RRB NTPC CBT-I Official Paper (Held On: 31 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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Scan the QR code or click the link to open it.

Q1. The sum of the present ages of Aditi, Aditya and Aadya is 120 years. Then what was the sum of their ages 3 years ago?

(a) 118
(b) 112
(c) 114
(d) 111

Q2. Find the minimum value of x which makes 136/(x-4) an integer.

(a) 72
(b) -132
(c) 140
(d) -268

Q3. The difference between the selling prices of an article at a profit of 14% and a loss of 10% is Rs. 60. Find the purchase price of the item.

(a) Rs. 240/-
(b) Rs. 250/-
(c) Rs. 235/-
(d) Rs. 225/-

Q4. If simple interest is provided annually on a sum invested for five years and the amount payable on maturity after the end of the five years period is Rs. 2,340. However, if the money had been invested only for two years, the amount payable on maturity would have been Rs. 2016. What was the original amount invested?

(a) Rs. 1800/-
(b) Rs. 1750/-
(c) Rs. 2000/-
(d) Rs. 1600/-

Q5. Sunrise in the easternmost Arunachal Pradesh occurs how many hours before sunrise in the westernmost Gujarat?

(a) Two hours
(b) One hour
(c) One and a half hours
(d) Two and a half hours

Q6. India's first lunar mission, Chandrayaan-1, ended on _____ due to loss of communication with the spacecraft.

(a) 15 August 2009
(b) 29 August 2009
(c) 5 September 2009
(d) 28 July 2009

Q7. The RAM in a computer is located in _____.

(a) Output devices
(b) Motherboard
(c) Input devices
(d) External memory

Q8. India has the longest international land border with _____.

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

Q9. _____ gas emitted from chlorofluorocarbons is harmful to the ozone layer.

(a) Chlorine
(b) Hydrogen
(c) Hydrogen Sulfide
(d) nitrogen dioxide

Q10. As per information received till November 2020, who is the Chairperson of the National Green Tribunal (NGT) of India?

(a) Justice L S Pant
(b) Justice S K Singh
(c) Justice Adarsh Kumar Goel
(d) Justice Swatanter Kumar

Q11. When did Lord Clive finally return to England from India?

(a) In 1765
(b) In 1767
(c) In 1764
(d) In 1766

Q12. A sum invested for 4 years at 5% simple interest becomes Rs. 150/- on maturity. Find the amount invested.

(a) Rs. 180/-
(b) Rs. 120/-
(c) Rs. 175/-
(d) Rs. 125/-

Q13. What is the narrow area where land, water and air meet called?

(a) Biosphere
(b) Hydrosphere
(c) Environment
(d) Atmosphere

Q14. Before the present premises, where did the Supreme Court of India operate from?

(a) From the High Court of Delhi
(b) From the parliament building
(c) From the President's residence
(d) From the Red Fort

Q15. Solve the following.

176 + 17.6 + 1.76 + 0.176 + 0.0176 = ?

(a) 195.5356
(b) 195.5556
(c) 195.5336
(d) 195.5536

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Q16. Of the four words listed below, three are consistent in some manner and one is inconsistent. Select the inconsistent one.

Jio, Vodafone, Airtel, Amazon

(a) Amazon
(b) Airtel
(c) Vodafone
(d) Jio

Q17. Which of the following statements regarding Coriolis Force is incorrect?

(a) It arises due to difference in atmospheric pressure.
(b) It is maximum at the poles.
(c) This does not happen at the equator.
(d) It is directly proportional to the angle of latitude.

Q18. Of the residents of a housing society, 13/18 own cars and among those who own cars, 48/65 have purchased cubby parking space. If 136 residents park in the open, then how many total residents live in the society?

(a) 900
(b) 650
(c) 720
(d) 630

Q19. The magnificent temple of Khajuraho was built by _____ rulers.

(a) Solanki
(b) Chauhan
(c) Chandel
(d) Parmar

Q20. Sonam was given some money for her travel expenses during a 15 day sales campaign. However, he had to overstay by 9 days and as a result his average daily traveling allowance was reduced by Rs. 75. How much amount was initially sanctioned for it?

(a) Rs. 2,750
(b) Rs. 3,000
(c) Rs. 2,700
(d) Rs. 2,850

Q21. Dhalo is a popular religious folk dance of _____.

(a) Chhattisgarh
(b) Manipur
(c) Arunachal Pradesh
(d) Goa

Q22. Who won the title of "ICC Men's Test Cricketer of the Decade" in December 2020?

(a) Steve Smith
(b) David Warner
(c) Virat Kohli
(d) Kane Williamson

Q23. Which of the given numbers is not a perfect square?

(a) 16,384
(b) 41,616
(c) 97,344
(d) 23,102

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Q24. What is the full form of FTP?

(a) Fast Transfer Program
(b) File Transfer Protocol
(c) File Transfer Program
(d) Fast Transfer Protocol

Q25. A sum of Rs. 100 was invested for two years at 10% compound interest per annum. If the rate of interest is increased to 20% for the same period, how much more will the investor get as interest?

(a) Rs. 22/-
(b) Rs. 23/-
(c) Rs. 24/-
(d) Rs. 20/-

Q26. If the volume of a sphere is given as 4851 cm^3, find its diameter. [Take $\pi = 22/7$]

(a) 21 cm
(b) 10.5 cm
(c) 42 cm
(d) 28 cm

Q27. Which of the following metals exists in liquid state?

(a) Calcium
(b) Potassium
(c) Sodium
(d) Mercury

Q28. What is the full form of EDD in banking sector?

(a) Enhanced Due Diligence
(b) Extended Deposit Diligence
(c) Enhanced Deposit Diligence
(d) Extended Due Diligence

Q29. The perimeter of a rectangle is 96 m and its length is 27 m. Find its width.

(a) 42 m
(b) 21 m
(c) 48 m
(d) 69 m

Q30. If $x + 1/x = 3$, then find the value of $x^3 + 1/(x^3)$.

(a) 36
(b) 18
(c) 9
(d) 27

Q31. Which of the following cannot be the LCM of 3, 4 and x?

(a) 60
(b) 24
(c) 36
(d) 18

Q32. As per information received till November 2020, who is the Chairman of Central Pollution Control Board (CPCB)?

(a) T K Joshi
(b) Ashok Agarwal
(c) Anil Kumar Gupta
(d) Shiv Das Meena

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Q33. Who is the author of 'Harshacharita'?

(a) Banabhatta
(b) Pānini
(c) Kalidasa
(d) Kalhana

Q34. Find the sum of prime numbers between 50 and 60.

(a) 110
(b) 118
(c) 112
(d) 114

Q35. Six girls are sitting in a circle facing each other. Hina is sitting to the right of Mehak. Ila is to the right of Hina. Seema is on the left of Mehak, Rani is sitting between Seema and Priya. Where is Priya sitting?

(a) between Ila and Rani
(b) between Seema and Ila
(c) between Rani and Seema
(d) between Hina and Mehak

Q36. Who among the following is not a part of the Indian Parliament?

(a) State Council
(b) President
(c) Lok Sabha
(d) Legislative Council

Q37. All six faces of a cube are painted with different colors – violet, indigo, blue, green, yellow and orange.

On the opposite side of the green page is the purple page.

The blue page is between the green and purple pages.

The orange page is adjacent to the yellow page.

Indigo page is adjacent to orange page.

If the green page is at the bottom, what is the color of the upper page?

(a) Green
(b) Purple
(c) Indigo
(d) Blue

Q38. Parvez leaves his office at 6 pm every day and reaches home at 7:30 pm. One day he left his office at 6 pm, but he covered one-fourth of the distance at 4/5 paces of his usual walk. If Parvez succeeded in reaching home on time, he covered the remaining part of the journey at how many times his normal speed?

(a) 12/11
(b) 16/15
(c) 10/9
(d) 6/5

Q39. When did the Indian Government launch the Digital India program to connect rural areas with high-speed Internet networks and improve digital literacy?

(a) 25 September 2014
(b) 1 July 2015
(c) 25 June 2016
(d) 15 July 2017

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Q40. According to the information received till March 2017, what is the length of the Indian Railways railway track?

(a) 69,368 km
(b) 66,368 km
(c) 67,368 km
(d) 63,768 km

Q41. When will Halley's Comet be visible now?

(a) 2055
(b) 2070
(c) 2075
(d) 2061

Q42. Name the largest milk producing country in the world.

(a) USA
(b) China
(c) England
(d) India

Q43. Which of the following is a micronutrient used for crop plants?

(a) Potassium
(b) Magnesium
(c) Iron
(d) Calcium

Q44. Hampi was the capital of the _____ Kingdom.

(a) Cholas
(b) Vijayanagar
(c) Parmar
(d) Rashtrakutas

Q45. Which of the following countries has more than one standard meridian?

(a) USA
(b) Japan
(c) India
(d) Afghanistan

Q46. Express 32 : 20 in its lowest form.

(a) 8 : 10
(b) 16 : 10
(c) 8 : 5
(d) 24 : 15

Q47. Which equipment is mainly used in military submarines?

(a) Microscope
(b) Endoscope
(c) Periscope
(d) Telescope

Q48. In a computer game, a builder can construct a wall in 20 hours, while a destroyer can completely demolish this wall in 50 hours. Both builders and destroyers were initially assigned to work on flat ground. But after 30 hours the destroyer was removed. How much time did it take to build the wall?

(a) 32 hours 20 minutes
(b) 32 hours 40 minutes
(c) 32 hours
(d) 33 hours 20 minutes

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Q49. A rectangle with sides 34 cm and 18 cm is reconstructed to form a rhombus, whose perimeter is equal to that of the rectangle and one of its angles is 120°. Find the area of the rhombus in cm^2.

