RRB NTPC CBT-I Official Paper (Held On: 28 Jan 2021 Shift 1) (Previous Year Paper)

RRB NTPC • 2021 • 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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Q1. As of October 2020, which of the following authors of Indian origin has NOT won the Man Booker Prize for literature?

(a) Kiran Desai
(b) Jhumpa Lahiri
(c) Arundhati Roy
(d) Aravind Adiga

Q2. As of October 2020, who is the Director General of the World Trade Organization?

(a) Peter Sutherland
(b) Arthur Dunkel
(c) Roberto Azevedo
(d) Pascal Lamy

Q3. What is the chemical formula of common salt?

(a) NaOH
(b) KOH
(c) HCl
(d) NaCl

Q4. Which of the following does NOT grow under the soil?

(a) Turnip
(b) Radish
(c) Tomato
(d) Potato

Q5. Which of the following is NOT a Google product?

(a) Blogger
(b) Gmail
(c) YouTube
(d) iTunes

Q6. In a triangle ABC, if 2angle A = 3 angle B = 6angle C, then find the value of angle C.

(a) 30°
(b) 45°
(c) 90°
(d) 60°

Q7. How many 3-digit numbers leave remainder 1 when divided by 7?

(a) 130
(b) 125
(c) 128
(d) 126

Q8. Tap A can fill a tank in 6 h, whereas Tap B can fill it in 8 h. Tap C can empty the same tank in 4 h. If all the taps are opened together, how long will it take to fill the tank?

(a) 20 h
(b) 26 h
(c) 24 h
(d) 22 h

Q9. Find the greatest number, which when divides 76, 151 and 226 leaves same remainder.

(a) 70
(b) 75
(c) 78
(d) 76

Q10. If $x^2 = y + z$, $y^2 = z + x$ and $z^2 = x + y$, then find the value of $1/(x + 1) + 1/(y + 1) + 1/(z + 1)$.

(a) 2
(b) –1
(c) 1
(d) 4

Q11. If A + B means A is the husband of B, A/B means A is the sister of B and A* B means A is the son of B. Which of the following shows M is the daughter of N?

(a) M/P*N
(b) M*N/O
(c) M + O*N
(d) P*M + O/N

Q12. Simplify the following.

$5 \times 0.5 \times 0.05 \times 0.005 \times 500$

(a) 0.003125
(b) 3125
(c) 31.25
(d) 0.3125

Q13. 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:

I. Some beds are side-tables.

II. All side-tables are lamps.

Conclusions:

1. All beds are side-tables.
2. Some lamps are beds.
3. Some lamps are side-tables.
4. All side-tables are beds.

(a) Only conclusion 4 follows
(b) Only conclusion 1 follows
(c) Only conclusion 2 follows
(d) Both conclusions 2 and 3 follow.

Q14. The Aravalli Range does NOT pass through _____ state of India.

(a) Gujarat
(b) Haryana
(c) Rajasthan
(d) Maharashtra

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Q15. What is the total strength of elected members in the Lok Sabha?

(a) 542
(b) 520
(c) 524
(d) 543

Q16. What is the generic name given to members of the cat family?

(a) Canine
(b) Bovine
(c) Caprine
(d) Feline

Q17. Which strait lies between Russia and a state of the United States of America?

(a) Bering Strait
(b) Palk Strait
(c) Strait of Magellan
(d) Strait of Dover

Q18. The simple interest on a certain sum for 3 years at 8% per annum is Rs. 96 more than the simple interest on the same sum for 2 years at 9% per annum. Find the sum.

(a) Rs. 1,500
(b) Rs. 1,800
(c) Rs. 1,600
(d) Rs. 1,700

Q19. Which of the following is related to the reduction of global environmental problems?

(a) UNICEF
(b) UNCTAD
(c) UNCED
(d) UNESCO

Q20. A tree broke at a height of 8 m from its foot and the broken upper part touches the ground at a point of 6 m from its foot. Find the height of the tree.

(a) 15 m
(b) 24 m
(c) 16 m
(d) 18 m

Q21. If $(3\sqrt{5} - 5)/(3\sqrt{5} + 5) = a + b\sqrt{5}$, then find the value of b.

(a) 3/2
(b) $3\sqrt{5}/2$
(c) 7/2
(d) -3/2

Q22. From the given options, select the number that will come next in the following series.

5, 15, 45, 135, 405, ?

(a) 1215
(b) 1251
(c) 1125
(d) 5125

Q23. Which counsel represented India at The International Court of Justice at The Hague, against Pakistan's decision of awarding the death sentence to Kulbhushan Jadhav?

(a) Mukul Rohatgi
(b) Kapil Sibal

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(c) Harish Salve
(d) Aman Lekhi

Q24. A man travels 360 km in 4 h, partly by air and partly by train. If he had travelled all the way by air, he would have saved 4/5 of the time he travelled by train, and he would have arrived at his destination 2 h early. Find the distance he travelled by air.
(a) 290 km
(b) 280 km
(c) 270 km
(d) 260 km

Q25. In which continent is the archipelago Tierra del Fuego located?
(a) Africa
(b) North America
(c) South America
(d) Europe

Q26. A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question.
Question:
Should private schools be banned in India?
Arguments:
1. Yes, they are the reason for commercialisation of education.
2. No, because the rich people cannot send their child to government schools.
(a) Both arguments 1 and 2 are strong.
(b) Neither argument 1 nor 2 is strong.
(c) Only argument 2 is strong.
(d) Only argument 1 is strong.

Q27. Which of the following Union Territories has a legislative assembly?
(a) Chandigarh
(b) Dadra and Nagar Haveli
(c) Delhi
(d) Andaman and Nicobar

Q28. In a certain code language, EDUCATION is written as 92. How will KNOWLEDGE be written as in that language?
(a) 101
(b) 100
(c) 93
(d) 96

Q29. Which Indian airline got grounded in April 2019?
(a) Sahara Airlines
(b) IndiGo
(c) Jet Airways
(d) Kingfisher Airlines

Q30. Which of the following Social worker was awarded the Padma Bhushan in 2020?
(a) Aruna Roy
(b) Anna Hajare
(c) Anil Prakash Joshi
(d) Medha Patkar

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Q31. Four numbers have been given, out of which one is different from the other three in some manner. Select the number that is different from the rest.

(a) 743
(b) 716
(c) 729
(d) 741

Q32. A rectangular courtyard is 18 m 72 cm long and 13 m 20 cm broad. It is to be paved with square tiles all of the same size. Find the least possible number of such tiles required.

(a) 4290
(b) 4292
(c) 4295
(d) 4294

Q33. The six digit number 87937A is divisible by 6 where A is the least natural number. Find the value of A.

(a) 8
(b) 4
(c) 6
(d) 2

Q34. Where did Mahatma Gandhi preside over the annual session of the Indian National Congress for the first and the last time?

(a) Nagpur
(b) Belgaum
(c) Tripura
(d) Surat

Q35. From the given options, Select the letter-cluster that can replace the question mark (?) in the following series.

ZAB, DEF, HIJ, NOP, ?

(a) SUW
(b) TUV
(c) VUT
(d) OPQ

Q36. In an army camp, there were provisions for 425 men for 30 days. However, 375 men attended the camp. How long did the provisions last?

(a) 32 days
(b) 30 days
(c) 34 days
(d) 35 days

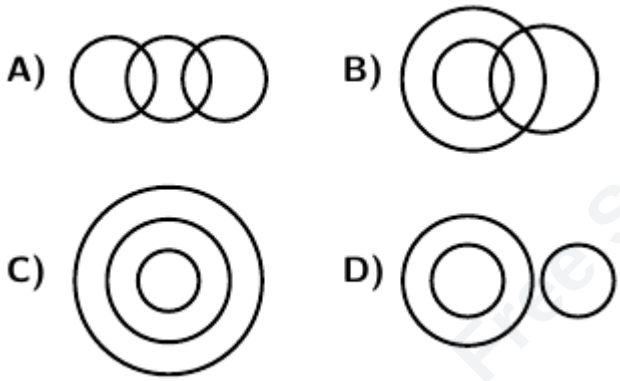
Q37. The Prime Minister of Pakistan, Imran Khan (as of October 2020), belongs to which political party?

(a) Pakistan Tehreek-e-Insaf
(b) Muslim League
(c) Sindh United Party
(d) Pakistan Peoples Party

Q38. Select the Venn diagram that best represents the relationship between

Currency, Economy, Rupee

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

Q39. Find the smallest number which when diminished by 3 is divisible by 21, 24, 30 and 45.

(a) 2523
(b) 2583
(c) 980
(d) 2463

Q40. Hinayana and Mahayana are sects of which religion?

(a) Hinduism
(b) Sikhism
(c) Jainism
(d) Buddhism

Q41. Butea monosperma is the botanical name of which plant that is native to the Indian subcontinent?

(a) Neem
(b) Peepal
(c) Palash
(d) Shirish

Q42. A 300-m-long train crosses an electric pole in 5 s. Find the speed of the train.

(a) 200 km/h
(b) 218 km/h
(c) 220 km/h
(d) 216 km/h

Q43. Who was NOT a member of the Cabinet Mission?

(a) AV Alexander
(b) Sir Stafford Cripps
(c) Lord Pethick-Lawrence
(d) Sir John Simon

Q44. An observer at the top of a tower observes that two cars are running towards the foot of the tower at a distance of 120 m from each other making angles of depression α and β such that α > β and tan α = √3 and tan β = 1/√3. Find the height of the tower.

(a) 120 √3 m
(b) 60 √3 m
(c) 80 √3 m
(d) 40 √3 m

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Q45. In the given data if 30 is replaced by 100 then find the difference of the two medians.

80, 90, 40, 30, 20, 10, 70, 60, 50

(a) 40
(b) 10
(c) 60
(d) 50

Q46. Find the mean height of persons from the following data.

Height(cm)	Number of Persons
120	3
130	4
140	5
150	6
160	2

(a) 160 cm
(b) 140 cm
(c) 145 cm
(d) 150 cm

Q47. By selling cakes at Rs. 84 per dozen, a baker earns a profit of 12%. At what price must he sell each cake to earn a profit of 20%?

(a) Rs. 9.50
(b) Rs. 10.50
(c) Rs. 8.50
(d) Rs. 7.50

Q48. Who among the following was the oldest at the time of taking the oath of Prime minster for the first time?

(a) Morarji Desai
(b) Chaudhary Charan Singh
(c) VP Singh
(d) Atal Bihari Vajpayee

Q49. On which road is the Bombay Stock Exchange located?

(a) Elphinstone Road
(b) Dalal Street
(c) Pedder Road
(d) Cadel Road

Q50. In the new budget, the price of petrol has risen by 20%. By how much percentage must a motorist reduce consumption of petrol so that his expenditure on it does NOT increase?

(a) 16 1/2 %
(b) 16 4/5 %
(c) 16 3/4 %
(d) 16 2/3 %

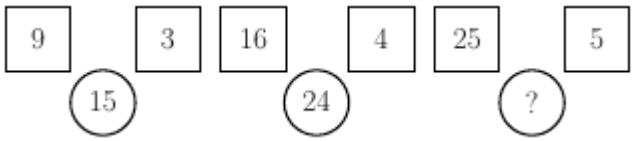
Q51. From the given options, select the option that can replace the question mark (?) in the following series.

26A2, 4E6, 8I10, 14O16, ?

