetre)

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

Q7. What is the study of a map called?

A. Calligraphy
B. Geography
C. Geology
D. Cartography

(a) Geology
(b) Geography
(c) Cartography
(d) Calligraphy

Q8. Which Indian state has decided to implement Bharat Net service that will connect all gram panchayats through optical fiber?

A. Maharashtra
B. Punjab
C. Tamil Nadu
D. Uttar Pradesh

(a) Punjab
(b) Maharashtra
(c) Tamil Nadu
(d) Uttar Pradesh

Q9. A cycle wheel completes 5000 rounds in 44 km. Find the radius of wheels? (π = 22/7)

A. 140 cm
B. 270 cm
C. 70 cm
D. 120 cm

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

Q10. How many numbers are completely divisible by 175 in the following numbers:-

500, 875, 1575, 1915, 2625, 2850, 3325, 4335

A. 4
B. 5
C. 6
D. 7

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

Q11. 'D' is the son of 'F'. 'E' is the sister of 'F', and her son is 'A' and daughter is 'X'. If 'B' is the maternal uncle of 'A'; So how is 'D' related to 'B'?

A. Cousin
B. Nephew
C. Maternal Uncle
D. Brother

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

Q12. What is the full form of the abbreviation RLWL in relation to trains?

A. Regret Loss Waiting List
B. Remote Location Waiting List
C. Railway Location Waiting List
D. Railway List Waiting Locked

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

Q13. In 2015, which of the following was awarded by the European Atomic Research Organization (CERN) for contributions to science and spirituality?

A. Gyalwang Drukpa
B. Dalai Lama
C. Matthieu Richard
D. Sogyal Ripoche

(a) Dalai Lama
(b) Matthieu Richard
(c) Gyalwang Drukpa
(d) Sogyal Ripoche

Q14. Find the value of tan(210°).

A. 1/√3
B. -1/√3
C. -1

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D. 1

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

Q15. 15 men can do a work in 330 days. But after 220 days 15 more people are recruited, then in how many more days the work will be completed?

A. 80 days
B. 60 days
C. 55 days
D. 50 days

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

Q16. If the stone is called blue, blue is called water, water is called a tree, the tree is called a bag, the bag is called rainbow and rainbow is called sky, then what is used to carry books?

A. Tree
B. Rainbow
C. Sky
D. Water

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

Q17. Where is Indira Gandhi Memorial Tulip Garden?

A. Darjeeling
B. Mysore
C. Srinagar
D. Chandigarh

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

Q18. Arrange the following fractions in ascending order:-

A. 11/17 < 41/63 < 3/7 < 21/29
B. 41/63 < 3/7 < 21/29 < 11/17
C. 3/7 < 11/17 < 41/63 < 21/29
D. 3/7 < 11/17 < 21/29 < 41/63

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

Q19. Which of the following metals constitutes a mercury mixture when it is mixed with a metal?

A. Mercury
B. Silver
C. Aluminum

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D. Gold

(a) Mercury
(b) Silver
(c) Aluminum
(d) Gold

Q20. Which is the Legislative capital of Andhra Pradesh state?

A. Amaravati
B. Tirupati
C. Hyderabad
D. Vijayawada

(a) Amaravati
(b) Tirupati
(c) Hyderabad
(d) Vijayawada

Q21. Find the mean of 10, 9, 8, 7, 8, 6.

A. 6
B. 10
C. 12
D. 8

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

Q22. The ratio of length, width and height of a room is 3 : 2 : 1. If its volume is 3072 cubic meters, find its width.

A. 18 meters
B. 16 meters
C. 24 meters
D. 12 meters

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

Q23. Which of the following is not an input device for a computer?

A. Keyboard
B. Mouse
C. Scanner
D. Monitor

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

Q24. Pointing to a girl, Sunil said, "Her mother's brother is the only son of my mother's father and the brother has only one sister". How is the girl's mother related to Sunil?

A. Maternal Aunt
B. Sister
C. Mother
D. Grandmother

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

Directions

Consider the following information and answer the following questions based on it.

Five different boxes of blue, green, black, red and white are placed in an irregular order from left to right such that -

1. The black box is not on the end edges.
2. The white box is second from the right end.
3. There are two boxes between the red and black boxes and one box between the blue and red boxes.

Q25. Which box is the first from the left?

A. Red
B. White
C. Blue
D. Green

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

Q26. Which of the following statements is true?

A. The black box is second from the left.
B. The white box is second from the left.
C. The green box is third from the left.
D. The white box is third from the right.

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

Q27. Which box is in the middle of the row?

A. Black
B. Blue
C. Green
D. Red

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

Q28. Who won the Nobel Prize for Literature in 2005?

A. Patrick Modiano
B. Svetlana Alexievich
C. Alice Munro

(a) C
(b) A
(c) D
(d) None of the above

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Q29. Which is the point of origin of river Narmada?

A. Amarkantak

B. Sahyadri Hills

C. Maikal Hills

D. Mahadeo Hills

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

Q30. One question and three statements are numbered (I), (II) and (III). You have to decide whether the facts given in the statements are sufficient to answer the question given below.

Question: What is the length of the rectangle?

Statement:

I. The perimeter of the rectangle is 80 meters.

II. The sum of the adjacent sides is 40 meters.

III. The width of the rectangle is 10 meters.

Choose the correct option.

A. Only I is sufficient.

B. Only I and II are sufficient.

C. III and one from I or II are sufficient.

D. II and one from I or III are sufficient.

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

Q31. In a certain code language 'STARE' is written as '19201185', then in that code language how will 'MOULD' be written?

A. 132115124

B. 131215214

C. 131521124

D. 131512214

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

Q32. Which city will host the 2016 Summer Olympics?

A. Seoul

B. Rio de Janeiro

C. London

D. Tokyo

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

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Q33. 32 men can work for 6 hours daily and can complete a work in 10 days. How many men are needed to finish this work in 12 days by working 10 hours per day?

A. 15

B. 16

C. 17

D. 18

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

Q34. If 234A is divisible by 9, find the value of the smallest natural number A?

A. 5

B. 6

C. 7

D. 9

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

Q35. A trader marked 50% higher price on an article and later gave 20% discount on it. What percentage of profit did the merchant get after giving a discount?

A. 30%

B. 125%

C. 25%

D. 20%

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

Q36. Find the similarity among the following:

Mango, Guava, Watermelon, Orange

A. These are all fruits.

B. They are all red in colour.

C. They have big seeds inside.

D. It is available in all seasons in India.

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

Q37. What is the minimum age required to become the Prime Minister of India?

A. 21 Years

B. 25 Years

C. 30 Years

D. 35 Years

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

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Q38. What is the full name of SONAR?

A. Sound Neutralization and Ranging

B. Sound Navigating and Reaching

C. Sound Navigation and Ranging

D. Sound Neuralization and Reaching

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

Q39. Which of the following gases is not inert gas?

A. Helium

B. Neon

C. Radon

D. Hydrogen

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

Q40. Read the following passage and answer the questions based on it.

As climate change affects seasonal patterns, water management and distribution become important. Rainwater harvesting has become particularly important in urban areas these days. This process involves collecting and storing rainwater for later use. It recovers groundwater levels, prevents water wastage during the monsoon, reduces soil erosion and helps in the availability of drinking water. Above all, it promotes the method of water conservation.

This paragraph supports which of the following statements the most?

A. Climate change has adversely affected humanity.

B. Forests help maintain groundwater levels.

C. Rainwater harvesting is the need of the hour.

D. There are not enough water reserves for urban areas.

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

Q41. If A = 1, BE = 7 then CUT = ?

A. 33

B. 44

C. 45

D. 42

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

Directions

The following table shows the distance (in km) traveled by four friends U, K, V and G during their morning walk from Monday to Friday.

Consider the following information and answer the following questions based on it.

	Monday	Tuesday	Wednesday	Thursday	Friday
U	6	5	4.5	5.5	4

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K	4	4.5	3	3.5	5
V	4	4	4.5	5	5.5
G	5	4.5	5	5.5	6

Q42. Who covered the shortest average distance in five days?

A. U
B. G
C. K
D. V

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

Q43. Who covered the maximum distance from Monday to Friday?

A. K
B. U
C. V
D. G

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

Q44. When was the total maximum distance traveled by four friends?

A. Monday
B. Tuesday
C. Thursday
D. Friday

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

Q45. If Rajgir : Stone then Carpenter : ?

A. Ara
B. Furniture
C. Wood
D. Steel

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

Q46. The sum of three numbers is 245. If the ratio of the first and second numbers is 2 : 3 and the ratio of the second and third numbers is 5 : 8, then find the second number:

A. 50
B. 75
C. 90
D. 420

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

Q47. When is World AIDS Day celebrated each year?

A. 1 December
B. 1 January
C. 14 February
D. 8 March

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

Q48. Which was the first unmanned satellite built by ISRO?

A. Bhaskar - I
B. Aryabhatt
C. Rohini
D. Megha

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

Q49. From which city was the capital of India moved to Delhi?

A. Bombay
B. Madras
C. Calcutta
D. Mysore

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

Q50. Arrange the following disarranged sentences to make them a meaningful sentence.:

It _____
1. to protect
2. is
3. the forests of the country
4. our duty

The proper order should be:

A. 2143
B. 2134
C. 2314
D. 2413

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

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Q51. Calculate:

(40.7×40.7×40.7+1)/(40.7×40.7-40.7+1)

A. 417

B. 4.17

C. 41.7

D. 441.7

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

Q52. Which Internet giant has launched a training program for online promotion of its products to empower rural self help group (SHG) in Telangana?

A. Amazon

B. Flipkart

C. Facebook

D. Twitter

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

Q53. What will be the next number in the following series?

3, 4, 9, 16, 27, 64, 81, ...

A. 243

B. 256

C. 324

D. 356

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

Q54. If Vinay had run at a speed of 2 km/h faster, he would have taken 10 minutes less to cover 4 km, find the speed of Vinay?

A. 7 km/h

B. 5 km/h

C. 4 km/h

D. 6 km/h

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

Q55. What percentage of nitrogen is in our atmosphere?