(a) 169 √3
(b) 338 √3
(c) 338√3/3
(d) 169√3/3

Q50. Rockets work on the principle of conservation of _____.

(a) Mass
(b) Energy
(c) Momentum
(d) Speed

Q51. Select the letter that can come in place of the question mark (?) in the category given below?

R, W, B, G, L, ?

(a) S
(b) Q
(c) U
(d) C

Q52. Who was the first Muslim President of the Indian National Congress?

(a) Badruddin Tyabji
(b) Dadabhai Naoroji
(c) Nawab Syed Muhammad Bahadur
(d) Abul Kalam Azad

Q53. Pointing to a picture of a girl, Meera said, “She is the daughter of my mother's only daughter”. How is Meera related to that girl?

(a) Sister
(b) Sister of mother
(c) Mother
(d) Daughter of sister

Q54. Find the value of (text cos 41)/sin49 + (sin 51)/(cos 39).

(a) 4
(b) 1
(c) 2
(d) 0

Q55. Select the number from the given options that can come in place of the question mark (?) in the series given below?

P, 15, T, 19, X, ?

(a) 23
(b) 21
(c) 22
(d) 24

Q56. If A × B = A is the brother of B, A / B = A is the mother of B and A + B = A is the daughter of B, then in L / M × N + O, who is the father?

(a) N
(b) L
(c) O
(d) M

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Q57. In which of the following Vedas is the knowledge related to music collected?

(a) Yajurveda
(b) Atharvaveda
(c) Samveda
(d) Rigveda

Q58. Find the sum of 5/2 and 2/5.

(a) 7/7
(b) 20/7
(c) 10/7
(d) 29/10

Q59. National Waterway - 3 of India is located in which state?

(a) Karnataka
(b) Tamil Nadu
(c) Andhra Pradesh
(d) Kerala

Q60. 14 men can build a wall in 12 days. In how many days will another group of 7 persons, each of whom is only one fourth as efficient as the persons of the first group, complete the construction work of this wall?

(a) 96 Days
(b) 108 Days
(c) 120 Days
(d) 84 Days

Q61. What is the number of valence electrons in a graphite atom?

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

Q62. If the pH value of river water is _____, then its water is considered to be polluted by acidic waste.

(a) Zero
(b) Less than 7
(c) Exact 7
(d) More than 7

Q63. What is the primary source of energy in plants?

(a) Glucose
(b) Protein
(c) Sunlight
(d) Chlorophyll

Q64. Dhoopgarh is the highest peak of the _____ mountain range.

(a) Satpura
(b) Aravalli
(c) Vindhya
(d) Ajanta

Q65. Which of the following actors has been appointed as the brand ambassador of RBI's public awareness campaign?

(a) Akshay kumar
(b) Shahrukh khan
(c) Amitabh Bachchan
(d) Aamir khan

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Q66. In a certain code language, 15789 is written as XTZAL and 2346 is written as NPSU. How will 98216 be written in that code language?

(a) LAXUN
(b) LAXNU
(c) LANUX
(d) LANXU

Q67. Study the pattern given below carefully and select the number from the options that will come in place of the question mark (?) in it?

18	**25**	**31**
17	18	7
16	20	12
19	?	26

(a) 21
(b) 24
(c) 23
(d) 25

Q68. Where will the Maha Kumbh 2021 be organized?

(a) Ujjain
(b) Prayag
(c) Nashik
(d) Haridwar

Q69. If the code for UNSCRAMBLE is GPXYTFNDZV, then what will be the code for MARBLES?

(a) GPTDVZX
(b) NFTDZVX
(c) SXYZVNP
(d) YNTVFXR

Q70. As of October 2020, Dutee Chand, the national record holder in the 100m women's sprint event, completed the race in _____ seconds.

(a) 13.52
(b) 11.22
(c) 10.34
(d) 12.50

Q71. Queen Padmavati is related to which city?

(a) Chittaurgarh
(b) Pushkar
(c) Jodhpur
(d) Udaipur

Q72. Solve the following.

$54 + [19 - \{15 - (6 - 16 \div 4 \times 8)\}] = ?$

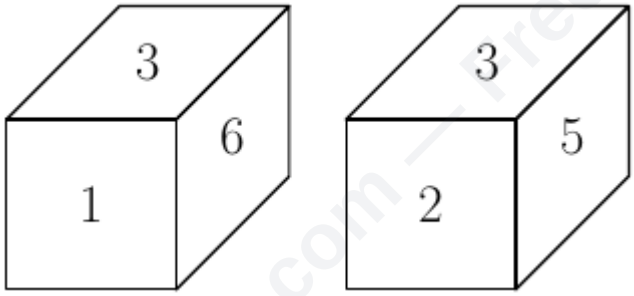
(a) 40
(b) 32
(c) 58
(d) 62

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Q73. There are three positive integers a, b and c such that their average is 35 and a ≤ b ≤ c. If the median is (a + 18), then find the minimum possible value of c.

(a) 39
(b) 40
(c) 42
(d) 41

Q74. Two different positions of the same dice are shown. Which number will be on the page opposite to 6?



(a) 2
(b) 5
(c) 3
(d) 4

Q75. Read the statements given below carefully and state which of the following conclusions is correct in the context of the statements.

statement:

I. Last Sunday, on the 15th of the month, there was a crowd of tourists at the Taj Mahal.

II. The authorities have decided to keep the Taj Mahal closed for repairs from the 17th of the month.

(a) Statement I is the cause, and Statement II is its effect.
(b) Statement I and Statement II are effects of a common cause.
(c) Statement II is the reason, and statement I is an effect.
(d) Statement I and Statement II are different reasons.

Q76. Solve the following.

15% of 22 = ?

(a) 3.2
(b) 3.5
(c) 3.3
(d) 3.4

Q77. How many ministers can be included in the Central Council of Ministers?

(a) Fifty percent of the total members of the Lok Sabha
(b) Fifteen percent of the total members of the Lok Sabha
(c) Ten to fifteen percent of the total number of members of the Lok Sabha
(d) As desired by the Prime Minister of India

Q78. Of the four words listed below, three are consistent in some manner and one is inconsistent. Select the inconsistent one.

Black pepper, cardamom, onion, cloves

(a) cardamom
(b) cloves
(c) onion
(d) Black pepper

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Q79. If 288/x and 108/x are natural numbers, then what will be the maximum value of x?

(a) 48
(b) 42
(c) 36
(d) 54

Q80. Rahul had to appear for four subjects. The marks in each of the first three subjects were 50, in which Rahul scored an average of 60% marks. In the fourth and last subject, Rahul scored 54 marks and his total marks percentage became 64%. What was the marks for the fourth subject?

(a) 60
(b) 84
(c) 80
(d) 75

Q81. How many factors of $2^7 \times 3^3 \times 5^4 \times 7$ are even numbers?

(a) 320
(b) 40
(c) 280
(d) 84

Q82. The square root of 90 will lie between _____.

(a) 10 and 11
(b) 9 and 10
(c) 7 and 8
(d) 8 and 9

Q83. Select the option which has the same relationship with the third word as the second word has with the first word.
Rabbit : Burrow :: Sparrow : ?

(a) Nest
(b) Feather
(c) Tree
(d) Beak

Q84. Points A, B and C lie on a circle with centre. If angle ACB = 46.5°, then find the measure of angle AOB on the minor segment AB.

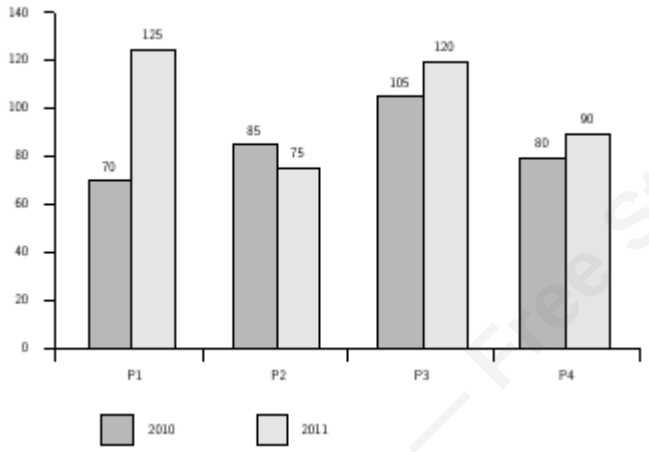
(a) 94°
(b) 90°
(c) 93°
(d) 92°

Q85. If $\sin x - 3\cos x = \sqrt{3}\cos x$, then find the value of cot x.

(a) $3 - \sqrt{3}$
(b) $\sqrt{3}$
(c) $(3 - \sqrt{3})/6$
(d) $3 + \sqrt{3}$

Q86. The graph given below shows the sales of books (in thousands) of four branches of ABC Publishing Company in two consecutive years. What is the ratio of the total sales of branch P2 for both the years to the total sales of branch P4 for both the years?

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(a) 61 : 71
(b) 17 : 16
(c) 16 : 17
(d) 71 : 61

Q87. A son-in-law remembers that his mother-in-law's birthday definitely falls before the twentieth of August, while his wife remembers that she celebrated her mother's birthday definitely after the eighteenth of August and before the twenty-second of August. Considering both of them correct, tell on which date is the birthday of that person's mother-in-law?

(a) 19 August
(b) 20 August
(c) 18 August
(d) 21 August

Q88. Study the table given below, which shows the expenditure of the company SRT under different heads from the year 1998 to 2002, and answer the following question?