(a) 19U23
(b) 22U20
(c) 20V22
(d) 20U22

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Q52. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 33
(b) 32
(c) 34
(d) 35

Q53. Find the area of a rhombus whose perimeter is 164 cm and one diagonal is of length 80 cm.

(a) 720 cm^2
(b) 710 cm2
(c) 705 cm2
(d) 700 cm2

Q54. Which of the following is the largest delta in the world?

(a) Amazon
(b) Ganges-Brahmputra
(c) Nile
(d) Congo

Q55. Which of the following is NOT connected with India's space programmes?

(a) Sriharikota
(b) Sriperumbudur
(c) Thumba
(d) Abdul Kalam Island

Q56. What smallest fraction should be added to 3 2/3 + 6 7/12 + 4 9/36 + 5 + 7 1/12 to make the sum a whole number?

(a) 7/12
(b) 11/12
(c) 13/12
(d) 5/12

Q57. In a certain code language, VEGETABLE is written as IJKLMNOPQ. How will TABLE be written as in that language?

(a) QPONM
(b) PQNOM
(c) MONOP
(d) MNOPQ

Q58. How many distinct symbols are used in the hexadecimal number system?

(a) 16
(b) 2
(c) 1
(d) 3

Q59. Four word-pairs have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Humayun : Mughal
(b) Jainism : Mahavir
(c) Sikhism : Shri Guru Nanak Dev Ji
(d) Buddhism : Gautam Buddha

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Q60. Simplify the given expression 41/10 - [21/2 - {5/6 - (2/5 + 3/10)}]

(a) 12/25
(b) 19/15
(c) 31/25
(d) 26/15

Q61. A system program that translates and executes an instruction at the same time is called:

(a) Interpreter
(b) Assembler
(c) Compiler
(d) Operating System

Q62. What must be subtracted from each of the numbers 23, 40, 57 and 108 so that the remainders are in proportion?

(a) 4
(b) 8
(c) 2
(d) 6

Q63. The radius of a 80 cm wide road roller is 77 cm. Find the number of revolutions that the roller will take to cover an area of 96.8 m^2. [Take $\pi = 22/7$]

(a) 25
(b) 24
(c) 20
(d) 22

Q64. Which Act of the British Parliament provided for responsible government in the provinces?

(a) Act of 1919
(b) Act of 1909
(c) Act of 1892
(d) Act of 1935

Q65. Which canal connects the Pacific Ocean and the Atlantic Ocean?

(a) Suez Canal
(b) Panama Canal
(c) Kiel Canal
(d) Corinth Canal

Q66. Which former space scientist was awarded the Padma Bhushan in 2019?

(a) UR Rao
(b) K Kasturirangan
(c) Nambi Narayanan
(d) Madhavan Nair

Q67. Using BODMAS, simplify the following.

$7/9 \times 21/5 \times 25\ (65^2 - 55^2)$

(a) 98000
(b) 84000
(c) 42000
(d) 86000

Q68. As of October 2020, who is the Chairman of the Fifteenth Finance Commission?

(a) Bimal Jalan
(b) Ajay Narayan Jha
(c) Nand Kishore Singh
(d) Shaktikant Das

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Q69. As of October 2020, who is the Director General of the Council of Scientific and Industrial Research (CSIR)?

(a) Prof. Samir K Brahmachari
(b) Dr. RA Mashelkar
(c) Dr. Shekhar Mande
(d) Dr. SK Joshi

Q70. Who is the Chairman of the NITI Ayog?

(a) The Prime Minister
(b) The Vice President
(c) The President
(d) The Finance Minister

Q71. Read the given instructions carefully and answer the question that follows.

8 people - A, B, C, D, E, F, G, H-are sitting at a round table facing each other. A is between E and G, whereas G is sitting second to the right of F. H is between D and B and is second to the left of F. A and B are sitting opposite each other. Who is sitting immediately to the right of G?

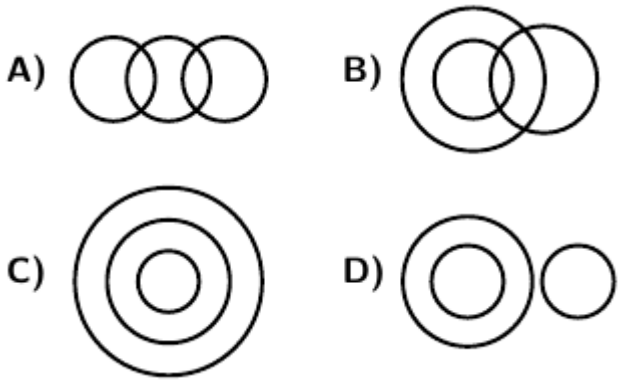
(a) A
(b) B
(c) H
(d) E

Q72. The Muslim League was founded in _____.

(a) Karachi
(b) Dhaka
(c) Hyderabad
(d) Lahore

Q73. Select the Venn diagram that best represents the relationship between

Building, House, Field



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

Q74. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) XYZ
(b) GHI
(c) MNQ
(d) RST

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Q75. Which national park in India has the maximum number of rhinos?

(a) Keibul Lamjao National Park
(b) Kaziranga National Park
(c) Kanha National Park
(d) Nagarhole National Park

Q76. Abir sells an article to Kunal at the profit of 15% and Kunal sells it to Amar at the profit of 10%. If Amar pays Rs. 5,060 for it, what was its original cost price?

(a) Rs. 4,500
(b) Rs. 5,000
(c) Rs. 4.000
(d) Rs. 6,000

Q77. Which Viceroy ordered the partition of Bengal in 1905?

(a) Lord Curzon
(b) Lord Reading
(c) Lord Hardinge
(d) Lord Minto

Q78. Who is the first ever CEO of the Railway Board?

(a) Ajay Tyagi
(b) Mangu Singh
(c) Ashwani Lohani
(d) VK Yadav

Q79. In which Indian fort would you find the Musamman Burj?

(a) Red Fort of Delhi
(b) Golconda Fort
(c) Red Fort of Agra
(d) Fatehpur Sikri Fort

Q80. As of October 2020, who is the Vice President of India?

(a) Meira Kumar
(b) Sumitra Mahajan
(c) M Venkaiah Naidu
(d) Hamid Ansari

Q81. A sum is invested at compound interest payable annually. The interest in two successive years was Rs. 225 and Rs. 236.25. Find the rate of interest.

(a) 4%
(b) 4.5%
(c) 5%
(d) 5.5%

Q82. What is measured in 'joules'?

(a) Energy
(b) Power
(c) Force
(d) Velocity

Q83. _____ has won the FIFA Men's Football World Cup the maximum number of times.

(a) Brazil
(b) France
(c) Germany
(d) England

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Q84. Find the area of a trapezium whose parallel sides are 10 cm and 20 cm and non-parallel sides are equal to 10 cm.

(a) 60 √3 cm²
(b) 70 √3 cm²
(c) 75 √3 cm2
(d) 65 √3 cm2

Q85. If x – 1/x = 5, find the value of x^4 + 1/(x^4).

(a) 728
(b) 730
(c) 729
(d) 727

Q86. Observe the table below and answer the following question:

Year	Population	Consumption of electricity (GW)
2015	20	25
2016	30	40
2017	40	60
2018	50	80
2019	60	100

1 GW = 100 Million Watt

Population in Million

In the year 2016, what was the consumption of electricity per person?

(a) 266.67 W
(b) 133.33 W
(c) 166.67 W
(d) 333.33 W

Q87. Observe the table below and answer the following question:

Year	Population	Consumption of electricity (GW)
2015	20	25
2016	30	40
2017	40	60
2018	50	80
2019	60	100

1 GW = 100 Million Watt

Population in Million

By what percentage did the consumption of electricity increase from 2015 to 2019?

(a) 25%
(b) 100%
(c) 75%
(d) 300%

Q88. Observe the table below and answer the following question:

Year	Population	Consumption of electricity (GW)

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2015	20	25
2016	30	40
2017	40	60
2018	50	80
2019	60	100

1 GW = 100 Million Watt

Population in Million

In which year did electricity consumption grow by 50%?

(a) 2016
(b) 2017
(c) 2018
(d) 2019

Q89. Observe the table below and answer the following question:

Year	Population	Consumption of electricity (GW)
2015	20	25
2016	30	40
2017	40	60
2018	50	80
2019	60	100

1 GW = 100 Million Watt

Population in Million

Which of the following is true with regards to consumption of electricity per person based on the figures given in the table above?

(a) Decreased between 2015 and 2019
(b) Increased between 2015 and 2019
(c) Increased by more than 40% in 2019 as compared to 2015
(d) Neither increased nor decreased between 2015 and 2019

Q90. Find the value of 216 ÷ 6 + 6 × 4 – 10.

(a) 150
(b) 62
(c) 72
(d) 50

Q91. In a certain code language, RAT is written as QZS. How will TABLE be written as in that language?

(a) SDAKZ
(b) SZAKD
(c) SZALE
(d) SZADK

Q92. Select the letter that when placed in the blank of the given series will complete the series.

MNO, PQR, STU, V_X

(a) U
(b) Y
(c) W
(d) Z

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Q93. From the given options, select the number that can replace the question mark (?) in the following series.

9, 26, 65, 124, ?

(a) 214
(b) 215
(c) 216
(d) 217

Q94. Among the following words, which one will come last if they are arranged as per their order in an English dictionary?

Keep, King, Keen, Kite, Knight.

(a) Keen
(b) King
(c) Knight
(d) Keep

Q95. In a certain code language, ROTARY is written as 65. How will CONSCIENCE be written as in that language?

(a) 180
(b) 160
(c) 170
(d) 150

Q96. Select the option that is related to the third number in the same way as the second number is related to the first number.

5 : 125 : : 8 : ?

(a) 512
(b) 725
(c) 612
(d) 343

Q97. Study the given table carefully and select the number from among the given options that can replace the question mark {?}.

3	2	1
3	2	1
96	44	?

(a) 11
(b) 12
(c) 14
(d) 13

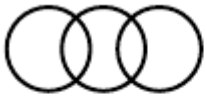
Q98. A is the daughter of B. B is the husband of C. C is the sister of D. How is A related to D?

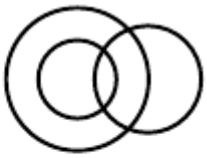
(a) Brother's daughter
(b) Sister's daughter
(c) Sister
(d) Sister's son

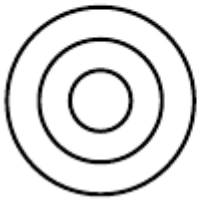
Q99. Select the Venn diagram that best represents the relationship between

Chicken, Vegetarian food, and Non-vegetarian food.

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A) 

B) 

C) 

D) 

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

Q100. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statement:

Most students have charismatic personalities.

Conclusions:

1. Some students have charismatic personalities.
2. All students have charismatic personalities.

(a) Both conclusion 1 and 2 follow.
(b) Neither conclusions 1 nor 2 follows.
(c) Only conclusion 1 follows.
(d) Only conclusion 2 follows.

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) Jhumpa Lahiri

The correct option is Jhumpa Lahiri.

Key Points

• The Booker Prize is also known as the Booker Prize for Fiction or The Man Booker Prize.

• In 2014 it was widened to any English-language novel but before that novels written by Commonwealth, Irish, and South African citizens were eligible to receive the prize.

• Nilanjana Sudeshna "Jhumpa" Lahiri was born on July 11, 1967.

• She is an American author known for her short stories, novels and essays in English.
• Some of her novels include "The Namesake" (2003), "The Lowland" (2013), "Whereabouts" (2021).