(a) 72%
(b) 75%
(c) 78%
(d) 65%
(e) 55%

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Q56. A person covers the first 200 km at a speed of 50 km/h and the next 200 km at 70 km/h. Find its average speed in a journey of 400 km.

A. 56.5 km/h

B. 60.6 km/h

C. 64.6 km/h

D. 58.3 km/h

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

Q57. A question and three statements are numbered (I), (II) and (III). You have to decide whether the facts given in the statements are sufficient to answer the question given below.

Question: Five people A, B, C, D and E are sitting facing each other in a circle. E is seated between whom?

Statement:

I. The person sitting to the left of B and to the right of A is the same.

II. D is to the right of B.

III. A sits between E and C.

Choose the correct option.

A. Only I and II are sufficient.

B. Only I and III are sufficient.

C. Only III is sufficient.

D. Facts are insufficient.

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

Q58. Find the missing word from the given alternatives.

KDD, MFF, OHH, ?, SLL

A. PJJ

B. PKK

C. QJJ

D. QKK

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

Q59. Who was the first Indian to travel in space?

A. Rakesh Sharma

B. Kalpana Chawla

C. Sunita Williams

D. Ravish Malhotra

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

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Q60. From the following options, find the pair that is related like the pair given below.

Up : Down

A. Water : Sand

B. Sea : Lake

C. Good : Bad

D. Bee : Box

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

Q61. According to the Constitution of India, which one of the following is not a fundamental right?

A. Right to freedom

B. Right to live

C. Right to equality

D. Right to protect the country

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

Q62. Which disease is caused due to iodine deficiency?

A. Night Blindness

B. Goitre

C. Scurvy

D. Rickets

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

Q63. The sum of two numbers is 119 and their HCF is 17 and LCM is 170, so the inverse sum of the numbers is _____.

A. 119/501

B. 501/119

C. 7/170

D. 170/7

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

Q64. Who won the IBSF World Snooker Championship 2015?

A. Geet Sethi

B. Pankaj Advani

C. Aditya Mehta

D. Hamza Akbar

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

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Q65. Find the range of 10, 21, 5, 1, 3, 17, 19, 2.

A. 19
B. 10
C. 20
D. 17

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

Q66. Arrange the following disorganized sentences to make them a meaningful sentence:

He _____
J: a popular tennis player
K: but
L: is also
M: is ranked No. 1 in badminton
The proper order should be:

A. MLKJ
B. MKLJ
C. LJKM
D. LMKJ

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

Directions

35 out of 100 people like only coffee, 40 like only tea, 15 like both tea and coffee and 10 like only milk.

Q67. What is the ratio between people who like both tea and coffee and who like only coffee?

A. 3/8
B. 2/3
C. 3/7
D. 3/2

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

Q68. What is the ratio of people who like milk and people who like tea?

A. 1/4
B. 2/11
C. 2/7
D. 1/2

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

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Q69. What is the percentage of people who like tea out of the total?

A. 50%
B. 55%
C. 40%
D. 35%

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

Q70. In order to avenge whom, Bhagat Singh and his associates killed the British officer John Saunders?

A. Death of Ramprasad Bismil
B. Villagers' death in Chauri Chaura incident
C. Death of Lala Lajpat Rai
D. Massacre at Jallianwala Bagh

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

Q71. Gopal's mother is the wife of Mohit's father's son. Mohit has no brother or sister. How are Gopal and Mohit related?

A. Father-Son
B. Uncle-Nephew
C. Son-Father
D. Grandson-Grandfather

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

Q72. The HCF and LCM of two numbers are 19 and 342 respectively, if dividing one number by 2 gives the quotient 19, find the second number.

A. 133
B. 171
C. 198
D. 114

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

Q73. If J means 'x', K means '+', L means '÷' and M means '-', then give the value of 1K9L7J7L3M5.

A. 1
B. -1
C. 3
D. -5

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

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Q74. Which Indian state has the lowest population density according to the latest census?

A. Sikkim
B. Arunachal Pradesh
C. Mizoram
D. Nagaland

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

Q75. Which of the following is a study of spiders?

A. Arachnology
B. Anthropology
C. Apiology
D. Cynology

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

Q76. How many decimal of a kilometer is one millimeter?

A. 0.000001
B. 0.00001
C. 0.0001
D. 0.001

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

Q77. Dadasaheb Phalke Award is associated with which of the following fields?

A. Environment
B. Cinema
C. Dance
D. Medicine

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

Q78. If Sin D = 3/5, then $(\sin D + \cos D)^2$ =?

A. 1
B. 24/25
C. 49/25
D. 12/25

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

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Q79. If 4515 ÷ 17.5 = 258, then 45.15 ÷ 1.75 =?

A. 2.58

B. 0.258

C. 25.8

D. 258

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

Q80. Find the similarity in the following:

Dog, Painting, Book, Candle

A. There is no similarity among them.

B. These are all countable nouns.

C. They are all inanimate.

D. These are all animate.

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

Q81. Which social media giant launched the 'Make in India' emoji in November 2015 to develop India as a global manufacturing hub?

A. Facebook

B. Twitter

C. Google

D. Snapchat

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

Q82. When is Hindi Diwas celebrated every year?

A. 5 September

B. 2 October

C. 5 June

D. 14 September

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

Q83. In a certain code language 'BREADTH' is written as 'CQFZESI', then in that code language how will 'CONTAIN' be written?

A. DNOSBHO

B. DNSOBOH

C. DSNBOHO

D. DNOSHBO

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

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Q84. Find the factors of ($x^2 + x - 20$).

A. (x + 5) (x - 4)
B. (x + 4) (x - 5)
C. (x - 2) (x + 10)
D. (x - 2) (x + 5)

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

Q85. Kanha National Park is in which state?

A. Uttar Pradesh
B. Madhya Pradesh
C. Rajasthan
D. Uttarakhand

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

Q86. Find the difference between the simple interest and the compound interest at an annual rate of 20% on the principal of Rs. 4000 for 2 years.

A. 160
B. 120
C. 90
D. 110

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

Q87. Which doubles pair won the US Open women's doubles title in 2015?

A. Y. Shvedova and C. Dellacqua
B. M. Hingis and S. Mirza
C. G. Muguruza and C. S. Navarro
D. Hao-Ching Chan and Yung-Jan Chan

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

Q88. If 60% of a number is equal to two-thirds of the other number, find the ratio of the numbers.

A. 10 : 9
B. 15 : 7
C. 10 : 14
D. 9 : 11

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

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Q89. Rajesh bought a wardrobe for Rs 1,200 and sold it for Rs 900. What is loss percentage?

A. 30%
B. 75%
C. 25%
D. 40%

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

Q90. Find the mode and median of 3, 4, 5, 5, 3, 6, 7, 3, 5, 5, 6.

A. 5 and 5
B. 3 and 5
C. 5 and 4
D. 3 and 4

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

Q91. What is the reason for the colour of soil being red in some parts of India?

A. Presence of magnesium
B. Presence of phosphate
C. Presence of ferric oxide
D. Presence of manure soil

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

Q92. Which of the following is the largest size of computer memory?

A. Petabyte
B. Yottabyte
C. Terabyte
D. Gigabyte

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

Q93. 25 paise, 10 paise and 5 paise coins are in the ratio of 1 : 2 : 3 in a bag. If their total value is Rs. 180, then how many coins of 10 paise will be there?

A. 300
B. 400
C. 600
D. 900

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

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Q94. If the length and breadth of a rectangle are changed by +15% and -10% respectively, then what is the percentage change in the area of the rectangle?

A. 2.5%
B. 3.0%
C. 3.5%
D. 4.5%

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

Q95. Who is the captain of the current Indian women's hockey team?

A. Rani Rampal
B. Ritu Rani
C. Suraj Lata Devi
D. Susheela Chanu

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

Q96. Ajay Jayaram represents India in which of the following sports?

A. Shooting
B. Weightlifting
C. Table tennis
D. Badminton

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

Q97. Which of the following is a vector quantity?

A. Time
B. Temperature
C. Distance
D. Velocity

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

Q98. What is the Milky Way?

A. Constellation
B. Planetary system
C. Galaxy
D. Shining star

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

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Q99. There is a statement followed by two conclusions. Decide which conclusion logically follows from the given statement (s).

Statement: A garden has mango, teak, neem, orange, coconut and many trees. The mango tree is 7 meters tall, the orange tree is half of its height and the coconut tree is three times the height of the mango tree.

Conclusion:

I. The average height of the three trees is less than 10 meters.

II. The tallest tree in the garden is the coconut tree.

Choose the correct option from the following.

A. Only (I) follows.

B. Only (II) follows.

C. (I) and (II) both follow.

D. Neither (I) nor (II) follows.

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

Q100. What number will come in place of question mark in this series?

100, 115, ?, 150, 170, 185

A. 135

B. 130

C. 140

D. 145

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

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) C

Given:

x = 7, y = 4, z = 9

Calculation:

I. x + y + z = 20

LHS,

x + y + z = 7 + 4 + 9

=> x + y + z = 20

LHS = RHS

II. x – y + z = 13

LHS,

x – y + z = 7 – 4 + 9

=> x – y + z = 12

LHS ≠ RHS

III. x + y – z = 3

LHS,

x + y – z = 7 + 4 – 9

=> x + y – z = 2

LHS ≠ RHS

IV. -x + y – z = -12

LHS,

-x + y – z = -7 + 4 – 9

=> -x + y – z = -12

LHS = RHS

Therefore I and IV are TRUE.

Q2. Answer: (d) D

Given:

Time = 2 years

Rate of interest = 5%

S.I. = Rs. 200

Formula used:

S.I. = P × R% × T

Calculation:

Let the Principal be P.

S.I. = P × R% × T

=> 200 = P × 5/100 × 2

=> P = Rs. 2000

Therefore The amount is Rs. 2000.

Q3. Answer: (b) Ada Lovelace

The correct answer is Ada Lovelace.

• Ada Lovelace is considered the world's first programmer.