Year	Procurement	Production	Marketing	Interest on Loan	Tax
1998	185	78	45	23.9	56.3
1999	274	89	56	34.6	62.2
2000	163	95	53	44.8	51.7
2001	252	104	67	37.6	76.9
2002	241	123	49	29.4	84.3

References: year, procurement, production, marketing, interest on loan, tax

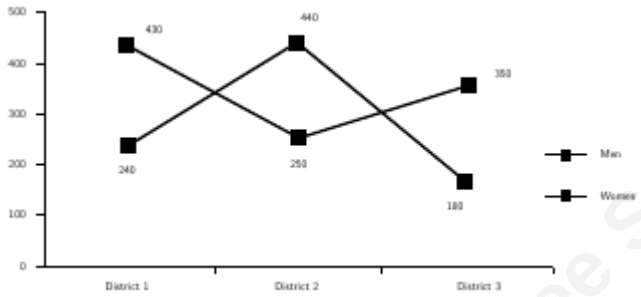
The total expenditure on marketing of SRT Company during the given period was approximately what percent of the total expenditure on procurement?

(a) 24%
(b) 313%
(c) 32%
(d) 413%

Q89. Study the given graph and answer the question related to it.

The graph displays details related to the number of men and women, in three districts.

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Based on the given numbers, if the men from District 1 are equally distributed to District 2 and District 3 in such a way that the ratio of men to women in District 1 becomes 1 : 1, what will be the new collective ratio of men to women in Districts 2 and 3?

(a) 62 : 79
(b) 27 : 20
(c) 79 : 62
(d) 20 : 27

Q90. Select the number from the given options that can come in place of the question mark (?) in the series given below?

31, 68, 41, 84, 47, 100, ?

(a) 79
(b) 67
(c) 59
(d) 61

Q91. Study the pattern given below carefully and select the number from the options that will come in place of the question mark (?) in it?

4	6	7	46
6	8	8	70
3	5	6	?

(a) 33
(b) 94
(c) 21
(d) 23

Q92. Consider the statement given below and state which of the following assumption/assumptions is/are implicit in this statement?

Statement:

“Business class tickets have been priced at Rs. 50,000, which is very high.”

Assumptions:

1. The prices of tickets for other classes have been kept reasonable.
2. Rs. 50,000 is a huge amount to pay for a business class ticket.

(a) Only assumption 2 is implicit.
(b) Both Assumption 1 and Assumption 2 are implicit.
(c) Either Assumption 1 is implicit or Assumption 2 is implicit.
(d) Only assumption 1 is implicit.

Q93. Of the four words listed below, three are consistent in some manner and one is inconsistent. Select the inconsistent one.

gratitude, patience, honesty, greed

(a) patience
(b) honesty
(c) greed

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(d) gratitude

Q94. Select the option which has the same relationship with the third term as the other term with the first term.

Doctor : Disease :: Police : ?

(a) Law
(b) Discipline
(c) Crime
(d) Force

Q95. Select the number from the given options that can come in place of the question mark (?) in the series given below?

113, 127, 131, 137, 139, 149, ?

(a) 175
(b) 163
(c) 159
(d) 151

Q96. The cost of two bus tickets from city P to Q and three bus tickets from city P to R is Rs. 99, but the cost of three bus tickets from city P to Q and two bus tickets from city P to R is Rs. 91.

Then what is the fare from city P to Q and city P to R respectively?

(a) Rs. 51, Rs. 32
(b) Rs. 32, Rs. 51
(c) Rs. 23, Rs. 15
(d) Rs. 15, Rs. 23

Q97. If NEPAL is written as 14516112 in a code language, then how will INDIA be written in that code language?

(a) 914491
(b) 149149
(c) 994411
(d) 114499

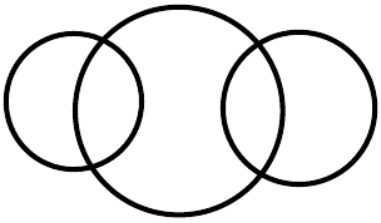
Q98. R, S and T represent people who like Rose, Sunflower and Tulip respectively. The number of people is R = 10, S = 12 and T = 16. There are 3 people who like Rose, Sunflower and Tulip. 2 of them like Rose and Sunflower. 3 people like Rose and Tulip, and 4 people like Sunflower and Tulip. Then what is the number of people who like only Rose?

(a) 14
(b) 6
(c) 12
(d) 2

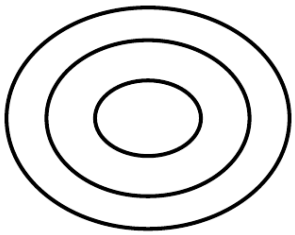
Q99. Select the Benn diagram that best represents the relationship between the following classes?

Solar system, Planet, Universe

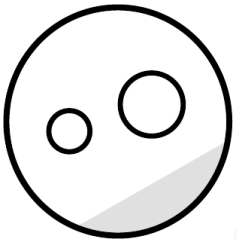
(a)



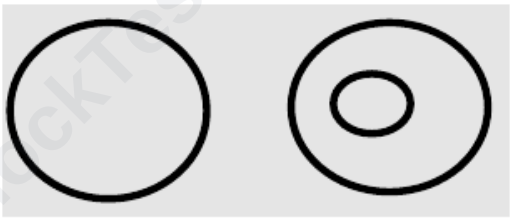
(b)



(c)



(d)



Q100. Read the statements given below carefully and state which conclusion logically follows the statements.

statement :

(1) Some deer are parasites.

(2) All parasites are avocado.

(a) All deer are parasites.

(b) All avocados are parasites.

(c) Some deer are avocado.

(d) There are no parasites, avocado.

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) 111

Given:

The sum of the present ages of Aditi, Aditya and Aadya is 120 years.

Formula used:

Sum of ages 3 years ago = Present sum of ages - 3 × Number of people

Calculation:

Sum of ages 3 years ago = 120 - 3 × 3

=> Sum of ages 3 years ago = 120 - 9

=> Sum of ages 3 years ago = 111

Therefore The correct answer is option 4.

Q2. Answer: (b) -132

Given:

Expression: 136 / (x - 4)

Condition: The result must be an integer.

Formula used:

x - 4 must be a divisor of 136.

Calculation:

Divisors of 136: ±1, ±2, ±4, ±8, ±17, ±34, ±68, ±136

To minimize x, choose the smallest negative divisor:

x - 4 = -136

=> x = -136 + 4

=> x = -132

Therefore The minimum value of x is -132, which corresponds to option 2.

Q3. Answer: (b) Rs. 250/-

Given:

The difference between the selling prices of an article at a profit of 14% and a loss of 10% is Rs. 60.

Formula used:

Let the purchase price be P.

Selling Price at 14% profit = P + 0.14P = 1.14P

Selling Price at 10% loss = P - 0.10P = 0.90P

Difference = 1.14P - 0.90P = 0.24P

Calculation:

0.24P = 60

=> P = 60 / 0.24

=> P = 250

Therefore The correct answer is option (2).

Q4. Answer: (a) Rs. 1800/-

Given:

Final amount after 5 years (A5) = Rs. 2340

Final amount after 2 years (A2) = Rs. 2016

Time periods: t1 = 5 years, t2 = 2 years

Formula used:

Simple Interest (SI) = (Principal × Rate × Time) / 100

Final Amount (A) = Principal + Simple Interest

Calculation:

Difference in final amounts (A5 - A2) is the simple interest for 3 years:

Simple Interest for 3 years = Rs. 2340 - Rs. 2016 = Rs. 324

Let the original principal amount be P and the rate of interest be R.

Using the formula for SI over 3 years:

SI = (P × R × 3) / 100

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324 = (P × R × 3) / 100
=> P × R = (324 × 100) / 3 = Rs. 10,800
Now, using the 2-year maturity formula:
A2 = P + (P × R × 2) / 100
2016 = P + (P × R × 2) / 100
=> 2016 = P × (1 + (R × 2) / 100)
Substitute P × R = 10,800:
=> 2016 = P × (1 + (10,800 × 2) / (100 × P))
=> 2016 = P × (1 + 216 / P)
=> 2016 = P + 216
=> P = 2016 - 216
=> P = Rs. 1800
Therefore The original amount invested was Rs. 1800.
Alternate MethodCalculation:
Problem Breakdown:
The formula for Simple Interest (SI) is:
SI = (Principal (P) × Rate (R) × Time (T)) / 100
Given:
Amount = Principal + SI for 5 years
2340 = P + SI for 5 years
2016 = P + SI for 2 years
SI for 5 years - SI for 2 years = Rs. 2340 - Rs. 2016 = Rs. 324
Thus, Simple Interest for 3 years = Rs. 324.
Amount for 5 years = Rs. 2340
Amount for 2 years = Rs. 2016
Difference in amounts:
Step-by-Step Solution:
Step 1: Find annual SI
SI for 1 year = SI for 3 years / 3 = 324 / 3 = Rs. 108
Step 2: Find total SI for 5 years
SI for 5 years = Rs. 108 × 5 = Rs. 540
Step 3: Calculate Principal
Amount = Principal + SI for 5 years
2340 = P + 540
P = 2340 - 540 = Rs. 1800
Final Answer:
The original amount invested was Rs. 1800.