Additional Information

• The first booker prize was given in 1969.
• In 1970, Bernice Rubens became the first woman to win the Booker Prize, for "The Elected Member".
• Alice Munro's, "The Beggar Maid" was shortlisted in 1980 and remained the only short story collection to be shortlisted.
• Kiran Desai is an Indian author.Her novel "The Inheritance of Loss" won the 2006 Man Booker Prize.
• Arundhati Roy is an Indian author best known for her novel "The God of Small Things", which won the Man Booker Prize for Fiction in 1997.
• Aravind Adiga is an Indian writer and journalist. His debut novel, "The White Tiger", won the 2008 Man Booker Prize.

Q2. Answer: (c) Roberto Azevedo

The correct option is Roberto Azevedo.

Key Points

• Roberto Azevedo was born on 3 October 1957, is a Brazilian career diplomat.
• He had served as Director-General of the World Trade Organization (WTO) from 2013 until 2020.
• Since 2020, he has been Executive Vice President and Director of Corporate Affairs at PepsiCo.
• He succeeded Pascal Lamy as Director-General of the World Trade Organization in May 2013.
• On 14 May 2020, he announced that he would resign as the Director-General of the World Trade Organization on 31 August 2020.

Additional Information

• WTO (World Trade Organization) was formed on 1 January 1995.
• The WTO is headquartered in Geneva, Switzerland.
• Peter Sutherland
• He was an Irish businessman, barrister and Fine Gael, politician.
• He was the 1st Director General of WTO, serving from July 1993 to May 1995.
• He is also known as the Father of Globalization.
• Arthur Dunkel
• Arthur Dunkel (26 August 1932 – 8 June 2005) was a Swiss (Portuguese-born) administrator.
• He served as General Agreement on Tariffs and Trade Director-General between 1980 and 1993.
• Pascal Lamy
• Pascal Lamy is a French political consultant and businessman.
• He was the Director-General of the World Trade Organization from 1 September 2005 to 1 September 2013 for 8 years.

Q3. Answer: (d) NaCl

The correct option is NaCl.

Key Points

• The chemical name of common salt is Sodium Chloride.
• Salt is a mineral composed primarily of sodium chloride (NaCl).
• Salt in the form of a natural crystalline mineral is known as rock salt or halite.
• Salt can be easily obtained from seawater.
• The open ocean has about 35 g (1.2 oz) of solids per litre of seawater, a salinity of 3.5%.

Additional Information

• NaOH
• Sodium Hydroxide (NaOH) is also known as lye and caustic soda.
• Pure sodium hydroxide is a colorless crystalline solid with a melting point of 318 °C.
• Some of its industrial uses are in the manufacturing of pulp and paper, textiles, drinking water, soaps and detergents etc.
• KOH
• Potassium hydroxide (KOH) is commonly called caustic potash.
• KOH is a prototypical strong base.
• It is a white solid that is dangerously corrosive.
• HCL
• Hydrochloric Acid (HCl) is also known as muriatic acid.

• It is a colorless solution with a distinctive pungent smell.
• It is classified as a strong acid.

Q4. Answer: (c) Tomato

The correct option is Tomato.

Key Points

• Tomato was originated in western South America, Mexico, and Central America.
• The tomato is the edible berry of the plant Solanum Lycopersicum, commonly known as the tomato plant.
• Tomatoes are a significant source of umami flavour.
• Tomatoes are fruits—botanically classified as berries—they are commonly used culinarily as a vegetable ingredient or side dish.
• In India, Uttarakhand is one of the main producers.

Additional Information

• Turnip
• The turnip or white turnip is a root vegetable commonly grown in temperate climates worldwide.
• Timpsila Turnip is also known as 'Indian Turnip'.
• Boiled turnip is 94% water, 5% carbohydrates, and 1% protein, with negligible fat.
• Radish
• The radish is an edible root vegetable.
• It is produced mainly by China, Japan, and South Korea.
• West Bengal, Bihar, Uttar Pradesh, Karnataka, Punjab and Assam are major radish growing states in India.
• Potato
• The potato is a starchy tuber of the plant Solanum tuberosum and is a root vegetable native to the Americas.
• India ranks as the world's third largest potato producing nation.
• Uttar Pradesh produces almost 34 percent of total production in India.

Q5. Answer: (d) iTunes

The correct option is iTunes.

Key Points

• The iTunes Store is a digital media store operated by Apple Inc.
• It opened on April 28, 2003, as a result of Steve Jobs.
• Tim Cook is the CEO of Apple Inc. since 2011.
• Google was founded on September 4, 1998, by Larry Page and Sergey Brin.
• Sundar Pichai was appointed CEO of Google on October 24, 2015, replacing Larry Page.

Additional Information

• On December 3, 2019, Pichai also became the CEO of Alphabet.
• YouTube
• YouTube is an American online video-sharing and social media platform.
• Its headquarter is in San Bruno, California.
• It was launched on February 14, 2005, by Steve Chen, Chad Hurley, and Jawed Karim.
• Blogger
• Blogger is an American online content management system.
• It was developed by Pyra Labs and its founders are Evan Williams, Meg Hourihan.
• It was acquired by Google in 2003.
• Gmail
• Gmail is a free email service provided by Google.
• It was launched by Google in 2004.

Q6. Answer: (a) 30°

Given:

If A, B, and C are the angles of a triangle then

2angle A = 3angle B = 6angle C

Concept Used:

Sum of the angles of a triangle is 180°

Calculation:

According to the question,

2angle A = 3angle B = 6angle C.

=> angle A = 3angle C

=> angle B = 2angle C

Now, according to the concept used,

angle A + angle B + angle C = 180°

=> 3angle C + 2angle C + angle C = 180°

=> 6angle C = 180°

=> angle C = 30°

Therefore The value of angle C is 30°.

Q7. Answer: (c) 128

Given:

3-digit numbers leave the remainder 1 when divided by 7

Concept used:

Arithmetic Progression = a_n = a + (n -1)d

Where, a_n = last term, a = first term, n = no. of terms, and d = common difference

Calculations:

The first three-digit number divisible by 7 is 105

The last three-digit number divisible by 7 is 994

The sequence of numbers 105, 112,..., and 994 which are divisible by 7 is an Arithmetic progression with 1st term 105 and the common difference of 7

According to the question,

The n^(th) term of an arithmetic progression is given by

Here, a = 105, a_n = 994, d = 7

=> 994 = 105 + (n - 1)7

=> 994 - 105 = (n - 1)7

=> 889 = 7n - 7

=> 7n = 896

=> n = 896/7 = 128

Therefore 128 digits are divisible by 7 leaving the remainder 1.

Q8. Answer: (c) 24 h

Given:

Tap A filled = 6 hours

Tap B filled = 8 hours

Tap C empty = 4 hours

Concept used:

Total capacity LCM

The efficiency of the inlet tap is always positive and the efficiency of the outlet tap is always negative

Formula used:

Efficiency = (Total capacity)/Time

Calculation:

Total capacity LCM of 6, 8, 4 = 24

Efficiency of A = 24/6 = 4

Efficiency of B = 24/8 = 3

Efficiency of C = 24/4 = -6

Total efficiency of A, B, and C = 4 + 3 - 6 = 7 - 6 = 1

Total time taken by A, B, and C to fill the tank = 24/1 = 24 hours

Therefore The total time taken by A, B, and C to fill the tank is 24 hours.

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Q9. Answer: (b) 75

Given:

The greatest number is when 76, 151, and 226 are divided by it, the remainders are the same.

Concept Used:

In this type of question, the HCF of the difference of numbers is taken.

Formula Used:

If there are 3 numbers 'a', 'b', and 'c' and a > b > c, = {HCF [(a - b), (b - c)]}

Calculation:

According to the question,

Greatest number = HCF [(226 - 151), (151 - 76)]

=> HCF [(75), (75)] = 75

Therefore 75 will be the greatest number such that when 76, 151, and 226 are divided by it, the remainders are the same.

Q10. Answer: (c) 1

Given:

x2 = y + z, y2 = z + x and z2 = x + y

Calculations:

According to question, we have:

x2 = y + z

On addition of x both sides, we get:

=>x^2 + x = x + y + z ----------(1)

And,

y2 = z + x

On addition of y both sides, we get:

=>y2 + y = x + y + z ----------(2)

And,

z2 = x + y

On addition of z both sides, we get:

=>z2 + z = x + y + z ----------(3)

We have to find:

1/(x + 1) + 1/(y + 1) + 1/(z + 1)

On multiplying x, y and z to both the numerator and denominator of the first, the second and the third terms of the equation respectively, we get:

= 1/(x + 1) × x/x + 1/(y + 1) × y/y + 1/(z + 1) × z/z

= x/(x^2 + x) + y/(y^2 + y) + z/(z^2 + 1)

Using equations (1), (2) and (3), we get:

= x/(x + y +z) + y/(x + y +z) + z/(x +y+z)

= (x+y+z)/(x+y+z)

= 1

Hence, The Required value is 1.

Q11. Answer: (a) M/P*N

From the given information:

A + B means A is the husband of B

A/B means A is the sister of B

A* B means A is the son of B

Now we consider the given options:

1) M/P*N → M is the sister of P, and P is the son of N.

Here M is the daughter of N.

2) M*N/O → M is the son of N, and N is the sister of O.

Here we can clearly see that M is the son of N so M cannot be the daughter of N.

3) M + O*N → M is the husband of O, and O is the son of N.

Here M is the son-in-law of N.

4) P*M + O/N → P is the son of M, M is the husband of O, and O is the sister of N.

Here M is the brother-in-law of N.

Hence the correct answer is option 1).

Q12. Answer: (d) 0.3125

Given:

5 × 0.5 × 0.05 × 0.005 × 500

Calculations:

5 × 0.5 × 0.05 × 0.005 × 500

=> 2.5 × 0.05 × 0.005 × 500

=> 0.125 × 0.005 × 500

=> 0.000625 × 500 = 0.3125

Therefore The value of the given equation is 0.3125.

Q13. Answer: (d) Both conclusions 2 and 3 follow.

Statements:

I. Some beds are side-tables.

II. All side-tables are lamps.

Venn diagram:

Conclusions:

1. All beds are side-tables. → Does not follow (because it is given that some beds are side-tables, not all beds.)

2. Some lamps are beds. → Follows (because all side-tables are lamps and some beds are side-tables, so some lamps are definitely beds.)

3. Some lamps are side-tables. → Follows (because all side-tables are lamps and some lamps are definitely side-tables.)

4. All side-tables are beds. → Does not follow (because only some side-tables are beds, not all side-tables.)

Hence, “Both conclusions 2 and 3 follow.”.

Q14. Answer: (d) Maharashtra

The correct option is Maharashtra.

Key Points

• The Aravalli Range is a mountain range in Northern-Western India.

• Its total length is about 670 km (430 mi).

• Aravalli Hills can be found in Southern Haryana, Rajasthan and some parts of Gujrat.

• The highest peak is Guru Shikhar on Mount Abu at 1,722 metres (5,650 ft).

• The Aravalli Range is arguably the oldest geological feature on Earth.

Additional Information

• The origin of Aravalli Hills is estimated of the Proterozoic era.

• The Great Himalayan Ranges are 2,400 km (1500 miles) in length. It separates Tibetan Plateau from the Indian Subcontinent.

• The highest peak in the world is Mount Everest with a height of 8,850 m.

• The Vindhya range extends up to Gujarat in the west, Uttar Pradesh and Bihar in the north, and Chhattisgarh in the east.