Key Points

• Charles Babbage created a computer known as the analytical engine which was designed to tackle complex mathematical problems and Ada Lovelace became the first programmer for the computer.

• Her method is recognized as the world's first computer program.

Additional Information

• Alan Turing was a mathematician and logician, who made major contributions to mathematics, cryptanalysis, logic, and mathematical biology.

• Tim Berners - Lee is the inventor of the internet.

• Steve Wozniak is the co-founder of apple with Steve Jobs.

Q4. Answer: (a) A

The correct answer is Italy.

• Italy has won the maximum number of Oscar awards to date in the category of foreign films.

Key Points

• Italy has won a total of 11 Oscar awards in the category of foreign films.

• It is followed by France and Spain with a total of 9 and 4 respectively

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Additional Information

• OSCAR AWARD:

• Oscar Award was instituted in 1929 and is conferred annually by the Academy of Motion Pictures in the United States.

• The awards ceremony was first televised in 1953 and is now seen live in more than 200 countries.

• Mahboob Khan's Mother India was the first Indian film to be nominated in the best foreign film category in 1958.

• The first Indian to share the Oscar was Bhanu Athaiya for the film 'Gandhi'.

• Satyajeet Ray was the first Indian who was awarded Oscar for lifetime achievement in cinema in 1992.

• Emil Jannings was the first actor to win the Oscar Awards.

Q5. Answer: (c) C

Given:

CP of 30 items = SP of 40 items

Formula used:

Loss% = (CP – SP)/CP × 100

Calculation:

CP of 30 items = SP of 40 items

=> 30 × CP = 40 × SP

=> CP/SP = 40/30

=> SP/CP = 3/4

=> 1 – SP/CP = 1 – 3/4 [Subtract in 1 both sides]

=> (CP – SP)/CP = (4 – 3)/4

=> (CP – SP)/CP × 100 = 1/4 × 100 [Multiply 100 both sides]

=> Loss% = 25%

Therefore The loss% in sale is 25%.

Q6. Answer: (b) C

The correct answer is Newton per square meter.

• Newton per square meter is the SI unit of pressure.

Key Points

• Pressure:

• The pressure is defined as the force acting normally on a unit area on the surface.

• SI unit of pressure is N/m^2 also called Pascal (Pa).

• The pressure is a scalar quantity.

Pressure = Force/Area

• Atmospheric pressure of 1 atm = 1.01 × 10^(-5) N/m^2 = 760 torr

Additional Information

• Atmospheric Pressure:

• Atmospheric pressure is that pressure that is exerted by a mercury column of 76 cm length at 0°C at 45° latitude at sea-level.

• Atmospheric pressure decreases with altitude.

• This is why:

• It is difficult to cook on the mountain.

• The fountain pen of a passenger leak in an aeroplane at a height.

• Atmospheric pressure is measured by a barometer.

• Sudden fall in barometric reading is the indication of a storm.

• Slow fall in barometric reading is the indication of rain.

• A slow rise in barometric reading is the indication of clear weather.

Q7. Answer: (c) Cartography

The correct answer is Cartography.

• Cartography is the study of a map.

Key Points

• Cartography or mapmaking is the study and practice of making maps.

• It involves the application of both scientific and artistic elements, combining graphical and specialized knowledge of compilation

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and design principles with available techniques for product generation.

Additional Information.

• Calligraphy is an art related to handwriting.

• Geography is the study of places and the relationships between people and their respective environments..

• Geology is the study of the earth's physical structure and substances, the history of rocks, the processes that act on them.

Q8. Answer: (d) Uttar Pradesh

The correct answer is Uttar Pradesh.

• Uttar Pradesh has decided to implement Bharat Net service that will connect all gram panchayats through the optical fibre.

Key Points

• Uttar Pradesh is implementing Bharat Net service project through both BSNL and PPP Model.

• BharatNet programme was earlier known as National Optical Fiber Network.

• It was launched in the year 2011.

• The project is an integral part of the government’s Digital India initiative- the flagship programme.

Q9. Answer: (a) A

Given:

Total distance = 44km

Number of rotation = 5000

Concept used:

Total distance = Number of rotation × Circumference of wheels

Circumference of circle = 2πr

Calculation:

Total distance = Number of rotation × Circumference of wheels

=> 44 × 100000 cm = 5000 × 2πr

=> 44 × 100000 cm = 5000 × 2 × 22/7 × r

=> r = (44 × 100000 × 7)/(5000 × 2 × 22)

=> r = 140 cm

Therefore The radius of wheels is 140 cm.

Q10. Answer: (c) A

Given:

500, 875, 1575, 1915, 2625, 2850, 3325, 4335

Calculation:

500 = 175 × 2 + 150

500 is not divisible by 175

875 = 175 × 5

875 is divisible by 175

1575 = 175 × 9

1575 is divisible by 175

1915 = 175 × 10 + 165

1915 is not divisible by 175

2625 = 175 × 15

2625 is divisible by 175

2850 = 175 × 16 + 50

2850 is not divisible by 175

3325 = 175 × 19

3325 is divisible by 175

4335 = 175 × 24 + 135

4335 is not divisible by 175

Therefore There are 4 numbers i.e., 875, 1575, 2625, and 3325 is divisible by 175.

175 = 5 × 5 × 7

Thus, Among the given numbers which will be divisible by 7, those numbers can be divisible by 175

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Now, 875, 1575, 2625 and 3325 are divisible by 7

=> These numbers can be divisible by 175

Now, 175 = 7 × 25

=> Among these four numbers which are divisible by 25 must be divisible by 175

Therefore 875, 1575, 2625, 3325 are divisible by 175.

Important Points

Those numbers which are divisible by 25, their last two digits must be 25, 50, 75 and 00.

Q11. Answer: (c) B

Preparing the family tree using the following symbols,

Given,

'D' is the son of 'F'. 'E' is the sister of 'F', and her son is 'A' and daughter is 'X'.

Therefore

Here we see D is the Nephew of B.

Hence, the correct answer is B.

Q12. Answer: (b) B

The correct answer is the Remote Location Waiting List.

Key Points

• The Remote Location Waiting List (RLWL) means a ticket is issued for intermediate stations (between the originating and terminating stations) because usually, these are the most important cities or towns on that particular route.

• RLWL confirmation chances are usually very low. These tickets are confirmed only when someone from the remote location station vacates berth through cancellation.

• Remote location stations prepare their own chart 2-3 hours before the actual departure of the train.

Q13. Answer: (c) Gyalwang Drukpa

The correct answer is Gyalwang Drukpa.

• In 2015, Gyalwang Drukpa was awarded by the European Atomic Research Organization (CERN) for contributions to science and spirituality.

Key Points

• Gyalwang Drukpa is a Buddhist leader from Ladakh.

• He received the award for his contribution to science and spirituality.

• He undertook 800km long padayatra from Varanasi to Lumbini to highlight ecological balance and promote cleanliness in accordance with Prime Minister Narendra Modi's Swachh Bharat Abhiyaan and is acknowledged for his generosity and initiatives to promote awareness on issues related to environmental preservation, education and gender equality.

Additional Information

• Dalai Lama is a title and not a name. It is given by the Tibetan people to the leading spiritual leader of the Gelug or "Yellow Hat" school of Tibetan Buddhism.

• The name of the current Dalai Lama is Lhamo Thondup.

• Matthieu Richard is a monk residing in Nepal.

• Sogyal Rinpoche was a Dzogchen lama of the Nyingma tradition.

Q14. Answer: (b) A

Given:

tan(210°)

Concept used:

tan(180° + θ) = tanθ, tan is positive in 3rd quadrant.

Calculation:

tan(210°) = tan(180° + 30°)

=> tan(210°) = tan30°

=> tan(210°) = 1/√3

Therefore The value of tan(210°) is 1/√3.

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Q15. Answer: (b) C

Given:

M1 = 15, D1 = 330 days

M2 = 15 + 15 = 30

Concept used:

Total work = Number of men × Total number of days

Calculation:

Let x more days to complete the remaining work after 220 days.

Total work = Number of men × Total number of days

Total work = M1 × D1

Total work = 15 × 330

Total work = 4950

Work completed after 220 days = 15 × 220

Required work = 3300

Remaining work = Total work – Work completed after 220 days

=> Remaining work = 4950 – 3300

=> Remaining work = 1650

Remaining work = M2 × x

=> 1650 = 30 × x

=> x = 55

Therefore 55 more days the work will be completed.

Q16. Answer: (a) B

Given,

The stone is called blue,

blue is called water,

water is called a tree,

the tree is called a bag,

the bag is called rainbow and

rainbow is called the sky.

We know that we carry books in the bag, here the bag is called rainbow.

Hence, the correct answer is B.

Q17. Answer: (c) C

The correct answer is Srinagar.

• Indira Gandhi Memorial Tulip Garden is in Srinagar.

Key Points

• Tulip garden is one of the largest gardens in Asia.

• The garden is situated on the foothills of the Zabarwan mountain range at an altitude of 5600 ft.

• Flowers like the Daffodils, Hyacinths, Roses, Ranunculi, Muscaria, Iris, etc are grown here other than tulips.

• The Tulip Festival is held in Srinagar at the beginning of spring between March and May.

Q18. Answer: (a) C

Given:

11/17, 41/63, 3/7, 21/29

Concept used:

If we make the denominator of all fractions equals then the greater numerator will greater fraction and vice versa.

Calculation:

For the equal denominator,

LCM of denominators = 31059

11/17 = (11 × 1827)/(17 × 1827) = 20097/31059

41/63 = (41 × 493)/63 × 493) = 20213/31059

3/7 = (3 × 4437)/(7 × 4437) = 13311/31059

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21/29 = (21 × 1071)/(29 × 1071) = 22491/31059

clearly we can see that,

3/7 < 11/17 < 41/63 < 21/29

Therefore 3/7 < 11/17 < 41/63 < 21/29.

Q19. Answer: (a) Mercury

The correct answer is Mercury.

Key Points

• Mercury constitutes a mercury mixture when it is mixed with metal.