Q5. Answer: (a) Two hours

The correct answer is Two Hours.
Key Points
• The longitudinal extent between Gujarat and Arunachal Pradesh, the two extreme western and eastern states of the country respectively, is about 30°.
• It is due to this factor, that the time lag between the two states is two hours.
• Earth rotates 360 degrees in 24 hours.
• So, it moves around 15 degrees in 1 hour.
• Using this, we can say that it would move 30 degrees in two hours which is the answer.
• Sun rises earlier in Arunachal Pradesh as compared to Gujarat.
• The Indian Standard Time is taken from the time of Standard Meridian of India.
• This is the reason why despite the time lag of sunrise and sunset, both show the same timings.
Additional Information
• 1 degree of longitude is equal to 4 minutes.

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• 15-degree longitude is 1 hour.
• One degree of latitude is 111 km on Earth's surface.
• When one crosses the International Date Line, the day and date changes.
• When one crosses IDL to the west, one loses the day.
• When one goes from west to east, one gains a day.
• Russia has the highest number of time zones.
• The prime meridian passes through Greenwich in England which is zero degrees longitude.
• Opposite of prime meridian is IDL which is at 180-degree longitude.
• IDL is a zigzag line and passes through Bering Strait.

Q6. Answer: (b) 29 August 2009

The correct answer is 29 August 2009

Key Points

• India's first lunar mission, Chandrayaan-1, ended on August 28, 2009 due to a loss of communication with the spacecraft
• It was launched on October 22, 2008
• Chandrayaan-1 is India’s first lunar probe developed by the Indian Space Research Organisation (ISRO).
• The spacecraft is a very small cube about 1.5 meters on each side i.e about half the size of a smart car.
• The spacecraft was orbiting around the Moon at a height of 100 km from the lunar surface for chemical, mineralogical, and photo-geologic mapping of the Moon.
• The spacecraft carries 11 scientific instruments built in India, the USA, UK, Germany, Sweden, and Bulgaria.

Additional Information

• The idea of undertaking an Indian scientific mission to Moon was initially mooted in a meeting of the Indian Academy of Sciences in 1999.
• The Chandrayaan-1 mission performed high-resolution remote sensing of the moon in visible, near-infrared (NIR), low energy X-rays, and high-energy X-ray regions.
• After the successful completion of all the major mission objectives, the orbit has been raised to 200 km during May 2009.
• On 22 July 2019, India launched Chandrayaan-2, its second lunar exploration mission after Chandrayaan-1 from Satish Dhawan Space Centre, Sriharikota.

Q7. Answer: (b) Motherboard

The correct answer is Mother Board.

Key Points

• RAM is located in Motherboard.
• A motherboard is a printed circuit board and foundation of a computer that is the biggest board in a computer chassis.
• The motherboard is the largest board in a computer's chassis and is responsible for connecting all the computer's components
• It allocates power and allows communication to and between the CPU, RAM, and all other computer hardware components.
• It is the backbone of a computer and ties all components together.

Additional Information

• Random Access Memory (RAM)
• It stores data that the computer needs to use temporarily.
• It is a volatile memory i.e. the data disappear from it when the power is off.
• There are two main types of RAM: dynamic random access memory (DRAM), or Dynamic RAM, and static random access memory (SRAM).
• An expansion card is an electronic card/board that is used to add extra functionality to a computer.
• It is inserted into an expansion slot on the motherboard of a computer.
• Expansion cards contain edge connectors that are used to create an electronic link between motherboard and card, thus enabling these two to communicate.

Q8. Answer: (c) Bangladesh

The correct answer is Bangladesh.

Key Points

• India shares the largest border with Bangladesh and the length is around 4096 km.
• India has approx. 15100 km of land border and a coastline of 7,516.6 km including island territories, with its neighboring countries.

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• This makes it the fifth-longest land border in the world.
• The border between India and Bangladesh includes the following lengths in each state:
• Assam: 262 kilometers
• Tripura: 856 kilometers
• Mizoram: 318 kilometers
• Meghalaya: 443 kilometers
• West Bengal: 2,217 kilometers

Additional Information

Lengths of boundaries shared with India's neighboring countries:

Name of the country	Length of the border (in Km)
Bangladesh	4,096.7
China	3,488
Pakistan	3,323
Nepal	1,751
Myanmar	1,643
Bhutan	699
Afghanistan	106
Total	15,106.7

Source: https://www.mha.gov.in/sites/default/files/BMIntro-1011.pdf

Q9. Answer: (a) Chlorine

The correct answer is Chlorine

Key Points

• The gas emitted from chlorofluorocarbons (CFCs) that is harmful to the ozone layer is chlorine
• CFCs are nontoxic, nonflammable chemicals that contain chlorine, carbon, and fluorine atoms.
• When CFCs rise into the stratosphere, they are broken down by ultraviolet radiation, releasing chlorine atoms.
• These chlorine atoms react with ozone molecules and destroy them.

Additional Information

• About Ozone layer:
• CFC has disrupted this balance and increase the degradation of Ozone gas which is called Ozone depletion.
• Although ozone depletion is occurring in the stratosphere, the depletion is especially marked over the Antarctic region.
• This has resulted in the formation of a large area of the thinned ozone layer, commonly called the ozone hole
• Montreal Protocol in 1987 bans the production of CFCs, halons, and other ozone-depleting chemicals.
• World Ozone Day is observed on the 16th of September every year.
• The O3 layer present in the stratosphere protects us from the harmful UV rays of the sun.
• Ozone layer thickness is measured in Dobson units.

Q10. Answer: (c) Justice Adarsh Kumar Goel

The correct answer is Justice Adarsh Kumar Goel

Key Points

• As of November 2020, the Chairperson of the National Green Tribunal (NGT) was Justice Adarsh Kumar Goel.
• Justice Adarsh Kumar Goel, a former judge of the Supreme Court of India, was appointed as the Chairperson of the NGT in July 2018.
• He Worked toward ensuring a balance between development and environmental sustainability.
• He Focused on issues like waste management, air and water pollution, deforestation, and industrial compliance with environmental laws.

Additional Information

• The NGT was established on 18th October 2010.
• NGT is a specialized body set up under the National Green Tribunal Act (2010) for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.

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• The first Chairman of the NGT was Justice Lokeshwar Singh Panta on 18 October 2010.
• The Central Government in consultation with CJI is appointed the Chairperson of NGT.
• A Selection Committee shall be formed by the central government to appoint the Judicial Members and Expert Members.

Q11. Answer: (b) In 1767

The correct answer is 1743.

Key Points

• Lord Clive finally return to England from India in 1767
• Robert Clive, who was one of the founders of the establishment of British supremacy in India, came to India in the year 1743.
• Robert Clive was the First Governor of Bengal at the time of the company's rule who took office in 1758 after the assassination of the Nawab in Murshidabad in 1757.
• Dual Administration was introduced in the year 1765 by Robert Clive.
• Dual Administration divided the administration of Bengal into two parts.
• Diwani: It meant to Right to collect revenue (lay in the hands of the British).
• Nizamat: means Administration, which will be administered by Nawab of Bengal.

Additional Information

• Robert Clive the first English Governor of Bengal presidency made a settlement with the Nawab of Awadh in 1765, this settlement was also referred to as the First Treaty of Allahabad.
• The treaty was signed between Mughal emperor Shah Alam II, Nawab Shuja-ud-Daula, and Robert Clive.
• Shuja-ud-Daula was the Nawab of Awadh from 1754 to 1775. He was the successor of Safdar Jang.
• According to the treaty the Nawab paid 50 lakhs to the English as war indemnity (protection/insurance).
• Nawab also surrendered Allahabad and Kora to the Mughal emperor Shah Alam II.
• Robert Clive was the First British Governor of the Bengal Presidency.
• The Battle of Plassey (1757) was fought between Siraj Ud Daulah and Robert Clive.
• He is also known as Babar of British India.

Q12. Answer: (d) Rs. 125/-

Given:

Simple Interest (SI) = Rs. 150 - Amount (A) = Rs. 150

Time (t) = 4 years

Rate (r) = 5%

Formula used:

SI = (P × r × t)/100

A = P + SI

Calculation:

150 = P + (P × 5 × 4)/100

=> 150 = P + 20P/100

=> 150 = P + 0.2P

=> 150 = 1.2P

=> P = 150/1.2

=> P = 125

Therefore The correct answer is option (4).

Q13. Answer: (a) Biosphere

The correct answer is Biosphere.

Key Points

• The narrow zone of contact between the lithosphere, hydrosphere, and atmosphere is called the Biosphere.
• The Biosphere is characterized as an area that contains all living organisms and the products of their activities.
• Eduard Suess first coined the term Biosphere in1875.
• As a result, it plays a critical role in the maintenance of ecosystems, i.e., the existence of species and their reciprocal interactions.
• The biosphere provides important resources.
• Many people rely on the biosphere for basic necessities including food, medicine, construction materials, and fuel.

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• Indigenous peoples, in particular. Except for salt, all food comes from the biosphere, but established societies prefer to farm rather than forage.

Additional Information

• The ecosystem is the structural and functional unit of ecology where the living organisms interact with each other and the surrounding environment.

• An ecosystem is defined as a community of lifeforms in concurrence with non-living components, interacting with each other.

• The term Ecosystem was first coined by A.G.Tansley, an English botanist, in 1935.

• The environment can be defined as a sum total of all the living and non-living elements and their effects that influence human life.

• An atmosphere is a blanket of gases that surrounds Earth.

• It is held near the surface of the planet by Earth's gravitational attraction.

• Argon, oxygen, and nitrogen from the three main constitutions of the atmosphere.

• The atmosphere is a protective layer of gases that shelters all life on Earth, keeping temperatures within a relatively small range and blocking out harmful rays of sunlight.

Q14. Answer: (b) From the parliament building

The correct answer is From the parliament building

Key Points

• Before moving to its current location on Tilak Marg in New Delhi, the Supreme Court of India operated from the old Parliament House.