• Narmada river travels parallel to the Vindhya ranges.

Q15. Answer: (d) 543

The correct option is 543.

Key Points

• Lok Sabha is also known as the House of the People.

• It's the lower house of the Parliament.

• Its term limit is 5 years.

• The maximum membership of the House allotted by the Constitution of India is 552.

• PM Narendra Modi is the Leader of the House and Defence Minister Rajnath Singh is the Deputy Leader of the House.

Additional Information

• The President of India, Rajya Sabha and Lok Sabha are the three pillars of the Indian Legislature.

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• Shrim. Draupadi Murmu is the President of India.
• Om Birla is the speaker of Lok Sabha.
• Jagdeep Dhankhar is the Vice President of India & Chairman of the Rajya Sabha since 11 August 2022.

Q16. Answer: (d) Feline

The correct option is Feline.

Key Points

• Feline or Felidae is a family of mammals in the order Carnivora, colloquially referred to as cats.
• Wild cats occur in Africa, Europe, Asia and the Americas.
• The Lion, Tiger, Jaguar, Cheetah, Panther etc. are wild cats.
• These are predators by nature and can be harmful if domesticated.
• All the members of cat family are mammals.

Additional Information

• Canine
• Canine is also called Canid.
• Any of 36 living species of foxes, wolves, jackals, and other members of the dog family.
• The dog was the first species to be domesticated, by hunter-gatherers.
• Bovine
• Bovines is a diverse group of 10 genera of medium to large-sized ungulates.
• It includes cattle, bison, African buffalo, water buffalos, and the four-horned and spiral-horned antelopes.
• The largest extant bovine is the gaur.
• Caprine
• The subfamily Caprinae, is part of the ruminant family Bovidae, and consists of mostly medium-sized bovids.
• A member of this subfamily is called a Caprine, or, more informally, a goat-antelope.
• Within this tribe, a prominent clade includes sheep and goats.

Q17. Answer: (a) Bering Strait

The correct option is Bering Strait.

Key Points

• The Bering Strait is located between the Pacific and Arctic oceans.
• It separates the Russia from the Seward Peninsula of Alaska.
• The Strait is named after Vitus Bering, a Danish explorer in the service of the Russian Empire.
• It is believed that it was a land bridge Asia to North America known as Beringia.
• The Bering Strait is about 82 kilometers (51 mi) wide.
• Its deepest point is 90 m (300 ft).

Additional Information

• Palk Strait
• The Palk Strait lies between the Tamil Nadu state of India and the Jaffna District of Sri Lanka.
• It connects the Bay of Bengal in the northeast with Palk Bay in the southwest.
• It is 40 to 85 miles (64 to 137 km) wide and 85 miles long.
• The strait is named after Robert Palk.
• Strait of Magellan
• The Strait of Magellan separates South America and Tierra del Fuego.
• It is a natural passage between the Atlantic and Pacific oceans.
• It was discovered by Portuguese explorer Ferdinand Magellan in 1520.
• Strait of Dover
• Dover Strait marks the boundary between the English Channel and the North Sea.
• It separates The Great Britain from Continental Europe.
• The shortest distance across the strait is approximately 20 miles (32 kilometers).

Q18. Answer: (c) Rs. 1,600

Given:

The simple interest on a certain sum for 3 years at 8% per annum

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The simple interest on the same sum for 2 years at 9% per annum.

The difference between both schemes = Rs. 96

Concept used:

Simple interest = (P × R × T)/100

Calculations:

According to the question,

[(P × 8 × 3)/100] - [(P × 9 × 2)/100] = 96

=> ([P(24 - 18)])/100 = 96

=> 6P = 9600

=> P = 9600/6 = Rs. 1600

Therefore The sum is Rs. 1600.

Q19. Answer: (c) UNCED

The correct option is UNCED.

Key Points

• The full form of UNCED is United Nations Conference on Environment and Development.

• It is also known as the Rio Summit, the Rio Conference or the Earth Summit.

• This was a major United Nations conference held in Rio de Janeiro from June 3 to June 14, 1992.

• The main issue addressed in this summit was Climate change.

• The Earth Summit resulted in the following documents:

• Rio Declaration on Environment and Development

• Agenda 21

• Forest Principles

Additional Information

• UNICEF

• It is an agency of the United Nations responsible for providing humanitarian and developmental aid to children worldwide.

• Its full form is United Nations International Children's Emergency Fund.

• It was founded on 11 December 1946. Its headquater is New York, USA.

• UNCTAD

• Its full form is United Nations Conference on Trade and Development.

• It was established in 1964 as an intergovernmental organization intended to promote the interests of developing states in world trade.

• Its headquarter is in Geneva, Switzerland.

• UNESCO

• Its full form is United Nations Educational, Scientific and Cultural Organization.

• Its United Nations' aimed at promoting world peace and security through international cooperation in education, arts, sciences and culture.

• Its headquarter is in Paris, France.

Q20. Answer: (d) 18 m

Given:

A tree broke at a height of 8 m from its foot

The broken upper part touches the ground at a point of 6 m from its foot.

Concept used:

Pythagorean Theorem:

$(\text{Hypotenuse})^2 = (\text{Perpendicular})^2 + (\text{Base})^2$

Calculations:

Here, H = Broken upper part

=> P = height at which tree broke

=> B = point at which broken part touches the ground

The length of the upper broken part,

$H^2 = (8)^2 + (6)^2$

=> H2 = 64 + 36

=> H = √100 = 10 m

According to the question,

Total height of tree = 8 + 10 = 18 m

Therefore The height of the tree is 18 m.

Q21. Answer: (d) -3/2

Given:

(3√5 - 5)/(3√5 + 5) = a + b √5

Concept used:

(1) Factorisation: Multiplication of conjugate pair of the denominator to both numerator and denominator of an irrational term.

(2) If a + b√c = 2 + 3√c

Then, a = 2 and b = 3 and this method is called comparison method.

Calculations:

According to question, we have:

(3√5 - 5)/(3√5 + 5)

On Factorisation, we get:

= (3√5 - 5)/(3√5 + 5) × (3√5-5)/(3√5-5)

= ((3√5 - 5)²)/((3√5)² - 5²)

= ((3√5)² + 5² - 2×(3√5)×5)/(45 - 25)

= (70 - 30√5)/20

= 7/2 - 3√5/2

= a + b √5 (given)

By comparing we get,

So, b = - 3/2

Hence, The Required value of b is (-3)/2.

Q22. Answer: (a) 1215

The pattern followed in the given series is:

The difference between the terms is multiple of 3.

Hence the correct answer is option 1)

Q23. Answer: (c) Harish Salve

The correct answer is Harish Salve.

Key Points

• Harish Salve fought the case of Kulbhushan Jadhav at the International Court of Justice.

• Kulbhushan Sudhir Jadhav is an Indian national. It is alleged by the Pakistani government that he was arrested in the Pakistani province of Balochistan on charges of terrorism and spying for India's intelligence agency, the Research and Analysis Wing.

• Harish Salve is an Indian senior advocate who practices at the Supreme Court of India. He served as the Solicitor General of India.

Additional Information

• The International Court of Justice, sometimes known as the World Court, is one of the six principal organs of the United Nations.

• It settles disputes between states in accordance with international law and gives advisory opinions on international legal issues.

Q24. Answer: (c) 270 km

Given:

Total distance = 360 km

Total time taken = 4 hrs

Formula used:

Distance = Speed × Time

Calculation:

According to the question,

Time taken if he travels only by air = 4 - 2 = 2 hrs

Speed of man if he travels by air = 360/2 = 180 km/hr

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He saved 4/5 th of time taken by train = 2 hrs

Time taken by train = 2 × (5/4) = 5/2 hrs

Time taken by air = 4 - (5/2) = 3/2 hrs

Distance covered by air

=> 180 × (3/2)

=> 90 × 3 = 270 km

Therefore The distance he traveled by air is 270 km.

Q25. Answer: (c) South America

The correct answer is South America.

Key Points

• Tierra del Fuego is an archipelago at South America's southernmost tip, shared by Chile and Argentina.

• It's known for its dramatic landscape of snowy mountains, glaciers, tundra and wind-sculpted trees.

Additional Information

• Its main island, Isla Grande, is home to the Argentine resort town of Ushuaia.

• Tierra del Fuego is divided between Chile and Argentina, with the latter controlling the eastern half of the main island and the former the western half plus the islands south of Beagle Channel and the southernmost islands.

• The southernmost extent of the archipelago is just north of latitude 56 degrees.

Q26. Answer: (d) Only argument 1 is strong.

Given question:

Should private schools be banned in India?

According to given information,

Arguments:

1. Yes, they are the reason for commercialisation of education.

=>It is a valid argument because it shows a fact and can be seen in today's society that because of private schools, education is commercialised.

2. No, because the rich people cannot send their child to government schools.

=>It is a baseless argument because there is no reason why rich people can't send their child to government schools.

Hence, Only argument 1 is strong.

Q27. Answer: (c) Delhi

The correct answer is Delhi.

Key Points

• The National Capital Territory of Delhi has a legislative assembly and council of ministers.

• At present, it consists of 70 members, directly elected from 70 constituencies.

• Delhi, officially the National Capital Territory of Delhi (NCT), is a city and a union territory of India containing New Delhi, the capital of India.

• Delhi elects 7 members and they are directly elected by the state electorates of Delhi. Members are elected for a term of five years.

• The number of seats, allocated to the state/union territory is determined by the population of the state/union territory.

Additional Information

• Union Territories without legislature

• Andaman and Nicobar Islands

• Chandigarh

• Dadra and Nagar Haveli

• Daman and Diu

• Lakshadweep

• Ladakh

• Union Territories with the legislature:

• National Capital Territory of Delhi

• Puducherry

• Jammu and Kashmir

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Q28. Answer: (d) 96

The pattern followed here is:

The number written in the coded words is the sum of the positional values of the letters in the word.

In EDUCATION → 92 .

Sum of all positional values = 5 + 4 + 21 + 3 + 1 + 20 + 9 +15 + 14 = 92

Similarly,

In KNOWLEDGE → ?

Sum of all positional values = 11 + 14 + 15 + 23 + 12 + 5 + 4 + 7 + 5 = 96

Hence, Option 4) is the correct answer.

Q29. Answer: (c) Jet Airways

Correct answer is Jet Airways.

Key Points

• Jet Airways stop operations in April 2019.

• The company has declared plan to proceed operations in early 2022.

• On the 29th anniversary of its authorizing on 5 May 2022, it performed a test flight, which is a step in obtaining an Air Operators Permit (AOP).

• Jet Airways is be one of most important Indian airlines established on 1st April 1992.

• Additional Information

• Air Sahara was established in 1991 and made its inaugural flights in late 1993.

• The airline was established as a private company by Rahul Bhatia of InterGlobe Enterprises and Rakesh Gangwal in 2006.

• Kingfisher Airlines was started in 2003 and closed operations when its license was cancelled on 20 October 2012.

Q30. Answer: (c) Anil Prakash Joshi

The correct answer Anil Prakash Joshi.

Key Points

• Dr Anil Prakash Joshi is an environmentalist, green activist, and the founder of Himalayan Environmental Studies and Conservation Organization, a Dehradun-based voluntary organization

• His work majorly includes developing sustainable technologies that are ecology-inclusive economies for ecosystem development.

Additional Information

• Aruna Roy is an Indian social activist, professor, union organiser and former civil servant. She is the president of the National Federation of Indian Women and founder of the Mazdoor Kisan Shakti SangathanKisan

• "Anna" Hazare is an Indian social activist who led movements to promote rural development, increase government transparency, and investigate and punish corruption in public life.