• It alloys with copper, tin, and zinc to form amalgams or liquid alloys.

• An amalgam with silver is used as a filling in dentistry.

• Mercury does not wet glass or cling to it, and this property, coupled with its rapid and uniform volume expansion throughout its liquid range, makes it useful in thermometers

Q20. Answer: (a) Amaravati

The correct answer is Amaravati.

• Amaravati is the capital of the state of Andhra Pradesh.

Key Points

• From 1956 to 2014 Hyderabad was the capital of Andhra Pradesh state.

• Hyderabad is the capital of Telangana.

• Visakhapatnam is the executive capital.

• Kurnool is the judicial capital.

Additional Information

• Muhammad Quli Qutab Shah was the greatest of all. He founded the city of Hyderabad.

• He built the famous Charminar. The kingdom was annexed by Aurangzeb (1687 AD).

• By Operation Polo in September 1948, Hyderabad was added to the Union of India.

Image:

Q21. Answer: (d) D

Given:

The observations are 10, 9, 8, 7, 8, and 6

Total number of observations = 6

Formula used:

Mean = Sum of all observations/Total number of observations

Calculation:

Mean = (10 + 9 + 8 + 7 + 8 + 6)/6

=> Mean = 48/6 = 8

Therefore Mean is 8

Q22. Answer: (a) B

Given:

The ratio of length, width and height = 3 : 2 : 1

Volume = 3072 cubic meters

Formula used:

The volume of cuboid = length × width × height

Calculation:

Let the length, width, and height be 3x, 2x, and x meters.

The volume of room = length × width × height

=> 3072 = 3x × 2x × x

=> $6x^3 = 3072$

=> $x^3 = 512$

=> x = 8

Width = 2x

=> Width = 2 × 8

=> Width = 16 m

Therefore The width of room is 16 meter.

Q23. Answer: (d) D

The correct answer is Monitor.

• The monitor is not an input device.

Key Points

• Monitors are hardware devices used to display outputs from the CPU.

• Types of monitors:

• CRT (cathode ray tube) monitors.

• LCD (liquid crystal display) monitors.

• LED (light-emitting diodes) monitors.

Additional Information

• A keyboard is an input device composed of buttons used to create letters, numbers, and symbols, and perform additional functions.

• A mouse is a handheld hardware input device that controls a cursor in a GUI (graphical user interface) and can move and select the text, icons, files, and folders on your computer.

• A scanner is a device that captures images from photographic prints, posters, magazine pages, and similar sources for computer editing and display.

Q24. Answer: (c) C

Given,

Pointing to a girl, Sunil said, "Her mother's brother is the only son of my mother's father and the brother has only one sister".

The meaning of the above statement is girl's mother's brother is the only son of Sunil's mother's father and girl's mother's brother has only one sister it means the girl is the sister of Sunil and girl's mother is also the mother of Sunil.

Preparing the family tree using the following symbols,

The possible family tree is:

Therefore

Here we see the girl's mother is also the mother of Sunil.

Hence, the correct answer is C.

Q25. Answer: (d) D

Given,

Five different boxes of blue, green, black, red and white are placed in an irregular order from left to right such that -

1. The black box is not on the end edges.

2. The white box is second from the right end.

3. There are two boxes between the red and black boxes and one box between the blue and red boxes.

Here we see the Green box is first from the left.

Hence, the correct answer is D.

Q26. Answer: (c) A

Given,

Five different boxes of blue, green, black, red and white are placed in an irregular order from left to right such that -

1. The black box is not on the end edges.

2. The white box is second from the right end.

3. There are two boxes between the red and black boxes and one box between the blue and red boxes.

Given statements:

A. The black box is second from the left → True

B. The white box is second from the left → False

C. The green box is third from the left → False

D. The white box is third from the right → False

Here we see statement A is true that is the black box is second from the left.

Hence, the correct answer is A.

Q27. Answer: (d) B

Given,

Five different boxes of blue, green, black, red and white are placed in an irregular order from left to right such that -

1. The black box is not on the end edges.

2. The white box is second from the right end.

3. There are two boxes between the red and black boxes and one box between the blue and red boxes.

Here we see the Blue box is in the middle of the row.

Hence, the correct answer is B.

Q28. Answer: (d) None of the above

The Correct Answer is None of the above.

• The Nobel Prize in Literature 2005 was awarded to Harold Pinter.

Key Points

• The Nobel Prize in Literature is a Swedish literature prize that is awarded annually, since 1901.

• It is one of the five Nobel Prizes established by the will of Alfred Nobel in 1895.

• Nobel Prizes are awarded in the fields of Physics, Chemistry, Physiology or Medicine, Literature, and Peace.

Additional Information

• Alfred Nobel was a Swedish chemist, engineer, and industrialist most famously known for the invention of dynamite.

• Malala Yousuafzai became the Youngest person to receive a Nobel Prize at the age of 17, Nobel Peace Prize (2014).

• John B. Goodenough; at the age of 97, received Nobel Prize in Chemistry (2019) is the Oldest person to receive a Nobel Prize.

• Rabindranath Tagore was the first Indian to receive a Nobel Prize.

• He was awarded the Nobel Prize for Literature in recognition of his work Geetanjali, a collection of poems, in 1913.

Q29. Answer: (a) A

The correct answer is Amarkantak.

• Amarkantak is the point of origin of the river Narmada.

Key Points

• Narmada River System:

• The Narmada is the largest west flowing river of Peninsular India.

• It emerges from the Amarkantak Plateau.

• Amarkantak range of mountains is located in Madhya Pradesh.

• The river traverses Madhya Pradesh, Maharashtra, and Gujarat and meets the Gulf of Cambay.

• It is the largest river without delta.

• The Narmada river flows through a rift valley that divides the region into two parts— the central highland in the north and the Deccan plateau in the south.

Additional Information

• Western Ghats:

• The Western Ghats are locally known by different names such as Sahyadri in Maharashtra, Nilgiri hills in Karnataka and Tamil Nadu and Annamalai hills, Cardamom hills in Kerala.

• The Eastern and the Western Ghats meet each other at the Nilgiri hills.

• The Maikal Hills are located in Chhattisgarh.

Q30. Answer: (d) C

Given,

Question: What is the length of the rectangle?

Statement:

I. The perimeter of the rectangle is 80 meters.

II. The sum of the adjacent sides is 40 meters.

III. The width of the rectangle is 10 meters.

Here we have three statements and from any alone statement, we cannot find the length of the rectangle.

We have the width of the rectangle given in the third statement.

By using statement I and III,

We have, Perimeter of the rectangle = 80 meter

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Width of the rectangle = 10 meter
We know,
Perimeter of rectangle = 2 (Length + Width)
Therefore 80 = 2 (L + 10)
Therefore 40 = L + 10
Therefore L = 30 meter
Here we get length of the rectangle = 30 meter.
By using statement II and III,
The sum of the adjacent sides is 40 meters.
Width of the rectangle = 10 meter.
Let, the length of the rectangle be x.
We know,
Therefore The sum of the adjacent sides = Length + Width
Therefore 40 = x + 10
Therefore x = 30
Here we get length of the rectangle = 30 meter.
Therefore We get the length of the rectangle by using III and one from I or II statement.
Therefore III and one from I or II are sufficient.
Hence, the correct answer is C.

Q31. Answer: (d) C

The positions of the letters according to the English alphabet series:
Given,
'STARE' is written as '19201185'
The pattern followed here is,
Similarly,
Therefore The word 'MOULD' will be written as 131521124.
Hence, the correct answer is C.

Q32. Answer: (d) B

The correct answer is Rio de Janeiro.
• Rio de Janeiro will host the 2016 Summer Olympics.
Key Points
• Rio de Janeiro was the capital of Brazil between 1763 and 1960.
• Brasilia is the current capital of Brazil.
• Vinicius des Moraes was the Mascot of the 2016 Summer Olympics.
• The United States topped the medals tally with a total of 46 gold and was followed by Great Britain and China with 27 and 26 gold medals respectively.
Additional Information
• 2020 Olympics will be held in Tokyo, Japan.
• 2020 Tokyo Olympics will be held in the year 2021 due to coronavirus pandemic.
• India took part in Olympics for the first time in 1928 (in Amsterdam Olympics).

Q33. Answer: (b) B

Given:
M1 = 32 men
H1 = 6 hours
D1 = 10 days
H2 = 10 hours
D2 = 12 days
Here, M is the number of men, H is time in hours and D is the number of days.
Formula used:
M1 × D1 × H1 = M2 × D2 × H2

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Calculation:

32 × 10 × 6 = M2 × 12 × 10

=> M2 = 1920/120

=> M2 = 16

Therefore 16 Men are needed to finish the work in 12 days by working 10 hours per day.

Q34. Answer: (a) D

Given:

234A is divisible by 9

Concept used:

If a number is divisible by 9 then sum of its digits is also divisible by 9.

Calculation:

Sum of digits of 234A = 2 + 3 + 4 + A = 9 + A

For A = 0, sum will be 9, which is divisible by 9

But 0 is not a natural number

Next nearest number to 9 is 18, which is divisible by 9

9 + A = 18

=> A = 9

Therefore Smallest natural number is 9 for which 234A is divisible by 9.

Q35. Answer: (d) D

Given:

Markup% (M%) = 50%

Discount% (D%) = 20%

Formula used:

MP = CP × (100 + M%)/100

SP = MP × (100 – D%)/100

P% = (P/CP) × 100

Where, MP is Marked Price, SP is Selling Price, CP is Cost Price, M% is Markup%, P% is Profit%, and D% is Discount%

Calculation:

Let the CP be 100

MP = CP × (100 + M%)/100 = 100 × (100 + 50)/100

=> MP = 150

SP = MP × (100 – D%)/100 = 150 × (100 – 20)/100

=> SP = 120

P = SP – CP = 120 – 100 = 20

P% = (P/CP) × 100 = (20/100) × 100

Therefore Profit percentage is 20%

Q36. Answer: (a) A

Given,

Mango, Guava, Watermelon, Orange

The similarity between all of them is all are fruits.