• The Supreme Court was inaugurated on January 28, 1950, in the Chamber of Princes in the old Parliament building.

• The Supreme Court operated from the old Parliament House until it moved to its current location in 1958

• The Supreme Court of India can meet at any other location in addition to its permanent seat in New Delhi, if the Chief Justice of India and the President of India decide so.

• This flexibility is provided under Article 130 of the Indian Constitution.

Additional Information

• It took the place of both the Federal Court of India and the Privy Council's Judicial Committee, which were at the time the highest courts in India.

• However, the first hearings and inauguration were held on January 28, 1950, at 9:45 a.m., when the judges took their seats. As a result, the date of establishment is considered official.

• The Supreme Court of India is India's top court and the highest judicial authority.

• It is the highest-ranking constitutional court with judicial review authority.

• The Supreme Court of India, which has a maximum of 34 judges and vast powers in the form of original, appellate, and advisory jurisdictions, is led by the Chief Justice of India.

• As India's supreme constitutional court, it hears appeals mostly from high courts in various states of the Union, as well as other courts and tribunals.

Q15. Answer: (d) 195.5536

Given:

176 + 17.6 + 1.76 + 0.176 + 0.0176 = ?

Formula used:

Summation of all given numbers

Calculation:

176 + 17.6 + 1.76 + 0.176 + 0.0176 = ?

=> 176 + 17.6 = 193.6

=> 193.6 + 1.76 = 195.36

=> 195.36 + 0.176 = 195.536

=> 195.536 + 0.0176 = 195.5536

Therefore The correct answer is option (4).

Q16. Answer: (a) Amazon

Jio, Vodafone, and Airtel are telecommunication companies primarily providing mobile network and internet services.

Amazon, on the other hand, is primarily an e-commerce platform, not a telecom service provider.

Thus, out of all the options 'Amazon' is the inconsistent one.

Hence, "Option 1" is the correct answer.

Q17. Answer: (a) It arises due to difference in atmospheric pressure.

The correct answer is It arises due to difference in atmospheric pressure.

Key Points

• Coriolis Force does not arise due to differences in atmospheric pressure.

• Instead, it is caused by the rotation of the Earth, which deflects the path of moving objects (e.g., winds, ocean currents) relative to the surface of the Earth.

• Pressure differences drive winds, but the Coriolis force affects their direction.

• The Coriolis force is maximum at the poles because its magnitude depends on the sine of the latitude, which is 1 at the poles.

• The Coriolis force is zero at the equator because the sine of 0° latitude is 0.

• The Coriolis force is directly proportional to the sine of the latitude (angle of latitude), making it stronger as you move from the equator toward the poles.

Additional Information

• Coriolis force deflects surface currents At an angle of about 45 degrees to the wind-to the right in the Northern Hemisphere, left in the Southern Hemisphere.

• It is maximum at the poles and is absent at the equator.

• The force acts perpendicular to the pressure gradient force.

• The Coriolis force is zero at the equator and the wind blows perpendicular to the isobars.

• Major surface ocean currents in the open ocean, however, are set in motion by the wind, which drags on the surface of the water as it blows. The winds pull surface water with them, creating currents. As these currents flow westward, the Coriolis effect, a force that results from the rotation of the Earth, deflects them.

Q18. Answer: (c) 720

Given:

Fraction of residents who own cars = 13/18

Fraction of car owners who purchased cubby parking space = 48/65

Residents parking in the open = 136

Formula used:

Residents parking in the open = Residents owning cars - Residents with cubby parking

Calculation:

Let the total number of residents be N.

Residents who own cars = (13/18) × N

Residents with cubby parking = (48/65) × [(13/18) × N]

Residents parking in the open = Residents who own cars - Residents with cubby parking:

136 = [(13/18) × N] - [(48/65) × (13/18) × N]

=> 136 = (13N / 18) × [1 - (48/65)]

=> 136 = (13N / 18) × (17/65)

=> 136 = (221N / 1170)

=> N = (136 × 1170) / 221

=> N = 720

Therefore The total number of residents in the society is 720, which corresponds to option 3.

Q19. Answer: (c) Chandel

The correct answer is Chandela.

Key Points

• Khajuraho temples were built between 950 AD and 1050 AD by the Chandela dynasty ruler.

• They built a grand temple of Lord Chitragupta in Khajuraho.

• Three other important Chandela strongholds were Jayapura-Durga (modern Ajaigarh), Kalanjara (modern Kalinjar) and Mahotsava-Nagara (modern Mahoba).

• The Khajuraho Group of Monuments is a group of Hindu temples and Jain temples in Chhatarpur district, Madhya Pradesh.

• The temples are famous for their nagara-style architectural symbolism and their erotic sculptures.

• They are a UNESCO World Heritage Site.

Additional Information

• Chandela Dynasty -
• The Chandela is a Rajput clan found in North India.
• They are regarded to be Chandravanshi that means the descendants of Soma.
• The title given to them was Rao.
• A section of the Chandelas ruled much of the Bundelkhand region of central India for long periods between the 10th and the 13th centuries AD.
• The founder of the Chandel dynasty, Nannuk was the ruler of a small kingdom.
• The Chandelas initially ruled as feudatories of the Gurjara-Pratiharas of Kanyakubja (Kannauj).
• Their first capital city was Khajuraho, which was later shifted to Mahotsava Nagar or Mahoba.
• The Chandela dynasty is famous in Indian history for King Vidyadhar, who repulsed the attacks of Mahmud of Ghazni.

Q20. Answer: (b) Rs. 3,000

Given:
Number of days initially planned (N1) = 15 days
Number of days overstayed (N2) = 9 days
Reduction in average daily allowance = Rs. 75
Total days (N) = N1 + N2 = 15 + 9 = 24 days
Formula used:
Let the initial daily allowance be Rs. x.
Total amount initially sanctioned (A) = N1 × x
Average daily allowance for 24 days = x - 75
Total amount for 24 days = 24 × (x - 75)
Total amount initially sanctioned = Total amount for 24 days
Calculation:
15x = 24(x - 75)
=> 15x = 24x - 1800
=> 1800 = 24x - 15x
=> 1800 = 9x
=> x = 200
Total amount initially sanctioned = 15 × 200 = Rs. 3000
Therefore The correct answer is option (2).

Q21. Answer: (d) Goa

The correct answer is Goa
Key Points
• Dhalo is a popular religious folk dance of Goa, India.
• It is performed by women in a sacred open space called a mand during the Hindu month of Pausha, which is at the beginning of winter.
• The dance is a prayer for the protection of the women's households
• 12–24 women dance in two parallel rows facing each other, with their arms interlocked.
• The dance is performed at a slower pace than the Fugdi dance.
• The songs are usually sung in Konkani or Marathi, and often have religious or social themes.
Additional Information
• Other popular folk dances in Goa include:
• Dekhni
• A cultural dance performed by Christians who converted from Hinduism during Portuguese rule
• Dhangar
• Performed by the shepherd community of Goa during Navratri
• Lamp Dance
• Also known as "Mell" in central Goa, this dance involves balancing brass lamps on the head and hands
• Fugdi
• Performed by women in the Konkan region during Hindu religious festivals like Ganesh Chaturthi and Vrata

Q22. Answer: (a) Steve Smith

The correct answer is Steve Smith

Key Points

• Steve Smith won the "ICC Men's Test Cricketer of the Decade" award in December 2020.

• This award was based on his exceptional performances in Test cricket during the decade (2011–2020).

• Smith was the leading run-scorer in Tests during this period, with a phenomenal batting average and several match-winning performances.

• Steve Smith was the most consistent Test batsman of the decade, amassing over 7,000 Test runs during this period with an average of nearly 65.

Additional Information

• Cricket World Cup is an international cricket championship held at four-year intervals.

• It is the premier contest in one-day cricket and one of the most-watched sporting events in the world.

• In 1975 the first Cricket World Cup was contested in England as a series of one-day matches of 60 overs per side.

• It was held outside England, in India and Pakistan, for the first time in 1987.

• The 1987 contest also saw the number of overs per side reduced to 50.

• In 2007 Australia became the first team to win three consecutive World Cup tournaments.

Q23. Answer: (d) 23,102

Given:

Numbers: 16,384, 41,616, 97,344, 23,102 (options)

Calculation:

1. A number is a perfect square if its square root is an integer.

2. Check each number:

16,384: √16,384 = 128 (integer, perfect square)

41,616: √41,616 = 204 (integer, perfect square)

97,344: √97,344 = 312 (integer, perfect square)

23,102: √23,102 ≈ 151.96 (not an integer, not a perfect square)

Therefore The number 23,102 (Option 4) is not a perfect square.

Q24. Answer: (b) File Transfer Protocol

The correct answer is File Transfer Protocol.

Key Points

• File Transfer Protocol:

• The File Transfer Protocol (FTP) is a standard communication protocol used for the transfer of computer files from a server to a client on a computer network.

• FTP is built on a client–server model architecture using separate control and data connections between the client and the server.

• FTP users may authenticate themselves with a clear-text sign-in protocol, normally in the form of a username and password, but can connect anonymously if the server is configured to allow it.

• For secure transmission that protects the username and password, and encrypts the content, FTP is often secured with SSL/TLS (FTPS) or replaced with SSH File Transfer Protocol (SFTP).

Additional Information

• FTP may run in active or passive mode, which determines how the data connection is established.

• This sense of "mode" is different from that of the MODE command in the FTP protocol, and corresponds to the PORT/PASV/EPSV commands instead.

• In both cases, the client creates a TCP control connection from a random, usually an unprivileged, port N to the FTP server command port 21.