• Medha Patkar née Khanolkar is an Indian social activist and former Politician working on various crucial political and economic issues raised by tribals, dalits, farmers, labourers and women facing injustice in India.

Q31. Answer: (c) 729

The logic followed here is:

Only 729 is a perfect cube among all of the options.

=> 743 = (743)^(1/3) = 9.057

=> 716 = (716)1/3 = 8.946

=> 729 = (729)1/3 = 9

=> 741 = (741)1/3 = 9.049

Hence, option 3) is different from the rest.

Q32. Answer: (a) 4290

Given:

Length = 18 m 72 cm = 1872 cm

Width = 13 m 20 cm = 1320 cm

Concept used:

Area of rectangle = l × b

Area of square = a^2

Calculations:

The edge of the square tile must be the common divisor of the dimensions of the courtyard.

The maximum edge of square tile = HCF of 1872 and 1320 = 24 cm

According to the question,

The required number of tiles = Area of courtyard/ Area of square tile

=> (1872 × 1320)/((24)²)

=> (2471040)/576 = 4290

Therefore The least number of tiles required to cover the courtyard is 4290.

Q33. Answer: (d) 2

Given:

The six-digit number 87937A is divisible by 6

Where A is the least natural number.

Concept used:

Hit and trial method

Calculations:

According to the question,

Keeping the values of options, and applying divisibility rule of 6. we get

=> 879378 / 6 = remainder 0

=> 879374 / 6 = remainder 2

=> 879376 / 6 = remainder 4

=> 879372 / 6 = remainder 0

Between 8 and 2, the least natural number is 2

Therefore The value of A is 2.

Q34. Answer: (b) Belgaum

The correct answer is Belgaum

Key Points

• In 1924, Mahatma Gandhi presided over the Belgaum session of the Indian National Congress.

• The Belgaum session was the only Congress session presided over by Mahatma Gandhi.

• Gandhiji became the president of the Indian National Congress in 1924 and showed great respect to the land by touching its soil immediately after landing there.

Additional Information

• In Surat Session (1907), The Radicals or Extremists wanted Lala Lajpat Rai or Tilak as a presidential candidate, and the Moderates supported Rash Behari Ghosh to be the President.

• But Lala Lajpat Rai stepped down and Rash Behari Ghosh became the President.

• In 1939, this Session of Congress was held at Tripuri which is a small town situated in the state of Madhya Pradesh. This session is famous as in this Pattabhi Sitaramayya was standing against Subhas Chandra Bose. Pattabhi Sitaramayya was the closest candidate appointed by Mahatma Gandhi on his behalf.

• In 1920, the Nagpur session of Congress adopted a resolution for the Non-Cooperation Movement under the leadership of Mahatma Gandhi.

Q35. Answer: (b) TUV

The pattern followed here is:

On continuing the same pattern, we get,

Hence, ‘TUV’ is the correct answer.

Q36. Answer: (c) 34 days

Given:

M1 = 425, D1 = 30

M2 = 375, D2 =?

Concept used:

M1 D1 = M2 D2

As the provisions are the same

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Calculations:

According to the question,

425 × 30 = 375 × D2

=> 12750 = 375 × D2

=> D2 = 12750/375 = 34 days

Therefore The provisions last for 34 days.

Q37. Answer: (a) Pakistan Tehreek-e-Insaf

The correct answer is Pakistan Tehreek-e-Insaf.

Key Points

• The Pakistan Tehreek-e-Insaf is a centrist political party in Pakistan.

• It was founded in 1996 by the Pakistani cricketer-turned-politician Imran Khan.

• Imran Khan is a Pakistani politician and the former Prime Minister of Pakistan.

• Before joining politics, Khan was a cricket player. He was the captain of the Pakistan national cricket team which won the 1992 Cricket World Cup.

Additional Information

• The All-India Muslim League was a political party established in 1906 in British India. The party arose out of the need for the political representation of Muslims in British India, especially in the event of the Indian National Congress-sponsored massive Hindu opposition to the 1905 partition of Bengal

• The Sind United Party was a political party in Sind, British India. The party was founded in June 1936, the same year that the Sind province had been created. The party was modelled on the Punjab Unionist Party.

• The Pakistan People's Party is a centre-left, social-democratic political party in Pakistan. It is currently the third largest party in the National Assembly.

Q38. Answer: (b) C

Given:

Currency, Economy, Rupee

Venn diagram to establish the relationship between Currency, Economy, and Rupee is:

As Currency is a part of an economy, so currency will come inside the economy.

Rupee is a type of currency, So it'll come inside the currency.

Hence, option 2) is the correct answer.

Q39. Answer: (a) 2523

Given:

The smallest number when diminished by 3 is divisible by 21, 24, 30 and 45

Calculations:

LCM of (21, 24, 30, 45) = 2520

According to the question,

2520 is completely divisible by 21, 24, 30 and 45.

2523 is the smallest number which when diminished by 3 is divisible by 21, 24, 30 and 45

Therefore The smallest number is 2523.

Q40. Answer: (d) Buddhism

The correct answer is Buddhism.

Key Points

• Buddhism is one of the world's largest religions and originated 2,500 years ago in India.

• Buddhists believe that human life is one of suffering and that meditation, spiritual and physical labour and good behaviour are the ways to achieve enlightenment, or nirvana.

• The biggest fundamental difference between Mahayana and Hinayana Buddhism is the worship of gods and goddesses.

• Mahayana workshops the bodhisattvas, while Hinayana Buddhists think that Buddha was the human instead of God because Hinayana thinks that Buddha was simply a man who found a way to Nirvana.

Additional Information

• Jainism is one of the world's oldest religions, originating in India at least 2,500 years ago. The spiritual goal of Jainism is to become liberated from the endless cycle of rebirth and to achieve an all-knowing state called moksha

• Sikhism is an Indian religion that originated in the Punjab region of the Indian subcontinent, around the end of the 15th century

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CE. Sikhism advocates equality, social justice, service to humanity, and tolerance for other religions.

• Hinduism is variously defined as an Indian religion, a set of religious beliefs or practices, a religious tradition, a way of life, or dharma—a religious and universal order by which followers abide

Q41. Answer: (c) Palash

The correct answer is Palash

Key Points

• Butea monosperma is the botanical name of Palash.

• It is a species of Butea native to tropical and sub-tropical parts of the Indian Subcontinent and Southeast Asia, ranging across Pakistan, India, Bangladesh, Nepal, Sri Lanka, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, and western Indonesia.

Additional Information

• Ficus religiosa or sacred fig is a species of fig native to the Indian subcontinent and Indochina that belongs to Moraceae, the fig or mulberry family. It is also known as the bodhi tree, pippala tree, peepul tree, peepal tree, pipal tree, or ashvattha tree

• Azadirachta indica, commonly known as neem, nimtree or Indian lilac, is a tree in the mahogany family Meliaceae. It is one of two species in the genus Azadirachta, It is typically grown in tropical and semi-tropical.

• Ibizia lebbeck is a species of Albizia, which is a botanical name of Shirish.

Q42. Answer: (d) 216 km/h

Given:

Length of train = 300 m

Time = 5 s

Concept used:

Speed = Distance / Time

Calculations:

Considering the train as stationary and pole mobile

According to the question,

Speed = 300/5 = 60 m/s

Now converting m/s to km/h = (60 × 18)/5=1080/5 = 216 km/h

Therefore The speed of the train is 216 km/h.

Q43. Answer: (d) Sir John Simon

The correct answer is Sir John Simon.

Key Points

• John Allsebrook Simon, 1st Viscount Simon, was a British politician who held senior Cabinet posts from the beginning of the First World War to the end of the Second World War.

• The Indian Statutory Commission, commonly referred to as the Simon Commission after its chairman Sir John Allsebrook Simon, was sent to India in 1928.

• The British government constituted a Statutory Commission under Sir John Simon.

• The commission was made to look into the functioning of the constitutional system in India and suggest changes.

Additional Information

• Albert Victor Alexander, 1st Earl Alexander of Hillsborough was a British Labour and Co-operative politician. He was three times First Lord of the Admiralty, including during the Second World War, and then Minister of Defence under Clement Attlee.

• Frederick William Pethick-Lawrence, 1st Baron Pethick-Lawrence, PC was a British Labour politician who, among other things, campaigned for women's suffrage from 1945 to 1947 he was Secretary of State for India and Burma and was involved in the negotiations that led to India's independence in 1947. Prime Minister Clement Attlee, however, made all the government's major decisions regarding India

• Sir Richard Stafford Cripps was a British Labour Party politician, barrister, and diplomat. A wealthy lawyer by background, he first entered Parliament at a by-election in 1931.

Q44. Answer: (b) 60 √3 m

Given:

Two cars are running towards the foot of the tower at a distance of 120 m from each other

Angles of depression α and β such that α > β

tan α = √3 and tan β = 1/√3

Concept used:

tanθ = Perpendicular/Base =P/B

Calculation:

According to the question,

In Triangle CBD,

tanα = CB/DB = h/x

=> √3 =h/x

=> x = h/√3

Again in Triangle ABC,

tanβ = CB/AB= h/(120 + x)

=> 1/√3 = h/[120 + (h/√3)]

=> 1/√3 = h√3/[120√3 + h]

=> 120√3 + h = (√3)(√3)h

=> 120√3 + h = 3h

=> 120√3 = 2h

=> h = (120√3)/2 = 60√3 m

Therefore The height of the tower is 60√3 m.

Q45. Answer: (b) 10

Given:

80, 90, 40, 30, 20, 10, 70, 60, 50

30 is replaced by 100

Concept used:

Median for odd no. of values = (n +1)/2 ^(th) term

Calculations:

On Writing in ascending order to the given number, 10, 20, 30, 40, 50, 60, 70, 80, 90

Where, n = 9

Median = (9 + 1)/2 =10/2 = 5^(th) term

Median = 50

Now replacing 30 by 100

On Writing in ascending order to the given number, 10, 20, 40, 50, 60, 70, 80, 90, 100

Where, n = 9

Median = (9 + 1)/2= 10/2 = 5th term

Median = 60

According to the question,

The difference in Median of both observations = 60 - 50 = 10

Therefore The difference between the two medians is 10.

Q46. Answer: (b) 140 cm

Given:

Height(cm)	Number of Persons
120	3
130	4
140	5
150	6
160	2

Concept used:

Mean = (Sum of observation)/(Number of observation)

Mean = (∑ fixi)/(∑ fi)

Calculation:

Height (xi)	Number of Persons (fi)	(fixi)
120	3	360
130	4	520
140	5	700
150	6	900
160	2	320
	(∑ fi) = 20	(∑ fixi) = 2800

According to the question,

Mean = 2800/20 = 140 cm

Therefore The mean height is 140 cm.

Q47. Answer: (d) Rs. 7.50

Given:

SP of 12 cakes = Rs. 84

Profit % = 12%

Concept used:

SP = CP(1 + P%)

Calculations:

According to the question,

SP of 12 cake = Rs. 84

=> 84 = CP(1 + 12%)

=> 84 = CP(1 + 0.12)

=> 84 = CP × 1.12

=> CP = 84/1.12 = Rs. 75

=> CP of 12 cakes = Rs. 75

=> CP of 1 cake = 75/12 = Rs. 6.25

Profit on 1 cake is 20%

SP of 1 cake = 6.25(1 + 20%)

=> SP = 6.25(1 + 0.20)

=> SP = 6.25 × 1.20 = Rs. 7.5

Therefore He sells each cake for Rs. 7.5.