A. These are all fruits → True

B. They are all red in colour → False

C. They have big seeds inside → False

D. It is available in all seasons in India → False

Hence, the correct answer is A.

Q37. Answer: (b) B

The correct answer is 25 Years.

Key Points

• In India, to become a Prime minister he/she has to become a Member of Parliament and should be atleast 25 Years of age.

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Additional Information

• According to Article 75,

• The Prime Minister shall be appointed by the President and the other Ministers shall be appointed by the President on the advice of the Prime Minister.

• The Minister shall hold office during the pleasure of the President.

• The Council of Ministers shall be collectively responsible to the House of the People.

• The speaker nominates a candidate, who is then elected to the prime minister by the members of parliament.

• Prime Minister is the real executive authority that is the de facto executive.

• President is the nominal executive authority that is the de jure executive.

• The Prime Minister may be a member of any of the two houses of the Parliament.

• The salary and allowances of the Prime Minister are determined by the parliament from time to time.

Q38. Answer: (c) C

The Correct Answer is Sound Navigation and Ranging.

• The full name of SONAR is Sound Navigation and Ranging.

Key Points

• Sonar is a technique that uses sound propagation usually underwater to navigate, communicate with, or detect objects on or under the surface of the water.

• Two types of technology share the name "sonar":

• Passive sonar is essentially listening for the sound made by vessels;

• Active sonar is emitting pulses of sounds and listening for echoes.

• Sonar may also be used for robot navigation and SODAR (an upward-looking in-air sonar) is used for atmospheric investigations

Additional Information

• A sonar device sends pulses of sound waves down through the water.

• When these pulses hit objects like fish, vegetation, or the bottom, they are reflected back to the surface.

• This information enables the device to judge the depth of the object it reflected off.

• The first recorded use of the technique was by Leonardo da Vinci in 1490 who used a tube inserted into the water to detect vessels by ear.

Q39. Answer: (d) D

The correct answer is Hydrogen.

• Hydrogen is not an inert gas.

Key Points

• It comes under the S-block elements.

• S-Block:

• It contains groups 1 and 2, i.e., hydrogen and alkali metals (Li, Na, K, Rb, Cs, Fr) and alkaline earth metals (Be, Mg, Ca, Sr, Ba, Ra).

• The general electronic configuration of these elements is ns^(0-2).

• These elements are soft metals, electropositive.

• Inert Gases:

• They belong to the 18th group of Periodic Table. For example, He, Ne, Ar, Kr, Xe, Rn.

• Except for Rn, all inert gases are present in the atmosphere.

• Argon is used in Arc. welding and electric bulbs.

• Helium is light and non-inflammable so, used in a balloon, weather indicator, etc.

• Neon is used in discharge tube glow light.

Additional Information

• The atom of hydrogen is the smallest and lightest.

• Hydrogen is the only atom in which neutrons are not present.

• Elements have the following order of abundance in the human body:

• Oxygen >carbon> hydrogen > nitrogen.

Q40. Answer: (b) C

Given statements:

A. Climate change has adversely affected humanity → False (Paragraph is not about climate change and its effect on humanity.)

B. Forests help maintain groundwater levels → False (There is not any mention of forests.)

C. Rainwater harvesting is the need of the hour → True (The paragraph is all about rainwater harvesting and how it is helping to solve urban water problems.)

D. There are not enough water reserves for urban areas → False (The paragraph is not about water reserves in the urban areas.)

Therefore Statement C supports the paragraph most.

Hence, the correct answer is C.

Q41. Answer: (b) B

The positions of the letters according to the English alphabet series:

Given,

A = 1, BE = 7 then CUT = ?

The pattern followed here is,

Similarly,

Hence, the correct answer is B.

Q42. Answer: (a) C

Formula used:

Average = Sum of all observations/Total number of observations

Calculation:

	Monday	Tuesday	Wednesday	Thursday	Friday	Total Distance Covered in 5 days	Average Distance Covered in 5 days
U	6	5	4.5	5.5	4	25	5
K	4	4.5	3	3.5	5	20	4
V	4	4	4.5	5	5.5	23	4.6
G	5	4.5	5	5.5	6	26	5.2

Therefore K covered the shortest average distance in 5 days.

Q43. Answer: (c) D

Calculation:

	Monday	Tuesday	Wednesday	Thursday	Friday	Total Distance Covered in 5 days
U	6	5	4.5	5.5	4	25
K	4	4.5	3	3.5	5	20
V	4	4	4.5	5	5.5	23
G	5	4.5	5	5.5	6	26

Therefore G covered the maximum distance from Monday to Friday.

Q44. Answer: (a) D

Calculation:

Distance traveled by U, K, V, G on

Monday

=> 6 + 4 + 4 + 5

=> 19

Tuesday

=> 5 + 4.5 + 4 + 4.5

=> 18

Thursday

=> 5.5 + 3.5 + 5 + 5.5

=> 19.5

Friday

=> 4 + 5 + 5.5 + 6

=> 20.5

Therefore The total maximum distance traveled by four friends is on Friday.

Q45. Answer: (c) C

Given,

Rajgir : Stone then Carpenter : ?

Rajgir is the person who makes homes and does work related to stone.

Similarly, Carpenter is the person who does work related to wood.

Hence, the correct answer is C.

Q46. Answer: (c) B

Given:

Sum of three numbers = 245

The ratio of first and second number = 2 : 3

The ratio of second and third number = 5 : 8

Calculation:

Let the three numbers be A, B, and C.

A : B = 2 : 3 ----(1)

B : C = 5 : 8 ----(2)

Multiply (1) with 5 and (2) with 3, to make the B ratio equal

=> A : B : C = 10 : 15 : 24

Let A = 10x, B = 15x, C = 24x

=> A + B + C = 245

=> 10x + 15x + 24x = 245

=> 49x = 245

=> x = (245/49)

=> x = 5

Second Number

=> 15 × 5

=> 75

Therefore The second number is 75.

Q47. Answer: (a) A

The correct answer is 1 December.

• 1 December is celebrated as the World AIDS Day.

Key Points

• World AIDS Day is observed every year on 1 December to raise awareness and knowledge about HIV and a call to move toward ending the HIV epidemic.

• It was first celebrated in 1988.

• The theme for World AIDS Day 2020: “Ending the HIV/AIDS Epidemic: Resilience and Impact”

• Luc Antoine Montagnier and Robert Charles Gallo discovered the Aids Virus.

Additional Information

• 8 march is celebrated as International Women's Day.

• The Theme for 2020 is ‘Generation Equality’.

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Q48. Answer: (b) B

The correct answer is Aryabhatta.

• Aryabhatta was the first unmanned satellite built by ISRO.

Key Points

• Aryabhatta was the first unmanned Earth satellite built by India and was launched from the Soviet Union by a Russian-made rocket in 1975.

• It was named after the Aryabhatta.

• Aryabhatta was the great mathematician who wrote Aryabhatiyam and Surya Siddhanta.

• He placed the value of the first-line number and the use of zero (‘0’).

Additional Information

• Rohini-1 was the first satellite launched by India.

• Bhaskara-I was India's first low orbit Earth Observation Satellite.

• It was the First experimental remote-sensing satellite and Carried TV and microwave cameras.

Q49. Answer: (a) C

The Correct Answer is Calcutta.

• Calcutta was the capital of India moved to Delhi.

Key Points

• The foundation of the new capital was laid On December 12, 1911, by King George V during the New Delhi durbar.

• It was 20 years later that King George V, during his visit to India, announced that New Delhi will replace Kolkata (then Calcutta) as the national capital.

• And finally, on February 13, 1931, Lord Irwin inaugurated the new capital - New Delhi.

• The British government believed that ruling India from Delhi was easier and more convenient than from Calcutta.

Additional Information

• Lord Hardinge then Viceroy of India planned and made King George V make a big announcement at the Delhi Darbar of 1911.

• Kolkata, formerly known as Calcutta is the capital of the Indian state of West Bengal and is located in eastern India on the east bank of the River Hooghly.

• The idea was to use the Bengal partition as a political tool to undermine the growing nationalism in Bengal and other parts of India.

• As per Curzon, after the partition, the two provinces would be -

Bengal (including modern West Bengal, Odisha, and Bihar) and Eastern Bengal and Assam

Q50. Answer: (c) D

Given,

It _____

1. to protect

2. is

3. the forests of the country

4. our duty

Here we see the correct sentence is,

It is our duty to protect the forests of the country.

Therefore The sequence is 2413.

Hence, the correct answer is D.

Q51. Answer: (a) C

Given:

$(40.7\times40.7\times40.7+1)/(40.7\times40.7-40.7+1)$

Concept used:

$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

Calculation:

$(40.7\times40.7\times40.7+1)/(40.7\times40.7-40.7+1)$

$\Rightarrow \{(40.7)^3 + (1)^3\} / \{(40.7)^2 - (40.7 \times 1) + (1)^2\}$

$\Rightarrow \{(40.7 + 1)(40.7^2 - 40.7 \times 1 + 1^2)\} / \{(40.7)2 - (40.7 \times 1) + (1)2\}$

=> 40.7 + 1

=> 41.7

Therefore The value is 41.7.

Q52. Answer: (a) C

The Correct Answer is Facebook.

• Facebook has launched it to promote its product.

Key Points

• Facebook India has teamed up with the Telangana government to help rural self-help groups to market their products online.

• The social media giant has launched a unique training program for the SHGs to promote their products.

• A self-help group (SHG) is a financial intermediary committee usually composed of 10 to 20 local women or men.

• SHG is nothing but a group of people who are on daily wages, they form a group and from that group, one person collects the money and gives the money to the person who is in need.

Additional Information

• The origin of the self-help group can be traced is from the Grameen Bank of Bangladesh, which was founded by Mohamed Yunus.

• SHG in India can be traced to the formation of the Self-Employed Women's Association (SEWA) in 1970.

• The SHG Bank Linkage Project launched by NABARD in 1992 has been the world's largest microfinance project.

• NABARD along with RBI permitted SHGs to have a savings account in banks from the year of 1993.