• In active mode, the client starts listening for incoming data connections from the server on port M.

• It sends the FTP command PORT M to inform the server on which port it is listening.

• The server then initiates a data channel to the client from its port 20, the FTP server data port.

• In situations where the client is behind a firewall and unable to accept incoming TCP connections, passive mode may be used.

• In this mode, the client uses the control connection to send a PASV command to the server and then receives a server IP address and server port number from the server, which the client then uses to open a data connection from an arbitrary client port to the server IP address and server port number received.

• Both modes were updated in September 1998 to support IPv6.

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• Further changes were introduced to the passive mode at that time, updating it to extended passive mode.

Q25. Answer: (b) Rs. 23/-

Given:
Principal (P) = Rs. 100
Rate of interest (r1) = 10% per annum
Rate of interest (r2) = 20% per annum
Time (t) = 2 years
Formula used:
A = P(1 + r/100)^t
Where, A = Amount after time t
Calculations:
For r1 = 10%:
$A1 = 100(1 + 10/100)^2$
$\Rightarrow A1 = 100(1 + 0.1)^2$
$\Rightarrow A1 = 100(1.1)^2$
$\Rightarrow A1 = 100 \times 1.21$
$\Rightarrow A1 = Rs. 121$
For r2 = 20%:
$A2 = 100(1 + 20/100)^2$
$\Rightarrow A2 = 100(1 + 0.2)^2$
$\Rightarrow A2 = 100(1.2)^2$
$\Rightarrow A2 = 100 \times 1.44$
$\Rightarrow A2 = Rs. 144$
Extra interest earned:
Extra interest = A2 - A1
$\Rightarrow$ Extra interest = 144 - 121
$\Rightarrow$ Extra interest = Rs. 23
Therefore The correct answer is option 2.

Q26. Answer: (a) 21 cm

Given:
Volume of the sphere (V) = 4851 cm^3
Formula used:
Volume of the sphere, $V = (4/3)\pi r^3$
Where, r = radius of the sphere
Calculation:
$(4/3)\pi r^3 = 4851$
$\Rightarrow (4/3) \times (22/7) \times r^3 = 4851$
$\Rightarrow (88/21) \times r^3 = 4851$
$\Rightarrow r^3 = 4851 \times (21/88)$
$\Rightarrow r^3 = 1155.5$
$\Rightarrow r = cbrt1155.5$
$\Rightarrow r \approx 10.5$ cm
Diameter = 2r
$\Rightarrow$ Diameter = 2 × 10.5
$\Rightarrow$ Diameter ≈ 21 cm
Therefore The correct answer is option 1.

Q27. Answer: (d) Mercury

The correct answer is Mercury
Key Points
• Metals are the elements which have lustre, are good conductors of heat and electricity, are malleable and ductile.

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• All metals exist in a solid-state at room temperature.
• Mercury is the only metal which exists in the liquid state at room temperature.
• Mercury:
• The chemical symbol for mercury is 'Hg' and its atomic number 80.
• It is a shiny, silvery liquid metal at room temperature.
• Mercury is used in thermometers because of its proportional expansion or compression with a change in temperature.
• It is also used in fluorescent lamps, Batteries and barometers.
• Mercury consumption for living beings is toxic (Minamata disease is related to mercury intoxication).

Additional Information

• Solid State: If an object has a fixed shape and volume we can say it is solid.
• The inter-molecular force between them is strong and usually in a regular pattern.
• Most of the metals are solid at room temperatures except – Mercury (Hg) melting point – (-38.83° C).
• Non-metals are also solid at room temperature except- Bromine (Br) melting point – (-7.2° C)
• Liquid State: When an object has fixed volume but no shape we can say it is in the form of liquid.
• Their intermolecular force is not as strong as solid, they can flow freely.
• They are very little compressible.
• Gaseous State: In this state molecules can move freely and the inter-molecular force are very low. It has no shape and size. It is in a gaseous state.
• They are very compressible.

Q28. Answer: (a) Enhanced Due Diligence

The correct answer is Enhanced Due Diliegence

Key Points

• EDD in the banking sector stands for Enhanced Due Diligence
• EDD is a process that financial institutions use to examine customers and transactions that are considered high-risk.
• It's also known as Enhanced Customer Due Diligence (ECDD).
• EDD is a compliance requirement that helps financial institutions safeguard against financial risks.

Additional Information

• It involves:
• Scrutinizing customers and transactions to avoid financial crime
• Identifying red flags
• Developing a comprehensive risk management strategy
• Detecting and preventing attempts to disguise illicit funds' origin
• Avoiding sanctions
• Mitigating reputational, operational, legal, and credit risks

Q29. Answer: (b) 21 m

Given:

Perimeter of rectangle = 96 m

Length (L) = 27 m

Formula used:

Perimeter (P) of a rectangle = 2(L + W)

Where, W = width

Calculation:

96 = 2(27 + W)

=> 96 = 54 + 2W

=> 96 - 54 = 2W

=> 42 = 2W

=> W = 42 / 2

=> W = 21 m

Therefore The correct answer is option (2).

Q30. Answer: (b) 18

Given:

If $x + 1/x = 3$

Formula used:

$(x + 1/x)^3 = x^3 + 1/x^3 + 3x(1/x)(x + 1/x)$

Calculations:

$(x + 1/x)^3 = 3^3$

$\Rightarrow (x + 1/x)^3 = x^3 + 1/x^3 + 3(x + 1/x)$

$\Rightarrow 27 = x^3 + 1/x^3 + 3 \times 3$

$\Rightarrow 27 = x^3 + 1/x^3 + 9$

$\Rightarrow x^3 + 1/x^3 = 27 - 9$

$\Rightarrow x^3 + 1/x^3 = 18$

Therefore The correct answer is option 2.

Shortcut Trick Let $x + 1/x = P$

Then, $x3 + 1/(x^3) = P^3 - 3P$

$x + 1/x = P = 3$

$x3 + 1/(x^3) = 3^3 - 3 \times 3 = 27 - 9 = 18$

Q31. Answer: (d) 18

Given:

Numbers are 3, 4, and x

Formula used:

LCM of a set of numbers is the smallest positive integer that is divisible by each of the numbers.

Calculation:

LCM of 3 and 4 is calculated first:

LCM(3, 4) = 12

Now we need to check each option to see which cannot be the LCM:

Option 1: 60

LCM(3, 4, x) = 60

Possible, as 60 is divisible by 12.

Option 2: 24

LCM(3, 4, x) = 24

Possible, as 24 is divisible by 12.

Option 3: 36

LCM(3, 4, x) = 36

Possible, as 36 is divisible by 12.

Option 4: 18

LCM(3, 4, x) = 18

Not possible, as 18 is not divisible by 12.

Therefore The correct answer is option 4.

Q32. Answer: (d) Shiv Das Meena

The correct answer is Shiv Das Meena

Key Points

• As of November 2020, Shiv Das Meena, an IAS officer, was serving as the Chairman of the Central Pollution Control Board (CPCB).

• He was appointed to this position in August 2020.

• CPCB is a statutory organization under the Ministry of Environment, Forest and Climate Change, responsible for monitoring and controlling pollution in India.

• Shiv Das Meena is a 1989 batch IAS officer known for holding several administrative roles in various capacities across India.

Additional Information

• The Central Pollution Control Board (CPCB) is a statutory organization constituted in September 1974 under the Water Prevention and Control of Pollution Act, 1974.

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• Further, CPCB was entrusted with the powers and functions under the Air Prevention and Control of Pollution Act, 1981.

• The Central Pollution Control Board is led by its chairman; this chairman is appointed by the Central Government.

• This entire board comes under Central Government.

• According to Section-3, the Central Pollution Control Board can have a maximum of five officials nominated by the Central Government and not more than five persons nominated by the Central Government from amongst the members of State Boards.

• The Central Pollution Control Board is the apex organization in the country in the field of pollution control. It is a technical wing of the Ministry of Environment and Forest. It comes under the Government of India.

Q33. Answer: (a) Banabhatta

The correct answer is Banabhatta.

Key Points

• Banabhatta

• Banabhatta one of the most accomplished writers in sanskrit prose best known for his chronicle, the Harshacharita.

• Banabhatta was Sanskrit writer of India who was as harshavardhana's court poet.

• The biography of Harshvardhana that he penned is known as the "Harshacharita."Banabhatta's first historial work is the Harshacharita.

• He served as the Asthana Kavi at the court of King Harsha Vardhana, who ruled in north India from Sthanvishvara and later from Kannauj from 606 and 647 CE.

Additional Information

• Kalhana:

• Known for Rajatarangini, which chronicles the history of Kashmir.

• He is often considered the father of Indian historiography.

• First known historian of India; wrote a comprehensive historical chronicle of Kashmir.

• Pānini:

• Revolutionized linguistics with his work Astādhyāyī, which systematized Sanskrit grammar through concise sutras.

• Kalidasa:

• Revered as one of the greatest poets and playwrights in Indian literature.

• His works, such as Abhijñānaśākuntalam, are renowned for their poetic beauty and emotional depth.

Q34. Answer: (c) 112

Shortcut Trick

Identify prime numbers between 50 and 60 by checking divisibility.

Numbers to check: 51, 52, 53, 54, 55, 56, 57, 58, 59.

Exclude even numbers (52, 54, 56, 58) and multiples of 3 or 5 (51, 55, 57).

Remaining prime numbers: 53 and 59.

Sum => 53 + 59 = 112.

Therefore The correct answer is 112.

Alternate Method

Given: Range of numbers between 50 and 60.