Q48. Answer: (a) Morarji Desai

The correct answer is Morarji Desai.

Key Points

• Morarji Ranchhodji Desai was an Indian independence activist and politician who served as the 4th Prime Minister of India between 1977 to 1979 leading the government formed by the Janata Party.

• He is the oldest person to hold the office of prime minister, at the age of 81, in the history of Indian politics.

Additional Information

• Chaudhary Charan Singh served as the 5th Prime Minister of India. Historians and people alike frequently refer to him as the 'champion of India's peasants.

• V. P. Singh, was an Indian politician who was the 7th Prime Minister of India from 1989 to 1990 and the 41st Raja Bahadur of Manda. He is India's only prime minister to have been former royalty. He brought, Land Holding Act 1960 which was aimed at lowering the ceiling on land holdings to make it uniform throughout the State.

• Atal Bihari Vajpayee was an Indian politician and diplomat who served three terms as the 10th prime minister of India, first for a term of 13 days in 1996, then for a period of 13 months from 1998 to 1999, followed by a full term from 1999 to 2004.

Q49. Answer: (b) Dalal Street

The correct answer is Dalal Street

Key Points

• BSE Limited, also known as the Bombay Stock Exchange, Established in 1875 by cotton merchant Premchand Roychand.

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• It is the oldest stock exchange in Asia, and also the tenth oldest in the world.

Additional Information

• BSE is Asia's first and the Fastest Stock Exchange in world with the speed of 6 micro seconds and is one of India's leading exchange groups.

• In 2013, BSE upgraded its technology platform to Bolt Plus, which is based on the business architecture of global giant.

• The BSE is the 8th largest stock exchange with an overall market capitalisation.

• The Indian stock exchange BSE and NSE have been engulfed in a series of corruption scandals such as the 1992 Indian stock market scam and others

Q50. Answer: (d) 16 2/3 %

Given:

Increase in Price of petrol = 20%

Calculation:

Let the price of petrol be Rs.100.

After increasing,

Price of petrol = 100(1 + 20%) = Rs.120

Now, to keep same expenditure, the consumption should be reduced by x% (say).

x = [(120 - 100)/120] × 100

=> x = [20/120] × 100

=> x = 1/6 × 100

=> x = 50/3 = 16 2/3 %

Therefore To keep same expenditure, the consumption should be reduced by 16 2/3 %.

Q51. Answer: (d) 20U22

The pattern followed here is:

On continuing the same pattern, we get,

Hence, ‘20U22’ is the correct answer.

Q52. Answer: (d) 35

The logic followed here is:

(First number in square box)^(1/2) = (Second number in square box)

(Second number in square box) × (Second number in square box + 2) = Number in circle

=>

→ 3 × (3 + 2) = 3 × 5 = 15

=>

→ 4 × (4 + 2) = 4 × 6 = 24

=>

→ 5 × (5 + 2) = 5 × 7 = 35

Hence, option 4) is the correct answer.

Q53. Answer: (a) 720 cm²

Given:

Perimeter of the rhombus = 164 cm

Length of one diagonal = 80 cm

Formula used:

Perimeter of Rhombus = 4 × Side

Side = 1/2 √(d1² + d2²)

Area of rhombus = 1/2 (d1 × d2)

Calculation:

According to the question,

Perimeter of the rhombus = 164 cm

4 × Side = 164

=> Side = 164/4 = 41 cm

Also, d1 = 80 cm (given)

Side = 1/2 √(d1² + d2²)

=> 41 × 2 = √(80² + d2²)

=> d22 = 82²- 80²

=> d22 = 6724 - 6400

=> d22 = 324

=> d2 = 18 cm

Now Area of the rhombus,

Area of rhombus = 1/2 (d1 × d2)

=> A = 1/2 (80 × 18)

=> A = 1440/2 = 720 cm²

Therefore The area of the rhombus is 720 cm2.

Q54. Answer: (b) Ganges-Brahmputra

The correct answer is Ganges-Brahmputra.

Key Points

• Ganges delta, or Ganges-Brahmaputra delta, Region in West Bengal state, India, and Bangladesh.

• It is covered by the network of streams forming the mouths of the Ganges (Ganga) and Brahmaputra rivers.

• The Ganges Delta is a river delta in the Bengal region of South Asia, consisting of Bangladesh and the Indian state of West Benga

• It is the world's largest river delta and it empties into the Bay of Bengal with the combined waters of several river systems, mainly those of the Brahmaputra river and the Ganges river

Additional Information

• The Amazon River in South America is the largest river by discharge volume of water in the world, and the disputed longest river in the world in comparison to the Nile

• The Nile is a major north-flowing river in northeastern Africa. It flows into the Mediterranean Sea. The Nile is the longest river in Africa and has historically been considered the longest river in the world.

• The Congo River, formerly also known as the Zaire River, is the second longest river in Africa, shorter only than the Nile, as well as the second largest river in the world by discharge volume, following only the Amazon

Q55. Answer: (b) Sriperumbudur

The correct answer is Sriperumbudur

Key Points

• Sriperumbudur is a town panchayat in the Kanchipuram district of the Indian state of Tamil Nadu.

• It is located 40 kilometres southwest of the capital city of Chennai on National Highway 4 and is just outside the Chennai Metropolitan Area and part of the Chennai suburban area.

Additional Information

• Satish Dhawan Space Centre - SDSC (formerly Sriharikota Range - SHAR) is a rocket launch centre (spaceport) operated by the Indian Space Research Organisation (ISRO). It is located in Sriharikota in Andhra Pradesh. Sriharikota Range was renamed in 2002 after ISRO's former chairman Satish Dhawan.

• Thumba Equatorial Rocket Launching Station is an Indian spaceport established on 21 November 1963. Operated by the Indian Space Research Organisation, it is located in Thumba, Thiruvananthapuram, Kerala, which is near the southern tip of mainland India, very close to the earth's magnetic equator.

• Dr Abdul Kalam Island, formerly known as Wheeler Island, is an island off the coast of Odisha, India, approximately 150 kilometres east of the state capital Bhubaneswar.

Q56. Answer: (d) 5/12

Given:

3 2/3 + 6 7/12 + 4 9/36 + 5 + 7 1/12 + ? = whole number

Calculation:

According to the question,

3 2/3 + 6 7/12 + 4 9/36 + 5 + 7 1/12

=> 11/3 + 79/12 + 153/36 + 5 + 85/12

=> 11/3 + 79/12 + 85/12 + 153/36 + 5

=> 11/3 + 41/3 + 153/36 + 5

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=> 52/3 + 153/36 + 5

=> (624 + 153 + 180)/36

=> 957/36 = 319/12 or 26 7/12

Now to make it a whole no. the next whole no. is 27 then

=> 26 7/12 + x = 27

=> x = 27 - 26 7/12 = 5/12

Therefore To make the sum a whole number we have to add 5/12.

Q57. Answer: (d) MNOPQ

The logic followed here is:

On continuing the same logic, we get,

Hence, 'MNOPQ' is the correct answer.

Q58. Answer: (a) 16

Given:

Symbols used in a hexadecimal number system

Solution:

The hexadecimal number system is a type of number system, that has a base value equal to 16. It is also pronounced sometimes as 'hex'.

Hexadecimal numbers are represented by only 16 symbols.

These symbols or values are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. Each digit represents a decimal value.

For example, D is equal to base-10 13.

Hexadecimal number systems can be converted to other number systems such as binary numbers (base-2), octal numbers (base-8), and decimal number systems (base-10).

Decimal Numbers	4 - bit Binary Number	Hexadecimal Number
0	0000	0
1	0001	1
2	0010	2
3	0011	3
4	0100	4
5	0101	5
6	0110	6
7	0111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	1111	F

Therefore 16 distinct symbols are used in the hexadecimal number system.

Q59. Answer: (a) Humayun : Mughal

The correct answer is Humayun: Mughal.

Key Points

• Nasir-ud-Din Muhammad, better known by his regnal name, Humayun, was the second emperor of the Mughal Empire, who

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ruled over territory in what is now Eastern Afghanistan, Pakistan, Northern India, and Bangladesh from 1530 to 1540 and again from 1555 to 1556.

• Humayun's most noted achievement was in the sphere of painting.

• His devotion to the early Safavid School, developed during his stay in Iran, led him to recruit Persian painters of merit to accompany him back to India

Additional Information

• Gurū Nānak, also referred to as Bābā Nānak, was the founder of Sikhism and is the first of the ten Sikh Gurus. His birth is celebrated worldwide as Guru Nanak Gurpurab on Katak Pooranmashi, i.e. October–November

• Mahavira also known as Vardhamana, was the 24th Tirthankara of Jainism. He was the spiritual successor of the 23rd Tirthankara Parshvanatha. Mahavira was born in the early part of the 6th century BCE into a royal Kshatriya Jain family in ancient India

• Gautama Buddha was an ascetic and spiritual teacher of ancient India who lived during the 6th or 5th century BCE. He was the founder of Buddhism and is revered by Buddhists as a fully enlightened being who taught a path to Nirvana, freedom from ignorance, craving, rebirth and suffering.

Q60. Answer: (d) 26/15

Given:

41/10 - [21/2 - {5/6 - (2/5 + 3/10)}]

Concept used:

BODMAS:

Calculations:

41/10 - [5/2 - {5/6 - (2/5 + 3/10)}]

=> 41/10 - [5/2 - {5/6 - ((4 + 3)/10)}]

=> 41/10 - [5/2 - (5/6 - 7/10)]

=> 41/10 - [5/2 - (25 - 21)/30]

=> 41/10 - [5/2 - 4/30]

=> 41/10 - ([75 - 4])/30

=> 41/10 - 71/30

=> (123 - 71)/30 = 52/30 = 26/15

Therefore The value of given equation is 26/15.

Q61. Answer: (a) Interpreter

The correct answer is Interpreter

Key Points

The question describes a system program that:

1. Translates an instruction (converts high-level code to machine code).

2. Executes it immediately (line by line).

This matches the definition of an Interpreter:

• Interpreters translate and execute code one instruction at a time.

• Examples: Python, JavaScript, and BASIC use interpreters.

Why Not Other Options?

• Assembler (Option 2):

• Converts assembly language to machine code (does not execute it).

• Works on whole programs, not line by line.

• Compiler (Option 3):

• Translates the entire program at once (does not execute immediately).

• Produces an executable file (e.g., C, C++).

• Operating System (Option 4):

• Manages hardware and software resources but does not translate or execute programs directly

Additional Information

• An operating system (OS) is a program that, after being initially loaded into the computer by a boot program, manages all of the other application programs in a computer.

• The application programs make use of the operating system by making requests for services through a defined application program interface.

• A compiler translates the entire source code in a single run. An interpreter translates the entire source code line by line. It consumes less time i.e., it is faster than an interpreter.

• It consumes much more time than the compiler i.e., it is slower than the compiler. It is more efficient.

Q62. Answer: (d) 6

Given:

The numbers 23, 40, 57 and 108

Calculations:

Let the no. to be subtracted be x. Then,

According to the question,

(23 - x) : (40 - x) :: (57 - x) : (108 - x)

=> (23 - x)/(40 - x) = (57 - x)/(108 - x)

=> (23 - x)(108 - x)=(40 - x)(57 - x)

=> 2484 - 131x + 2x = 2280 - 97 + 2x

=> 34x = 204

=> x = 204/34 = 6

Therefore 6 must be subtracted from each of the numbers 23, 40, 57, and 108 so that the remainders are in proportion.