Q53. Answer: (a) B

Given,

3, 4, 9, 16, 27, 64, 81, ...

The pattern followed here is,

Therefore The next number will be 256.

Hence, the correct answer is B.

Q54. Answer: (a) D

Given:

Distance = 4 km

Formula used:

Distance = {(Speed1 × Speed2)/(Speed1 - Speed2)} × time difference

Calculation:

Let the speed be 'S'.

Distance

=> Distance = {[S × (S + 2)]/2} × (10/60)

=> 4 = {[S × (S + 2)]/2} × (10/60)

=> $S^2 + 2S = 48$

=> S = 6, -8

Speed can never be negative

=> S = 6 km/h

Therefore The speed is 6 km/h.

Q55. Answer: (c) 78%

The correct answer is 78%.

Key Points

• Nitrogen comprises 78 percent.

• Two gases which taken together, make up about 99 percent of the earth's atmosphere are - Nitrogen and Oxygen.

• The exosphere is the outermost layer of the Earth's atmosphere.

• It starts at an altitude of about 500 km and goes out to about 10,000 km.

• Oxygen comprises 21 percent together with both the gases 78+21=99 percent of the earth's atmosphere.

Additional Information

• The atmosphere of Earth is the layer of gases, commonly known as air.

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• Composition of gases in Air
• Nitrogen — 78 percent.
• Oxygen — 21 percent.
• Argon — 0.93 percent.
• Carbon dioxide — 0.04 percent.

Q56. Answer: (c) D

Given:
Total distance = 400 km
Speed in first 200 km = 50 km/h
Speed in next 200 km = 70 km/h
Formula used:
Average speed = (Total distance)/(total time taken)
Speed = Distance/Time
Calculation:
Time Taken for first 200 km
=> 200/50
=> 4 hr
Time Taken for next 200 km
=> 200/70
=> 20/7
Total time taken
=> 4 + (20/7)
=> 48/7 hr
Average speed
=> 400/(48/7)
=> 58.3 km/hr
Therefore The average speed is 58.3 km/hr.

Q57. Answer: (c) D

Given,
Question: Five people A, B, C, D and E are sitting facing each other in a circle. E is seated between whom?
Statement:
I. The person sitting to the left of B and to the right of A is the same.
II. D is to the right of B.
III. A sits between E and C.
Here we see all the statements together are insufficient to answer E is seated between whom.
Hence, the correct answer is D.

Q58. Answer: (d) C

The positions of the letters according to the English alphabet series:
Given,
KDD, MFF, OHH, ?, SLL
The pattern followed here is,
The second and third letter of the cluster is the same.
Therefore The missing word is QJJ.
Hence, the correct answer is C.

Q59. Answer: (b) A

The correct answer is Rakesh Sharma.
• Rakesh Sharma was the first Indian to travel in space.
Key Points
• Wing Commander Rakesh Sharma went into space in the year 1984.

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• He flew aboard Soyuz T-11 with the Soviet Interkosmos program.

Additional Information

• Kalpana Chawla was the first Indian woman to travel in space.

• Ravish Malhotra served as a backup for Rakesh Sharma on the Soyuz T-11.

• Sunita Williams went to space in the year 2006.

• Yuri Gagarin was the first person to go into space.

• Neil Armstrong was the first person to land on the Moon.

Q60. Answer: (a) C

Given,

Up : Down

Here we see Up and down are the antonyms.

Therefore From the given alternatives Good : Bad are the antonyms.

Hence, the correct answer is C.

Q61. Answer: (c) D

The Correct Answer is Right to Protect Country.

• The right to protect the country is not a Fundamental Right.

Key Points

• The Fundamental Rights have been described in Articles 12-35, Part III of the Indian Constitution.

• The Constitution itself classifies the Fundamental Rights under seven groups as follows:

• Right to equality.

• Right to particular freedoms.

• Right against exploitation.

• Right to freedom of religion.

• Cultural and educational rights.

• Right to constitutional remedies.

• Some of the fundamental rights are granted only to citizens-(i) Protection from discrimination on grounds only of religion, race, caste. sex or place of birth (Art. 15); (ii) Equality of opportunity in matters of public employment (Art. 16]; (iii) Freedoms of speech, assembly, association, movement, residence, and profession [Art. 19]; (iv) Cultural and educational rights of minorities [Art. 29 and 30]

Additional Information

• The Right to Property (Article 31) was deleted from the list of Fundamental Act,1978.

• By the 44th Amendment Act, 1978, it is made a normal constitutional right under Act 300A in Part XII of the Constitution.

Q62. Answer: (c) B

The correct answer is Goitre.

• Goitre is caused due to iodine deficiency.

Key Points

• Lack of iodine causes an abnormal enlargement of the thyroid gland which is called a goitre.

• Thyroid Gland:

• The hormones secreted by it are Thyroxine and Triiodothyronine.

• Iodine is secreted in more quantity.

• The thyroid is a butterfly-shaped gland located at the base of the neck just below your Adam's apple.

Additional Information

• Night blindness is caused due to the deficiency of vitamin A.

• Scurvy is caused due to the deficiency of vitamin C.

• Rickets is caused due to the deficiency of vitamin D.

Q63. Answer: (b) C

Given:

HCF = 17

LCM = 170

Sum of two numbers = 119

Concept used:

Product of two numbers = LCM × HCF

Calculation:

Let the two numbers be 'a' and 'b'.

=> a + b = 119

=> a = 119 - b

Product of two numbers = LCM × HCF

=> a × b = LCM × HCF

=> a × (119 - b) = 17 × 170

=> 119a - a^2 = 2890

=> a^2 - 119a + 2890 = 0

=> a = 34, 85

When a = 34, then b = 85

When a = 85, then b = 34

The possible value of a and b is 85 and 34.

Sum of inverse of a and b

=> (1/85) + (1/34)

=> 7/170

Therefore The sum of inverse is 7/170.

Q64. Answer: (d) B

The Correct Answer is Pankaj Advani.

• Pankaj Advani won 2015 IBSF World Snooker Championship.

Key Points

• The 2015 IBSF World Snooker Championship was an amateur snooker tournament that took place in November 2015 in Hurghada, Egypt.

• It was the 41st edition of the IBSF World Snooker Championship.

• The men's tournament was won by Pankaj Advani.

• The women's tournament was won by Wendy Jans.

• Pankaj Advani is the only cueist to have won the Asian and World Championships in all formats of Billiards and Snooker.

• The Government of India has bestowed several awards upon Advani: the Arjuna Award in 2004, Rajiv Gandhi Khel Ratna in 2006, Padma Shri in 2009, and Padma Bhushan in 2018.

Additional Information

• IBSF stands for International Billiards & Snooker Federation.

• The International Billiards & Snooker Federation is an organization that governs non-professional snooker and English billiards around the world.

• The organization is headquartered in Dubai, United Arab Emirates.

• The World Billiards and Snooker Council (WB&SC) was established in 1971.

• In 1973, the WB&SC renamed itself as the International Billiards and Snooker Federation (IBSF).

Q65. Answer: (c) C

Given:

We have to find a range of 10, 21, 5, 1, 3, 17, 19, 2.

Concept used:

Arrange all numbers in ascending order

Range = highest value - minimum value

Calculation:

Arrange numbers in ascending order

=> 1, 2, 3, 5, 10, 17, 19, 21

Range = highest value - minimum value

=> 21 - 1

=> 20

Therefore The range of numbers is 20.

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Q66. Answer: (c) B

Given,

He _____

J: a popular tennis player

K: but

L: is also

M: is ranked No. 1 in badminton

Here we see the meaningful sentence is, 'He is ranked No. 1 in Badminton but is also a popular Tennis player.

Therefore The correct order should be MKLJ.

Hence, the correct answer is B.

Q67. Answer: (a) C

Given:

Total people = 100

People like only Coffee = 35

People like only Tea = 40

People like both Tea and coffee = 15

People like only Milk = 10

Calculation:

The ratio between people who like both tea and coffee and those who like only coffee = 15/35 = 3/7

Therefore The ratio is 3/7.

People like only Coffee = g = 35

People like only Tea = c = 40

People like both Tea and coffee = f = 15

People like only Milk = a = 10

Calculation:

The ratio between people who like both tea and coffee and those who like only coffee = f/g = 15/35 = 3/7

Therefore The ratio is 3/7

Q68. Answer: (d) B

Given:

Total people = 100

People like Coffee = 35

People like Tea = 40

People like Tea and coffee = 15

People like Milk = 10

Calculation:

People like tea

=> 40 + 15

=> 55

The ratio of people who like milk and people who like tea

=> 10/55

=> 2/11

Therefore The ratio of people who like milk and people who like tea is 2/11.

Q69. Answer: (b) B

Given:

Total people = 100

People like Coffee = 35

People like Tea = 40

People like Tea and coffee = 15

People like Milk = 10

Calculation:

People like tea

=> 40 + 15

=> 55

The percentage of people who like tea out of the total

=> (55/100) × 100

=> 55%

Therefore The percentage of people who like tea out of the total is 55%.

Q70. Answer: (b) C

The correct answer is Death of Lala Lajpat Rai.

• In order to avenge the death of Lala Lajpat Rai, Bhagat Singh and his associates killed the British officer John Saunders.

Key Points

• Lala Lajpat Rai:

• He founded the National School at Lahore. He presided over the

• AITUC in 1920 AD.

• He boycotted the Simon Commission and demonstrated against it at Lahore, during which he was brutally assaulted by the police and he subsequently succumbed to his injuries.

• He was the President of the special session of the Congress at Calcutta, 1920 AD.

• He opposed the withdrawal of NCM in 1922 AD.

• He founded Swaraj Party with Motilal Nehru and C.R. Das.

• He was the editor of Bande Matram, Punjabi, and The People.

• Bhagat Singh (1907 AD-1931 AD):

• He was a member of the Hindustan Socialist Republican Association.

• He started the 'Naujawan Bharat Sabha' in Punjab.

• He killed British official Saunders in 1928 and was involved in Lahore Conspiracy and bombed the Central Legislative Assembly.