Testing primality of odd numbers in the range:

=> 51: 5 + 1 = 6 (divisible by 3) → 17 × 3. (Composite)

=> 53: Not divisible by 2, 3, 5, or 7. (Prime)

=> 55: Ends in 5 → 11 × 5. (Composite)

=> 57: 5 + 7 = 12 (divisible by 3) → 19 × 3. (Composite)

=> 59: Not divisible by 2, 3, 5, or 7. (Prime)

=> Sum of identified primes = 53 + 59

=> Sum = 112

Therefore The correct answer is 112.

Additional Information

Prime Numbers Definition

A prime number is a natural number greater than 1 that has exactly two distinct positive divisors: 1 and itself.

Divisibility Rule for 3

A number is divisible by 3 if the sum of its digits is divisible by 3 (e.g., for 57, 5 + 7 = 12, which is divisible by 3).

Twin Primes

Two prime numbers are called twin primes if their difference is 2. For example, 59 and 61 are twin primes.

Primes up to 100

There are exactly 25 prime numbers between 1 and 100, including 2, 3, 5, 7, 11, ..., 97.

Q35. Answer: (a) between Ila and Rani

Given: Six girls are sitting in a circle facing each other.

1) Hina is sitting to the right of Mehak.

2) Ila is to the right of Hina.

3) Seema is on the left of Mehak, Rani is sitting between Seema and Priya.

Thus, according to the final arrangement, Priya is sitting between Ila and Rani.

Hence, "Option 1" is the correct answer.

Q36. Answer: (d) Legislative Council

The correct answer is Legislative Council

Key Points

• The Parliament consists of the two Houses and the President of India.

• The Indian Parliament is a bicameral legislature consisting of two houses – the Lok Sabha and the Rajya Sabha.

• The members of the Lok Sabha (House of the People) are directly elected by the people through the voting process.

• The members of the Rajya Sabha (Council of States) are elected by the members of the states' legislative assemblies.

• Hence Legislative Council are NOT a part of the Indian Parliament.

• India has a parliamentary system of government.

• The Union Parliament is the supreme legislative body in the country.

Additional Information

Functions of Parliament:

• Legislative Functions:

• The Parliament legislates on all matters mentioned in the Union List and the Concurrent List.

• In the case of the Concurrent List, where the state legislatures and the Parliament have joint jurisdiction, the union law will prevail over the states unless the state law had received the earlier presidential assent.

• However, the Parliament can any time, enact a law adding to, amending, varying, or repealing a law made by a state legislature.

• Executive Functions (Control over the Executive):

• By a vote of no-confidence, the Parliament can remove the Cabinet (executive) out of power.

• It can reject a budget proposal or any other bill brought by the Cabinet.

• A motion of no-confidence is passed to remove a government from office.

• The MPs (Members of Parliament) can ask questions to the ministers on their ommissions and commissions.

• Any lapses on the part of the government can be exposed in the Parliament.

• Financial Functions:

• The Union Budget prepared by the Cabinet is submitted for approval by the Parliament.

• All proposals to impose taxes should also be approved by the Parliament.

• There are two standing committees (Public Accounts Committee and Estimates Committee) of the Parliament to keep a check on how the executive spends the money granted to it by the legislature.

• Amending Powers:

• The Parliament has the power to amend the Constitution of India.

• Both Houses of Parliament have equal powers as far as amending the Constitution is concerned.

• Amendments will have to be passed in both the Lok Sabha and the Rajya Sabha for them to be effective.

Q37. Answer: (b) Purple

Given: All six faces of a cube are painted with different colors – violet, indigo, blue, green, yellow and orange.

1) The green page is at the bottom

2) On the opposite side of the green page is the purple page.

As green page is at the bottom and is opposite to the purple page, therefore purple page will be at the top of the cube.

3) The orange page is adjacent to the yellow page.

4) Indigo page is adjacent to orange page.

As direction of orange page with respect to either yellow page or Indigo page is not given yet, therefore yellow page and indigo page can be either side of orange page.

As, top and bottom of the cube are already painted, therefore the 3 sides out of 4 sides will be painted in the order of "Indigo page / Yellow page - Orange page - Indigo page / Yellow page".

As direction of orange page with respect to either top page or bottom page is not given yet, therefore orange page can be at the either sides of the cube.

Case 1)

Case 2)

3) The blue page is between the green and purple pages.

The blue page can be painted at one of the either 4 sides of the cube left as all the 4 sides are between top and bottom.

Case 1)

Case 2)

Thus, in both cases, purple is the color of the upper page.

Hence, "Option 2" is the correct answer.

Q38. Answer: (a) 12/11

Given:

Total time for the journey = 90 minutes

Distance covered at reduced speed = 1/4 of the total distance

Reduced speed = 4/5 of usual speed

Let normal speed = S and total distance = D.

Formula used:

1. Time for reduced-speed part: T1 = (1/4 × D) ÷ (4/5 × S)
2. Remaining time for normal-speed part: T2 = 90 - T1
3. Speed for remaining distance: Sr = (3/4 × D) ÷ T2
4. Required ratio = Sr ÷ S

Calculations:

Step 1: Calculate T1:

T1 = (1/4 × D) ÷ (4/5 × S)

T1 = (1/4) × (5/4) × (D/S)

T1 = (5/16) × (D/S)

Step 2: Substitute D/S = 90:

T1 = (5/16) × 90

T1 = 450 ÷ 16

T1 = 28.125 minutes

Step 3: Calculate T2:

T2 = 90 - T1

T2 = 90 - 28.125

T2 = 61.875 minutes

Step 4: Calculate Sr:

Sr = (3/4 × D) ÷ T2

Sr = (3/4 × 90S) ÷ 61.875

Sr = 67.5S ÷ 61.875

Sr/S = 1.091 = 12/11

Therefore The remaining journey was covered at 12/11 times his normal speed.

Q39. Answer: (b) 1 July 2015

The correct answer is 1 July 2015.

Key Points

• The Digital India campaign was initiated by the Indian Government to make government services accessible to people electronically by improving online infrastructure and improving internet connectivity.

• It was launched by Prime Minister Narendra Modi on 1st July 2015.

• Other government programs, including Make in India, Bharatmala, Sagarmala, Startup India, BharatNet, and Standup India, are

beneficiaries of this scheme.

• With a vision of inclusive growth in the areas of electronic services, goods, manufacturing, and job opportunities, Digital India was established.

• There is a total of nine pillars of the Digital India Campaign.

Additional Information

• The key objectives of the Digital India initiative are as follows:

• To provide universal access to high-speed internet connectivity in all parts of the country.

• To transform government services into digital platforms for efficient and transparent delivery.

• To empower citizens through digital literacy programs and access to digital resources.

• To ensure easy availability of government information and services to citizens electronically.

• To promote domestic manufacturing of electronic goods and create job opportunities in the electronics industry.

• To provide skill development programs and promote the growth of the IT and IT-enabled services sector.

Q40. Answer: (c) 67,368 km

The correct answer is 67,368 km.

Key Points

• Indian Railways is one of the largest railway networks in the world and connects almost all parts of India through its extensive network of tracks.

• As of March 2020, the total route length of the Indian Railways is 67,368 km, which includes both broad gauge and meter gauge tracks.

• The Indian Railways has 18 zones and more than 7,000 stations, making it an integral part of the country's transportation infrastructure.

• The Indian Railways also operates several luxury and tourist trains, such as the Palace on Wheels and the Maharaja Express, which offer a unique and memorable travel experience to passengers.

Additional Information

• The first opulent tourist train in India is called The Palace on Wheels.

• In an effort to boost tourism in Rajasthan, the Indian Railways and the Rajasthan Tourism Development Corporation jointly launched it.

• In 1982, the train was introduced.

• Heritage Palace on Wheels is the new name for the train.

• Indian Railway Catering and Tourism Corporation is the owner and operator of the opulent tourist train known as the Maharajas' Express.

• Between October and April, it operates four routes through North-West and Central India, with a primary focus on Rajasthan.

Q41. Answer: (d) 2061

The correct answer is 2061

Key Points

• Halley Comet

• It orbits the sun every 75-76 years, so this is the time between appearances.

• It was seen again in 1758, 1835, 1910, and 1986.

• It was last seen in Earth's skies in 1986 and was met in space by an international fleet of spacecraft.

• It will return in 2061 on its regular 76-year journey around the Sun.

• The radius of Halley's Comet is 5.5 km.

• Halley's comet was discovered in 1758.

• Comet Halley moves backward (opposite to Earth's motion) around the Sun in a plane tilted 18 degrees to that of the Earth's orbit.

Additional Information

• Comet McNaught was seen over the Pacific Ocean in 2007.

• It was the biggest Comet Measured.

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Q42. Answer: (d) India

The correct answer is India

Key Points

• India is the world's largest milk producer, accounting for 22% of the global milk production.
• The United States, Pakistan, China, and Brazil follow India in milk production.
• India's milk production has increased by more than 61% from 2013-14 to 2021-22.
• The world's milk production has increased by more than 77% in the last three decades

Additional Information

• Uttar Pradesh is the top milk-producing state in India, contributing 17% of the nation's total production.
• Uttar Pradesh has the highest buffalo population in the country and the second highest cattle population.
• The majority of rural population in the state is engaged in livestock and dairying.
• Number two and third place are held by Rajasthan (11.5%) and Andhra Pradesh (9%) respectively, in milk production.

Q43. Answer: (c) Iron

The correct answer is Iron

Key Points

• Iron is a micronutrient used for crop plants.
• Micronutrients are elements that plants need in small amounts, while macronutrients are elements that plants need in large amounts.
• Iron is a micronutrient that plants need for growth.
• Other micronutrients include manganese, copper, zinc, molybdenum, boron, chlorine, and nickel.