Q63. Answer: (a) 25

Shortcut Trick

Area covered in 1 revolution = Curved Surface Area (CSA) = $2\pi rh$

Total Area = 96.8 m^2 = 968,000 cm^2 (since 1 m^2 = 10,000 cm^2)

Number of revolutions = Total Area ÷ (2 × 22/7 × r × h)

n = 968,000 ÷ (2 × 22/7 × 77 × 80) = 968,000 ÷ 38,720 = 25

Therefore The correct answer is 25.

Alternate Method

Given:

Radius (r) of the road roller = 77 cm

Width (h) of the road roller = 80 cm

Total Area to be covered = 96.8 m^2

Formula Used:

Area covered in one revolution = Curved Surface Area of the cylinder = $2\pi rh$

Total Area = Number of revolutions (n) × CSA

Calculations:

=> Convert units: Total Area = 96.8 × 10,000 = 968,000 cm^2

=> CSA = 2 × (22/7) × 77 × 80

=> CSA = 2 × 22 × 11 × 80

=> CSA = 44 × 880 = 38,720 cm^2

=> Number of revolutions (n) = Total Area ÷ CSA

=> n = 968,000 ÷ 38,720

=> n = 25

Therefore The correct answer is 25.

Additional Information

Curved Surface Area of Cylinder

The area of the side surface of a cylinder is given by $2\pi rh$, where r is the radius and h is the height/width.

Total Surface Area of Cylinder

The sum of the CSA and the areas of the two circular bases: TSA = $2\pi r(r + h)$.

Volume of a Cylinder

The space occupied by the cylinder is calculated as $V = \pi r^2 h$.

Distance/Area in Revolutions

For a rolling cylinder, Area covered = n × $(2\pi rh)$ and Linear distance covered = n × $(2\pi r)$.

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Q64. Answer: (d) Act of 1935

The correct answer is Act of 1935.

Key Points

• The 1935 Government of India Act was a piece of legislation modified by the British Parliament.

• It called for the creation of all-Indian federations with units made up of provinces and princely states.

• The Reserve Bank of India was to be established under the act.

Additional Information

• The 1919 Government of India Act includes a provision for the handover of power to the Indians.

• The Morley-Minto Reform is also known as the Indian Council Act of 1909.

• The British Parliament passed the Indian Councils Act 1892, which expanded the size of India's legislative councils.

Q65. Answer: (b) Panama Canal

The correct answer is Panama Canal.

Key Points

• The 82 km long Panama Canal, a man-made waterway, separates North and South America by joining the Atlantic and Pacific oceans.

• Among the biggest and most challenging engineering undertakings ever.

• Of the five oceanic regions of the planet, the Pacific Ocean is the largest and deepest.

• Of the five oceans in the world, the Atlantic Ocean is the second-largest.

Additional Information

• Egypt's Suez Canal is a man-made waterway that runs along sea level.

• A 98-kilometre-long freshwater canal in Germany is called the Kiel Canal.

• Greece has a man-made canal called the Corinth Canal.

Q66. Answer: (c) Nambi Narayanan

The correct answer is Nambi Narayanan.

Key Points

• S. Nambi Narayanan is an Indian aerospace engineer, who worked for the Indian Space Research Organisation.

• In 2019, the Government of India bestowed upon him the Padma Bhushan, the third-highest civilian award.

• The Padma Awards are one of the highest civilian honours of India announced annually on the eve of Republic Day.

Additional Information

• UR Rao was an Indian space scientist and former chairman of the Indian Space Research Organisation.

• K Kasturirangan is an Indian space scientist who headed the Indian Space Research Organisation from 2004 to 2003.

• Madhavan Nair is an Indian space scientist and a former chairman of the Indian Space Research Organisation.

Q67. Answer: (a) 98000

Given:

7/9 × 21/5 × 25 (652 – 552)

Concept used:

Calculations:

(7/9) × (21/5) × 25[(652 – 552)]

=> (7/9) × (21/5) × 25[(4225 – 3025)]

=> (7/9) × (21/5) × 25[1200]

=> (7/9) × (21/5) × 30000

=> (147/45) × 30000

=> 3.266 × 30000 = 98000

Therefore The simplified value of the given equation is 98000.

Q68. Answer: (c) Nand Kishore Singh

The correct answer is Nand Kishore Singh.

Key Points

• The Finance Commission is constituted by the President under article 280 of the Constitution.

• The commission's chairman is Nand Kishore Singh, a senior member of the Bharatiya Janata Party since March 2014, with its

full-time members.

• Nand Kishore Singh is an Indian politician, economist and former Indian Administrative Service officer.

Additional Information

• Bimal Jalan is a former Governor of the Reserve Bank of India.

• Ajay Narayan Jha is a 1982 batch Indian Administrative Service officer of Manipur Cadre.

• Shaktikanta Das is currently serving as the 25th governor of the Reserve Bank of India.

Q69. Answer: (c) Dr. Shekhar Mande

The correct answer is Dr. Shekhar Mande.

Key Points

• One of India's leading experts in DNA fingerprinting and diagnostics, Dr. Shekhar Mande assumed the charge on 16th October 2018.

• The Council of Scientific & Industrial Research (CSIR), is known for its cutting-edge R&D knowledge base in diverse S&T areas.

• As of April 2022, there are 38 research laboratories under CSIR in entire India.

Important Points

• Senior scientist Nallathamby Kalaiselvi was on 6 August 2022 appointed as the first woman Director General of the Council of Scientific & Industrial Research (CSIR).

• She succeeds Shekhar Mande, who superannuated in April 2022.

Additional Information

• Samir Kumar Brahmachari is an Indian biophysicist and Former Director General of the Council of Scientific & Industrial Research.

• Dr. RA Mashelkar is an Indian Chemical Engineer, born in the village Mashel in Goa and brought up in Maharashtra.

• Dr. SK Joshi was an Indian physicist.

Q70. Answer: (a) The Prime Minister

The correct answer is The Prime Minister.

Key Points

• The Prime Minister is the Chairman of the NITI Ayog.

• With the expertise and abilities to move quickly, support research and innovation, offer the government a strategic policy vision, and handle unforeseen difficulties, NITI Aayog is becoming into a cutting-edge resource centre.

• Chief Executive Officer of NITI Aayog is Mr. Parameswaran Iyer.

• The Republic of India's head of state is the Prime Minister of India.

• On May 30, 2019, Shri Narendra Modi began his second term as India's prime minister by taking the oath of office.

Additional Information

• The Vice President of India serves as the head of state of the Indian Republic's executive branch.

• As part of their oath of office, the president's primary responsibility is to uphold, defend, and maintain the Indian Constitution and the law.

• The head of the Indian government's ministry of finance is known as the minister of finance.

Q71. Answer: (a) A

The logic followed here is:

1) 8 people - A, B, C, D, E, F, G, H-are sitting at a round table facing each other.

2) A is between E and G, whereas G is sitting second to the right of F.

3) H is between D and B and is second to the left of F

Case (i)

Case (ii)

4) A and B are sitting opposite each other

So, case (i) is eliminated.

So, as we can see A is sitting immediately to the right of G.

Hence, option 1) is the correct answer.

Q72. Answer: (b) Dhaka

The correct answer is Dhaka.

Key Points

• Dhaka is the capital city of Bangladesh, in southern Asia. The city's culture is known for its rickshaws, cuisine, art festivals and religious diversity.

• Sir Mian Muhammad Shafi, a prominent Muslim leader from Lahore suggested the political party be named as 'All India Muslim League'.

• The motion was unanimously passed by the conference, leading to the official formation of the All India Muslim League in Dhaka.

Additional Information

• Modern Karachi was reputedly founded in 1729 as the settlement of Kolachi-jo-Goth during the rule of the Kalhore dynasty.

• The city of Hyderabad was founded by the Qutb Shahi sultan Muhammad Quli Qutb Shah in 1591 CE.

• Lahore was named after Lava, son of the Hindu god Rama, who supposedly founded the city.

Q73. Answer: (d) D

Given:

Building, House, Field

Venn diagram to establish the relationship between Building, House, Field is:

As House is a part of a building, so House will come inside Building.

Field is neither related to building nor to house, so it'll have a separate circle.

Hence, option 4) is the correct answer.

Q74. Answer: (c) MNQ

The logic followed here is:

XYZ

GHI

MNQ

RST

Hence, option 3) is the odd one.

Q75. Answer: (b) Kaziranga National Park

The correct answer is Kaziranga National Park.

Key Points

• Rhinos are a member of any of the five extant species of odd-toed ungulates in the family Rhinocerotidae.

• Kaziranga National Park is a protected area in the northeast Indian state of Assam.

• Kaziranga is regarded as one of the finest wildlife refuges in the world.

Additional Information

• Keibul Lamjao National Park is a national park in the Bishnupur district of the state of Manipur in India.

• Kanha National Park has a significant population of the Royal Bengal tiger, Indian leopards, the sloth bear, barasingha and Indian wild dog.

• Nagarhole National Park is a wildlife reserve in the South Indian state of Karnataka.

Q76. Answer: (c) Rs. 4.000

Given:

Abir sells an article to Kunal at the profit of 15%

Kunal sells it to Amar at the profit of 10%

Amar pays Rs. 5,060

Concept used:

SP = CP(1 + P%)

Calculations:

According to the question,

CP of Amar = SP of Kunal

Then,

SP of Kunal = CP(1 + 10%)

=> 5060 = CP(1 + 0.10)

=> 5060 = CP × 1.10

=> CP = 5060/1.1 = Rs. 4600

CP of Kunal = SP of Abir, Then

=> SP of Abir = CP(1 + 15%)

=> 4600 = CP(1 + 0.15)

=> 4600 = CP × 1.15

=> CP = 4600/1.15 = Rs. 4000

Therefore The original cost price was Rs. 4000.

Q77. Answer: (a) Lord Curzon

The correct answer is Lord Curzon.

Key Points

• Lord Curzon planned to split Orissa and Bihar and join fifteen eastern districts of Bengal with Assam.

• The first Partition of Bengal was a territorial reorganization of the Bengal Presidency implemented by the authorities of the British Raj.

• Administrative convenience was cited as the reason for the partition of Bengal.

• Within India, Curzon has Reappointed Governor-General in August 1904, and he presided over the 1905 partition of Bengal.

Additional Information

• Lord Reading served as Viceroy and Governor General of India from 1921 to 1926.

• Lord Hardinge, was a British diplomat and viceroy of India who improved British relations in India and was instrumental in securing India's support for Great Britain in World War I.

• In 1906, Lord Minto invited all the Muslim leaders to Shimla and proposed the establishment of the Muslim league.

Q78. Answer: (d) VK Yadav

The correct answer is VK Yadav.

Key Points

• The Ministry of Railways along with the Railway Board is housed inside Rail Bhawan in New Delhi.

• The Railway Board function also as a Ministry of the Government of India and exercises all the powers of the Central Government in relation to the Railways.

• V.K. Yadav, Ministry of Railways has been conferred with the prestigious "Eminent Engineer Award for the Year 2020" by the institute of Engineering and Technology.

Additional Information

• Ajay Tyagi is a career Civil Servant with thirty years of experience.

• Mangu Singh was the Managing Director of Delhi Metro Rail Corporation.

• Ashwani Lohani is a retired officer of Indian Railways Service of Mechanical Engineers.