• He was executed on 23rd March 1931.

Q71. Answer: (a) C

Given,

Gopal's mother is the wife of Mohit's father's son. Mohit has no brother or sister.

The family tree is as follow,

Here we see Mohit is the father of Gopal.

Hence, the correct answer is C.

Q72. Answer: (b) B

Given:

The HCF and LCM of two numbers are 19 and 342 respectively and if dividing one number by 2 gives the quotient 19

Concept Used:

For two numbers,

LCM × HCF = product of those two numbers

Calculation:

Given that, if dividing one number by 2 gives the quotient 19.

Here nothing is mention about the remainder, so, we have to assume that the remainder is 0

The number is 2 × 19 = 38

Accordingly,

19 × 342 = 38 × the other number

=> The other number = 171

Therefore The second number is 171.

Q73. Answer: (b) B

Given,

Code	Operatore

J	x
K	•
M	•
L	÷

Therefore Value of 1K9L7J7L3M5 is,

= 1 + 9 ÷ 7 x 7 ÷ 3 - 5

= 1 + (9/7) x (7/3) - 5

= 1 + 9 ÷ 3 - 5

= 4 - 5 = -1

Hence, the correct answer is B.

Q74. Answer: (d) B

The correct answer is Arunachal Pradesh.

• Arunachal Pradesh has the lowest population density according to the latest census.

Key Points

• Arunachal Pradesh has the lowest record of population density having just 17 per square kilometer.

• The National Capital Region area of Delhi has the highest population density with having a density of 11,297 per square kilometer.

• Population density is the total number of individuals present in per unit area.

Additional Information

• Census:

• In 1872 AD, the first Census was done in India.

• First synchronized census in India took place in 1881. Since 1901, it has been taking place every decade.

• Census 2011, was the 15th census and 7th after independence.

• The slogan of Census 2011 is “Our Census, Our Future”.

• India was the first country to adopt family planning in the world.

Q75. Answer: (b) A

The Correct Answer is Arachnology.

• Arachnology is the study of Spiders.

Key Points

• Arachnology is the scientific study of spiders and related animals such as scorpions, pseudoscorpions, and harvestmen, collectively called arachnids.

• Those who study spiders and other arachnids are arachnologists.

• The study of spiders alone (order Araneae) is known as araneology.

• Arachnology can be broken down into several specialties. These topics include:

• acarology – the study of ticks and mites

• araneology – the study of spiders

• scorpiology – the study of scorpions

Additional Information

• Anthropology is the scientific study of humanity, concerned with human behavior, human biology, and societies, in both the present and past, including past human species.

• Cynology is the study of matters related to canines or domestic dogs.

• Entomology is the study of insects and their relationship to humans, the environment, and other organisms.

• Herpetology is the branch of zoology concerned with the study of amphibians and reptiles.

Q76. Answer: (c) A

Given:

We have to find one millimetre equals to how many kilometres

Concept Used

1 km = 1000000 millimeter

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Calculation:

1000000 millimeter = 1 km

=> 1 millimetre = 1 over 1000000 km

=> 1 millimetre = 0.000001 km

Therefore 1 millimetre = 0.000001 kilometer.

Q77. Answer: (d) B

The correct answer is Cinema.

• Dadasaheb Phalke Award is associated with Cinema.

Key Points

• DADA SAHEB PHALKE AWARD:

• The Dada Saheb Phalke Award is India's highest award in cinema given annually by the Government of India for lifetime contribution to Indian Cinema.

• It was instituted in 1969.

• Devika Rani was the first winner of the Dadasaheb Phalke Award.

• Dhundiraj Govind Phalke is famously known as Dadasaheb Phalke.

• He is known as the Father of Indian cinema.

Additional Information

• SANGEET NATAK AKADEMI PURASKAR (AKADEMI AWARD):

• Awarded by the Sangeet Natak Akademi, India's National Academy of Music and Dance and Drama. It is the highest Indian recognition given to practicing dance, theatre other additional/folk/tribal/dance/music/ theatre and puppetry and contribution/ scholarship in performing arts.

Q78. Answer: (d) C

Given:

Sin D = 3/5, we have to find the value of (sin D + cos D)2

Concept Used:

Sinθ = Height/Hypotenuse

Cosθ = Base/Hypotenuse

In a Right angle triangle, Height² + Base² = Hypotenuse

Calculation:

Sin D = 3/5 = Height/Hypotenuse

=> Height = 3k and Hypotenuse = 5k [Where k is a constant]

We know,

Height2 + Base2 = Hypotenuse

=> $(3x)^2 + Base^2 = (5x)^2$

=> $Base^2 = 25x^2 - 9x^2$

=> $Base2 = 16x^2$

=> Base = 4x

Cos D = 4x/5x

=> Cos D = 4/5

(sin D + cos D)2

=> $(3/5 + 4/5)^2$

=> $(7/5)^2$

=> 49/25

Therefore The required value of $(\sin D + \cos D)^2$ is 49/25.

Q79. Answer: (b) C

Given:

4515 ÷ 17.5 = 258 We have to find the value of 45.15 ÷ 1.75

Concept Used:

Concept of fractional division.

a/b ÷ c/d = a/b × d/c

Calculation:

4515 ÷ 17.5 = 258

=> 4515 ÷ 175 over 10 = 258

=> 4515 × 10 over 175 = 258

=> 4515/10 × 100/175 = 258

=> 4515/100 × 100/175 = 258/10

=> 4515/100 ÷ 175/100 = 258/10

=> 45.15 ÷ 1.75 = 25.8

Therefore The required value of 45.15 ÷ 1.75 = 25.8.

Q80. Answer: (c) B

Given,

Dog, Painting, Book, Candle

A. There is no similarity among them. → False

B. These are all countable nouns. → True (All of the above are countable.)

C. They are all inanimate. → False (Inanimate means those which are not alive.)

D. These are all animate. → False (Animate means those which are alive or active.)

Hence, the correct answer is B.

Q81. Answer: (d) B

The correct answer is Twitter.

• Twitter launched the 'Make in India' emoji in November 2015 to develop India as a global manufacturing hub.

Key Points

• In the government campaign, an emoji of a black lion on an orange background which is a version of the national program's official logo will now appear next to the #MakeInIndia hashtag in any Tweet worldwide.

• Make in India:

• It was launched in 2014.

• It was launched by Prime Minister Narendra Modi.

• It is aimed at raising the contribution of the manufacturing sector to 25% of the GDP in the coming years.

• Twitter:

• Founded by Jack Dorsey, Evan Williams, Noah Glass, Biz Stone

• It was launched in July 2006.

• Its headquarters is in San Francisco, United States.

Additional Information

• Mark Zuckerberg, Eduardo Saverin, Andrew McCollum, Dustin Moskovitz, Chris Hughes are the founders of Facebook.

• Larry Page, Sergey Brin are the founders of Google.

• Evan Spiegel, Bobby Murphy, Reggie Brown are the founders of Snapchat.

Q82. Answer: (b) D

The correct answer is 14th September.

Key Points

• Hindi Diwas is a national day of India celebrated every year on 14 September because on 14 September 1949, Hindi became the official language of India.

• As such, on14th of September 1949, on the 50th birthday of Beohar Rajendra Simha, and the efforts resulted in the adoption of Hindi as an official language.

• Hindi written in Devanagari script was adopted as one of the official languages that comes Under Article 343 of the Indian Constitution.

• In all, there are 22 Scheduled languages of India.

Q83. Answer: (c) A

The positions of the letters according to the English alphabet series:

Given,

'BREADTH' is written as 'CQFZESI'

The pattern followed here is,

Similarly,

Therefore The word 'CONTAIN' will be written as DNOSBHO.

Hence, the correct answer is A.

Q84. Answer: (b) A

Given:

We have to find the factors of (x2 + x - 20)

Concept Used:

Concept of middle term factor

Calculation:

(x2 + x - 20)

=> x^2 + (5 - 4)x - 20

=> x^2 + 5x - 4x - 20

=> x(x + 5) - 4(x + 5)

=> (x + 5)(x - 4)

Therefore The required factors of (x2 + x - 20) is (x + 5)(x - 4).

Q85. Answer: (a) B

The correct answer is Madhya Pradesh.

• Kanha National Park is in Madhya Pradesh.

Key Points

• Kanha National Park:

• It is located in the Maikal range of Satpuras in Madhya Pradesh.

• Kanha National Park was declared as a reserve forest in 1879.

• It was called as a wildlife sanctuary in 1933.

• Later, it was upgraded to a national park in 1955.

• The Banjar river which is a tributary of Narmada flows from the Kanha National Park.

Additional Information

National Park/Sanctuaries	State
Bandhavgarh National Park, Panna National Park, Satpura National Park, Madhav National Park, Sanjay National Park, Pench National Park, Van Vihar National Park	Madhya Pradesh
Dudhwa National Park, Chandraprabha Sanctuary, Pilibhit Tiger Reserve,	Uttar Pradesh
Corbett National Park, Nanda Devi National Park, Valley of Flowers National Park	Uttarakhand

Q86. Answer: (c) A

Given:

Rate = 20%

Principal = Rs. 4000

Time = 2 years

Formula used:

For Compound Interest,

(i) $A = P\{1 + (R/100)\}^n$

(ii) A = P + CI

where,

P = Principal

CI = Compound interest

R = Rate

n = Time

For Simple Interest,

SI = PRT/100

where,

SI = Simple interest

T = Time

Calculations:

Calculating CI for 2 year,

$A = P\{1 + (R/100)\}n$

$\Rightarrow A = 4000\{1 + (20/100)\}^2$

$\Rightarrow A = 4000(6/5)^2$

$\Rightarrow A = 4000(36/25)$

$\Rightarrow A = Rs. 5760$

$A = P + CI$

$\Rightarrow 5760 = 4000 + CI$

$\Rightarrow CI = 5760 - 4000$

$\Rightarrow CI = Rs. 1760$

Calculating SI for 2 years,

$SI = PRT/100$

$\Rightarrow (4000 \times 20 \times 2)/100$

$\Rightarrow$ Rs. 1600

CI - SI = 1760 - 1600

$\Rightarrow$ Rs. 160

Therefore The difference between the simple interest and the compound interest is Rs. 160.

Shortcut Trick

Difference between CI and SI for 2 years $= P(R/100)^2$

$\Rightarrow 4000(20/100)^2$

$\Rightarrow 4000/25$

$\Rightarrow$ Rs. 160

Therefore The difference between the simple interest and the compound interest is Rs. 160.

Q87. Answer: (d) B

The correct answer is M. Hingis and S. Mirza.

• M. Hingis and S. Mirza won the US Open women's doubles title in 2015.

Key Points

• Martina Hingis and Sania Mirza defeated Casey Dellacqua Yaroslava Shvedova to win the US Open women's doubles title in 2015.

• US Open 2015 was the 135th edition of the US Open.

• The event was held in USTA Billie Jean King National Tennis Center, Newyork.

Additional Information

• Sania Mirza was the First Indian Woman to Win WTA Tennis Tournament.

• Davis Cup and Wightman Cup is related to Tennis.

Q88. Answer: (a) A

Given:

60% of a number is equal to two-thirds of the other number

Concept Used:

Concept of percentage. It is calculated on the basis of 100

For example, x% means x out of 100

Concept of ratio and proportion

Calculation:

Let, one number is x and the other number is y

60% of x is 60x/100

Two-thirds of the other number is 2y/3

Accordingly,

60x/100 = 2y/3

=> 3x/5 = 2y/3

=> 9x = 10y [Cross multiplying]

=> x/y = 10/9

=> x : y = 10 : 9

Therefore The ratio of the numbers is 10 : 9.

Q89. Answer: (c) C

Given:

Cost price = Rs. 1,200

Selling price = Rs. 900

Formula used:

Loss percentage = {(CP - SP)/CP} × 100

where,

CP = Cost price

SP = Selling price

Calculations:

Loss percentage = {(1,200 - 900)/1,200} × 100

=> (300/1,200) × 100

=> 25%

Therefore Loss percentage is 25%

Q90. Answer: (d) A

Given:

Data = 3, 4, 5, 5, 3, 6, 7, 3, 5, 5, 6

Concept used:

(i) The mode is the value that appears most often in a set of data values.

(ii) The median of a finite list of numbers is the "middle" number when those numbers are listed in order from smallest to greatest and the total number of elements is an odd number.

i.e. If there is 'n' element and 'n' is an odd number then median is the {(n + 1)/2}^(th) number.

Calculations:

Arranging the data in increasing order,

3, 3, 3, 4, 5, 5, 5, 5, 6, 6, 7

Most number repeated in the above data = 5

=> Mode = 5

Median = {(n + 1)/2}^(th) term

=> {(11 + 1)/2}th term

=> 6th term

=> 5

Therefore The value of mode and median is 5 and 5.

Additional Information

When number of observation (n) is even,

Median = (Value of (n/2)th observation + Value of (n/2 + 1)th observation)/2

Q91. Answer: (d) C

The correct answer is the Presence of ferric oxide.

• The presence of ferric oxide is the reason for the color of soil being red in some parts of India.

Key Points

• Red Soil:

• Formed by weathering of a crystalline and metamorphic mixture of clay and sand.

• They are red in color because of their high Iron-oxide (FeO) content.

• They are deficient in phosphoric acid, organic matter, and nitrogenous material.

• Red soils cover the eastern part of the peninsular region comprising Chhotanagpur plateau, Odisha, eastern Chhattisgarh, Telangana, the Nilgiris, and Tamil Nadu plateau.

• Crops Grown: Wheat, Rice, Millets, Pulses.

• Laterite Soil:

• The Laterite soils are formed due to the weathering of lateritic rock in high temperatures and heavy rainfall with an alternate dry and wet period.

• They are found along the edge of the plateau in the east covering small parts of Tamil Nadu, Orissa, and a small part of Chhotanagpur in the north and Meghalaya in the north-east.

• Laterite soils are red in color with a high content of iron-oxides; poor in Nitrogen and Lime.

Q92. Answer: (c) B

The correct answer is Yottabyte.

• Yottabyte is the largest size of computer memory.

Key Points

• A yottabyte is a septillion byte.

• Its capacity is equal to 2 to the 80th power bytes and in decimal, approximately 1,000 zettabytes, a trillion terabytes (TB), or a million trillion megabytes.

Additional Information

• 1 Gigabyte is equal to 1024 MB.

• 1 Terabyte is equal to 10^6 MB.

• 1 Petabyte is equal to 1000 terabytes.

Q93. Answer: (d) C

Given:

25 paise, 10 paise and 5 paise coins are in the ratio of 1 : 2 : 3 in a bag. The total value of money is Rs. 180

Concept Used:

Concept of ratio and proportion

Calculation:

The ratio of 25 paise, 10 paise and 5 paise is 1 : 2 : 3

Let, the number of coins are y, 2y and 3y respectively

Total number of money is Rs. 180 = 180 × 100

=> 18000 paise

Accordingly,

(25 × y) + (10 × 2y) + (5 × 3y) = 18000

=> 25y + 20y + 15y = 18000

=> 60y = 18000

=> y = 300

Number of 10 paise coins is 2 × 300 = 600

Therefore There will be 600 coins of 10 paise

Q94. Answer: (b) C

Given:

Change in length = 15%

Change in breadth = -10%

Formula used:

(i) Percentage change = {(New value - Old value)/Old value} × 100

(ii) Area of rectangle = Length × Breadth

Calculations:

Let the initial length and breadth be 100x and 100y respectively.

Initial area = 100x × 100y

=> 10,000xy

New length = 100x + 100x × (15/100)

=> 115x

New breadth = 100y - 100y × (90/100)

=> 90y

New area = 115x × 90y

=> 10,350xy

Percentage change = {(10,350xy - 10,000xy)/10,000xy} × 100

=> (350xy/10,000xy) × 100

=> 3.5%

Therefore The percentage change in the area of the rectangle is 3.5%.

Alternate Method

Formula used:

Overall percentage change = a + b + (ab/100)

where, a and b are percentage change.

Calculations:

Overall percentage change = 15 - 10 + {15 × (-10)/100}

=> 5 - 1.5

=> 3.5%

Therefore The percentage change in the area of the rectangle is 3.5%.

Q95. Answer: (a) A

The correct answer is Rani Rampal.

• Rani Rampal is the current captain of the Indian women's hockey team.

Key Points

• Rani Rampal was awarded the Padma Shri in the year 2020.

• She was awarded the 'World Games Athlete of the Year' award.

• Rani Rampal is from Haryana.

Additional Information

• Ritu Rani is a halfback player of the Indian women's hockey team.

• Suraj Lata Devi is the former captain of the India women's hockey team.

• Susheela Chanu is a former captain of the Indian women's hockey team.

Q96. Answer: (d) D

The Correct Answer is Badminton.

• Ajay Jayram represents India in Badminton.

Key Points

• Ajay Jayaram is an Indian badminton player from Mumbai sponsored by Apacs.

• Jayaram is a champion of the Czech International and Dutch Open tournament.

• He plays for the Mumbai Rockets in the Premier Badminton League.

• In 2009 he won the New Zealand Open, the Thailand Open in 2010, and the Czech Open in 2013.

• In 2014 he won the Dutch Open Grand Prix making him the first Indian to win a badminton Grand Prix under the new 11*5 scoring system.

Additional Information

• Premier Badminton League is a team badminton league held in India.

• Bengaluru Raptors won the last two editions in 2018-19 and 2020, becoming the only team to win the title twice.

Q97. Answer: (c) D

The Correct Answer is Velocity.

• Velocity is a vector quantity.

Key Points

• Physical quantities which have magnitude only and no direction are called scalar quantities.

• Example: Mass, Speed, Volume, etc.

• Vector Quantities:

• Physical quantities that have magnitude and direction both and which obey triangle law are called vector quantities.

• Example: Displacement, Velocity, etc.

• Distance is the length of the actual path covered by a moving object in a given time interval.

Additional Information

• The difference between the final and the initial position of an object is called displacement.

• It is a vector quantity.

• Its unit is meter.

• The velocity of a moving object is defined as the displacement of the object in the unit time interval.

• It is a vector quantity and its SI unit is meter/second.

• Acceleration of an object is defined as the rate of change of velocity of the object.

• It is a vector quantity and its SI unit is (m/s^2).

Q98. Answer: (d) C

The Correct Answer is Galaxy.

• Milkway is Galaxy

Key Points

• The universe comprises billions of galaxies.

• The galaxies are made up of millions of stars held together by the force of gravity and these stars account for most of the masses of the galaxy.

• Our own galaxy is called the Milky Way (or the Akashganga) and it contains about 300 billion stars and one of these is our sun.

• Planets and other objects go round the sun and make up the solar system with the sun at the center.

Additional Information

• Milky Way Galaxy formed 5 billion years after the Big Bang.

• The latest known galaxy is the Dwarf Galaxy.

• The origin of the universe is explained by the Big Bang Theory, formulated and proposed by the astronomer and cosmologist Georges Lemaitre.

• Andromeda is our nearest galaxy.

Q99. Answer: (b) D

Given,

Statement: A garden has mango, teak, neem, orange, coconut and many trees. The mango tree is 7 meters tall, the orange tree is half of its height and the coconut tree is three times the height of the mango tree.

Conclusion:

I. The average height of the three trees is less than 10 meters. → False (Here we don't know the height of all the trees and also the average height of which three trees we are calculating.)

II. The tallest tree in the garden is the coconut tree. → False (We don't know the height of all the trees in the garden.)

Therefore Neither (I) nor (II) conclusion follows.

Hence, the correct answer is D.

Q100. Answer: (a) A

Given,

100, 115, ?, 150, 170, 185

The pattern followed here is,

100 + 15 = 115

115 + 20 = 135

135 + 15 = 150

150 + 20 = 170

170 + 15 = 185

Therefore The number 135 will come in place of question mark in the series.

Hence, the correct answer is A.

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