Q79. Answer: (c) Red Fort of Agra

The correct answer is Red Fort of Agra.

Key Points

• The Red Fort of Agra, is a large 16th-century fortress of red sandstone located on the Yamuna River in the historical city of Agra.

• Fort was built under the commission of Emperor Akbar in 1565 and was further built by his grandson Shah Jahan.

• Musamman Burj was built by Shah Jahan for his beloved wife Mumtaz Mahal.

Additional Information

• The Red Fort Complex was built as the palace fort of Shahjahanabad.

• Golconda Fort, is a fortified citadel built by the Qutb Shahi dynasty as the capital of Golconda Sultanate, located in Hyderabad.

• Fatehpur Sikri was built by the Mughal Emperor Jalal-ud-din Mohammad Akbar, in honour of the great Sufi Saint sheikh Salim Chisti.

Q80. Answer: (c) M Venkaiah Naidu

The correct answer is M Venkaiah Naidu.

Key Points

• M. Venkaiah Naidu is the 13th Vice President of India. In the office, 11 August 2017- 10 August 2022.

• The vice president is also a member of the Parliament of India as the ex officio chairman of the Rajya Sabha.

• The Vice President is responsible for the coordination of the activities of the Association.

• The office of vice president is the second-highest constitutional office after the president.

Additional Information

• Meira Kumar was appointed as the first Woman Speaker of Lok Sabha from 2009 to 2014 in the 15th Lok Sabha.

• Sumitra Mahajan is an Indian politician who was the Speaker of Lok Sabha from 2014 to 2019.
• Hamid Ansari is an Indian politician and the 12th vice president of India from 2007 to 2017.

Q81. Answer: (c) 5%

Given:
The interest in two successive years was Rs. 225 and Rs. 236.25
Concept used:
Rate = (SI × 100)/(P × T)
Calculations:
According to the question,
Interest for the first year = 225
Interest for the second year = 236.25
So the difference = 236.25 - 225 = Rs. 11.25
Here 11.25 is the interest on 225 for 1 year
Substituting the values
R = (11.25 × 100)/(225 × 1)
R = 1125/225 = 5%
Therefore The rate of interest is 5%.

Q82. Answer: (a) Energy

The correct answer is Energy.
Key Points
• Energy is the ability to perform tasks.
• It could exist in several different forms, such as potential, kinetic, thermal, electrical, chemical, radioactive, etc.
• The quantity that is transferred to a body or a physical system is called energy.
• The amount of energy expended when a force of one newton is applied across a displacement of one metre is known as a joule.
Additional Information
• The watt (W), which is equal to one joule per second, is the unit of power in the International System of Units.
• The unit of force most frequently measured is "Newtons," or simply "N."
• m/s is the SI unit for velocity (meters per second).

Q83. Answer: (a) Brazil

The correct answer is Brazil.
Key Points
• The FIFA World Cup is an international association football competition contested by the senior men's national teams of the members of FIFA.
• The current final tournament has been used since 1998 and features 32 national teams competing over the course of a month in the host nations.
• Lothar Matthaus is the player with the most games played at the FIFA World Cup.
• The national team of Brazil has won the most soccer World Cup titles of all time with five, winning the tournament in 1958, 1962, 1970, 1994 and, most recently, in 2002.
Additional Information
• France has won two FIFA World Cups, and France was one of the four European teams that participated in the inaugural World Cup in 1930.
• Germany has been to the World Cup more often than any other country with a total of eight times.
• England is one of eight nations to have won the World Cup. England has qualified for the World Cup 16 times.

Q84. Answer: (c) 75 √3 cm2

GIVEN:
Parallel sides are 10 cm and 20 cm respectively
Non- parallel sides are 10 cm
FORMULA USED:
Area of a trapezium = 1/2 × (Sum of parallel sides) × height
CALCULATION:

Here, we have parallel sides = 10 cm and 20 cm
Non- parallel sides = 10 cm
We divide the trapezium into 2 triangles i.e. triangle ADE and triangle BFC and a rectangle namely ABFE
Base of triangle = 20 -10 /2 = 10/2 = 5 cm
Height of the triangle and rectangle (h^2) = $10^2 - 5^2 = 100 - 25 = 75$.
=> h = √75
=> Area of a trapezium = 1/2 × 30 × √75 = 15 × √(25 × 3) = 15 × 5 × √3 = 75 √3 cm^2.
Hence, area of a trapezium is 75 √3 cm^(2 .)

Q85. Answer: (d) 727

Given:
x - 1over x = 5
Formula used:
$(a + b)^2 = a^2 + b^2 + 2ab$
$(a - b)^2 = a^2 + b^2 - 2ab$
Where, a = 1st term, b = 2nd term
CALCULATION:
Here, we have
=> x - 1/x = 5
Now, on squaring, we get
=> $(x - 1/x)^2 = 5^2$
=> $x^2 + 1/x^2 - 2 \times x \times 1/x = 25$
=> $x^2 + 1/x^2 = 27$
Now, on squaring again, we get
=> $(x^2 + 1/x^2)^2 = 27^2$
=> x^4 + 1/x^4 + 2 × x^2× $1/x^2$ = 729
=> x^4 + 1/x^4 = 729 - 2 = 727.
Hence, the value of x^4 + 1/x^4 is 727.

Q86. Answer: (b) 133.33 W

Given:
In 5 years consumption of electricity (GW) the by population has been given
Calculation:
Here, we have in the year 2016,
Population in Million = 30.
Consumption of electricity in (GW) = 40 GW
As, 1 GW = 100 million watt
=> 40 GW = 40 × 100 = 4000 million watt.
Consumption of electricity per person = 4000/30 = 133.33 W.
Hence, the consumption of electricity per person is 133.33 W.

Q87. Answer: (d) 300%

Given:
In 5 years Consumption of electricity in GW by population (in million)
Calculation:
Consumption of electricity (GW) in 2015 = 25
Consumption of electricity (GW) in 2019 = 100
=> Increase in consumption = 100 - 25 = 75.
=> Percentage increase = (75/25) × 100 = 300%.
Hence, the percentage increase is 300%.

Q88. Answer: (b) 2017

Given:

In 5 years consumption of electricity in GW by the population in millions.

Calculation:

In 2015 consumption of electricity in GW = 25

In 2016, the consumption of electricity in GW = 40

=> Increase in consumption = (40 - 25) = 15

=> Percentage increase = (15/25) × 100 = 60%

In 2017 consumption of electricity in GW = 60

=> Increase in consumption from 2016 = (60 - 40) = 20

=> Percentage increase = (20/40) × 100 = 50%.

In 2018 consumption of electricity in GW = 80

=> Increase in consumption from 2017 = (80 - 60) = 20

=> Percentage increase = (20/60) × 100 = 33.33%.

In 2019 consumption of electricity in GW = 100

=> Increase in consumption from 2018 = (100 - 80) = 20

=> Percentage increase = (20/80) × 100 = 20 %.

Hence, in the year 2017, the consumption of electricity grows by 50%.

Q89. Answer: (b) Increased between 2015 and 2019

Given:

In 5 years consumption of electricity in GW by the population in millions

Calculation:

In 2015 consumption of electricity per person = (2500/20) = 125 (As 1 GW = 100 Million watt)

Likewise, In 2016 consumption of electricity per person = 133.33

In 2017 consumption of electricity per person = 150

In 2018 consumption of electricity per person = 160

In 2019 consumption of electricity per person = 166.67

Since, we can see that consumption of electricity per person is increasing constantly

Now,

Considering option (1),

Decreased between 2015 - 2019 → It is incorrect as we have seen above that consumption increased constantly.

Considering option (2),

Increased between 2015 - 2019 → It is correct as consumption increased constantly.

Now, consumption in 2015 per person = 125

Consumption in 2019 per person = 166.67

=> Increased in consumption = (166.67 - 125) = 41.67

=> Percentage = (41.67/125) × 100 = 33.33 %

Now, considering option (3), we have

Increased by more than 40% in 2019 as compared to 2015 → It is incorrect as an increase is only 33.33%.

In considering option (4), we have

Neither increased nor decreased between 2015 - 2019 → It is incorrect as consumption per person increased by 33.3%.

Hence, option (2), i.e. consumption of electricity per person increased between 2015 and 2019 is true.

Q90. Answer: (d) 50

Given:

216 ÷ 6 + 6 × 4 - 10

Formula Used:

BODMAS

B	Brackets in order	(), {}, []
O	Of	Of

D	Division	÷
M	Multiplication	×
A	Addition	•
S	Subtraction	•

CALCULATION:
Here, we have 216 ÷ 6 + 6 × 4 - 10
Now, apply the BODMAS rule,
=> 36 + 6 × 4 - 10
=> 36 + 24 - 10
=> 60 - 10 = 50.
Here, the required value is 50.

Q91. Answer: (b) SZAKD

The pattern followed here is:
In RAT → QZS
Similarly,
In TABLE →
We get 'SZAKD'
Hence, Option 2) is the correct answer.

Q92. Answer: (c) W

The pattern followed here is:
Letters are increasing in the order +3.
On continuing the pattern, we get,
Hence, 'W' is the correct answer.

Q93. Answer: (d) 217

Given:
9, 26, 65, 124, ?
The logic followed here is:
Each term is a cube of increasing term with +1 and -1 alternatively.
The pattern followed in the given series is:
Hence the correct answer is option 4).

Q94. Answer: (c) Knight

The option that represents the correct order of the given words as they would appear in an English dictionary is shown below:
=> Keen < Keep < King < Kite < Knight
Hence, 'Knight' is the correct answer.

Q95. Answer: (a) 180

The solution is in Hindi. Read it online.

Q96. Answer: (a) 512

The pattern followed by the given pair is:
(First term)^3 = Second term
We apply the pattern on the pairs:
5 : 125 : : 8 : ?
$(5)^3$ = 125
125 = 125
5 : 125 : : 8 : ?
(8)3 = ?
512 = Answer

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Hence the correct answer is option 1)

Q97. Answer: (b) 12

The logic followed here is:

First digit of number = Product of both numbers

Second digit of number = Addition of both numbers

•

• Product of both numbers = 3 × 3 = 9 (First digit)

• Addition of both numbers = 3 + 3 = 6 (Second digit)

• Number formed = 96

•

• Product of both numbers = 2 × 2 = 4 (First digit)

• Addition of both numbers = 2 + 2 = 4 (Second digit)

• Number formed = 44

• Similarly,

• Product of both numbers = 1 × 1 = 1 (First digit)

• Addition of both numbers = 1 + 1 = 2 (Second digit)

• Number formed = 12

Hence, option 2) is the correct answer.

Q98. Answer: (b) Sister's daughter

Preparing the family tree using the following symbols:

• A is the daughter of B.

• B is the husband of C.

• C is the sister of D.

So, A is the D's sister's daughter.

Hence, 'Option 2)' is the correct answer.

Q99. Answer: (a) D

The logic followed here is:

As Chicken is a part of Non-vegetarian food, so Chicken will come inside Non-vegetarian food.

Vegetarian food is neither related to Chicken nor to Non-vegetarian food, so it'll have a separate circle.

Hence, option 1) is the correct answer.

Q100. Answer: (c) Only conclusion 1 follows.

Statement:

Most students have charismatic personalities.

Venn diagram:

Conclusions:

1. Some students have charismatic personalities. → Follows (because most students have charismatic personalities.)

2. All students have charismatic personalities. → Does not follow (because most students have charismatic personalities, not all students.)

Hence, “Only conclusion 1 follows.”.

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