Additional Information

• Macronutrients are nutrients that the body needs in large quantities to provide energy and maintain structure and systems.
• The three macronutrients are carbohydrates, fats, and proteins:
• Carbohydrates: Provide energy to the body
• Fats: Help with satiety, hormone balance, and the absorption of vitamins A, D, E, and K
• Proteins: Help rebuild and repair body tissues
• A balanced diet should include all three macronutrients.
• Some people "count macros" to lose weight or to ensure they are getting the nutrients they need. This can involve keeping a food diary or using a free app.
• Macronutrients include carbon, hydrogen, oxygen, nitrogen, phosphorous, sulfur, potassium, calcium, and magnesium.

Q44. Answer: (b) Vijayanagar

The correct answer is Vijayanagar.

Key Points

• Hampi was the capital of the Vijayanagara Empire in the 14th century.
• Hampi is an ancient village in the Indian state of Karnataka.
• Hampi's name is derived from that of the local mother goddess, Pampadevi.
• Hampi is now a city in ruins, but it was once the second-largest medieval-era city after Beijing.

Additional Information

• On the south bank of the River Tungabhadra is the 7th-century Virupaksha Temple, near the revived Hampi Bazaar.
• Southeast of Hampi, Daroji Bear Sanctuary is home to the Indian sloth bear.
• Vijayanagara or "city of victory" was the name of both a city and an empire.
• Hampi also referred to as the Group of Monuments, is a UNESCO World Heritage Site located in East-Central Karnataka.
• The empire was founded in the fourteenth century. In its heyday, it stretched from the river Krishna in the north to the extreme south of the peninsula.
• The ruins at Hampi were brought to light in 1800 by Colonel Colin Mackenzie. He worked for East India Company.

Q45. Answer: (a) USA

The correct answer is USA

Key Points

• The United States of America (USA) has more than one standard meridian
• The USA has seven time zones, and the lower 48 states are covered by four zones based on the 75°, 90°, 105°, and 120° central meridians.
• This is because it would be inconvenient to have a single time zone in these large countries.
• The prime meridian is a line of longitude that defines 0° and divides the Earth into the Eastern and Western Hemispheres

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• The prime meridian is the reference line for Greenwich Mean Time (GMT) and represents the center of world time

Additional Information

• Countries with multiple standard meridians

• Countries with a large east-to-west span may choose more than one standard meridian to create more than one time zone.

• Other countries with multiple standard meridians include Russia, Canada, Australia, Mexico, Brazil, Indonesia, Kazakhstan, Mongolia, the Democratic Republic of the Congo, Kiribati, Micronesia, Chile, Spain, Portugal, and Ecuador.

Q46. Answer: (c) 8 : 5

Given:

32 : 20

Formula used:

Simplify the ratio by dividing both terms by their greatest common divisor (GCD).

Calculation:

GCD of 32 and 20 is 4.

=> 32 ÷ 4 : 20 ÷ 4

=> 8 : 5

Therefore The correct answer is option (3).

Q47. Answer: (c) Periscope

The correct answer is Periscope

Key Points

• Periscope:

• Periscope is the instrument used in submarines to view objects above sea level.

• It is an optical instrument, uses mirrors at 45° angle to observe over, around, and through which is prevented by the line of sight.

• It works based on laws of reflection of light.

• It is used in submarines to view the upper surface sight, hiding positions for military, nuclear reactor and many other ways

Additional Information

• Microscope:

• A microscope is an optical instrument used to magnify and observe small objects or structures that are too tiny to be seen by the naked eye.

• It uses lenses or a combination of lenses to achieve high magnification.

• Example Uses: Studying cells, bacteria, or microscopic organisms in biology or medical labs.

• Endoscope:

• An endoscope is a medical instrument used to examine the interior of a body cavity or a hollow organ.

• It consists of a long, flexible or rigid tube with a light source and camera attached to it.

• Example Uses: Diagnosing and performing procedures in the gastrointestinal tract, respiratory tract, or joints (e.g., endoscopy, colonoscopy).

• Telescope:

• A telescope is an optical instrument designed to observe distant objects by collecting and magnifying light or other electromagnetic radiation.

• It is primarily used in astronomy for viewing celestial bodies.

• Example Uses: Observing planets, stars, and galaxies.

Q48. Answer: (c) 32 hours

Given:

Builder constructs wall in 20 hours

Destroyer demolishes wall in 50 hours

Both work for 30 hours before destroyer is removed

Formula used:

Work done by builder in 1 hour = 1/20

Work done by destroyer in 1 hour = -1/50

Total work done in 30 hours = (Work done by builder + Work done by destroyer) × 30

Remaining work = Total work - Work done in 30 hours

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Time taken by builder to complete remaining work = Remaining work × 20

Calculation:

Work done by builder in 1 hour = 1/20

Work done by destroyer in 1 hour = -1/50

Total work done in 30 hours = (1/20 - 1/50) × 30

=> Total work done in 30 hours = (5/100 - 2/100) × 30

=> Total work done in 30 hours = 3/100 × 30

=> Total work done in 30 hours = 90/100 = 0.9

Remaining work = 1 - 0.9 = 0.1

Time taken by builder to complete remaining work = 0.1 × 20

=> Time taken by builder to complete remaining work = 2 hours

Total time taken = 30 hours + 2 hours = 32 hours

Therefore The correct answer is option (3).

Q49. Answer: (b) 338 √3

Formula used:

Perimeter of Rectangle = 2 × (Length + Breadth)

Area of Rhombus = (Side²) × sin(Angle)

Calculation:

Perimeter of Rectangle = 2 × (34 + 18)

=> Perimeter = 2 × 52

=> Perimeter = 104 cm

Since the perimeter of the rhombus is equal to that of the rectangle:

Perimeter of Rhombus = 4 × Side

=> 104 = 4 × Side

=> Side = 26 cm

Area of Rhombus = (Side²) × sin(120º)

=> Area = 26² × sin(120º)

=> Area = 676 × (√3 / 2)

=> Area = 338√3 cm²

Therefore The correct answer is option (2).

Q50. Answer: (c) Momentum

The correct answer is Momentum.

Key Points

• Rockets work on the principle of conservation of Momentum, which is derived from Newton's third law of motion.

• The rocket expels mass (propellant) at high speed, and in turn, the rocket moves in the opposite direction.

• In a rocket, gasses at high temperatures and pressure are created by the combustion of fuel.

• They escape with a high constant velocity via a nozzle.

• The large, backward momentum of the gasses gives the rocket an equal forward momentum.

Additional Information

• Conservation of Momentum: According to this principle, in an isolated system, the vector sum of linear momenta of all bodies of a system is conserved and is not affected due to their mutual action and reaction.

• If two bodies of different masses collide with each other and there is no external force acting on it them,

• The initial momentum of bodies = Final momentum of bodies

Q51. Answer: (b) Q

The logic followed here is:

Hence, "Option 2" is the correct answer.

Q52. Answer: (a) Badruddin Tyabji

The correct answer is Badruddin Tyabji.

Key Points

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• Badruddin Tyabji:
• He was an Indian political activist during British Raj.
• He was one of the founding members of the Indian National Congress.
• He was the first Muslim President of the Indian National Congress. Hence, Option 2 is correct.
• Badruddin Tyabji was the first Muslim President of the 3rd session of Indian National Congress (INC) that was held at Madras in 1887.
• He became a Barrister in April 1867.
• He was the first Indian to be admitted to the High Court of Bombay as a barrister.
• In 1902, he became the first Indian to serve as Chief Justice in Bombay.
• The first Muslim politician to build a secular political awareness was Badruddin Tyabji.
• The 'Triumvirate' ('The Three Stars') of Bombay's public life were Badruddin Tyabji, Pherozeshah Mehta, and Kashinath Telang.
Additional Information
• Abul Kalam Azad
• He was the Indian government's First Minister of Education.
• He served as the third President of the Indian National Congress twice between 1923 to 1924 and 1940 to 1946.
• He is the Indian National Congress's (INC) youngest President.
• Nawab Syed Muhammad Bahadur
• He was an Indian politician, presided over the Indian National Congress's Karachi Conference in 1913.
• After Badruddin Tyabji and Rahimtulla M. Sayani, he was the Muslim to hold the position.
• Dada Bhai Naoroji
• He was one of the founding members Indian National Congress.
• He served as 2nd, 9th, and 22nd President of the Indian National Congress from 1886 to 1887, 1893 to 1894 and 1906 to 1907.

Q53. Answer: (c) Mother

Given: Pointing to a picture of a girl, Meera said, “She is the daughter of my mother's only daughter”.
Thus, Meera is the girl's mother.
Hence, the correct answer is "Option 3".

Q54. Answer: (c) 2

Given:
Expression: (cos 41° / sin 49°) + (sin 51° / cos 39°)
Formula used:
sin (90° - θ) = cos θ
cos (90° - θ) = sin θ
Calculation:
cos 41° / sin 49° = cos 41° / cos (90° - 41°)
=> cos 41° / cos 41° = 1
sin 51° / cos 39° = sin 51° / sin (90° - 51°)
=> sin 51° / sin 51° = 1
Adding the results:
(cos 41° / sin 49°) + (sin 51° / cos 39°) = 1 + 1 = 2
Therefore The value of the given expression is 2, which corresponds to option 3.

Q55. Answer: (a) 23

The logic followed here is:
Hence, "Option 1" is the correct answer.

Q56. Answer: (c) O

Decoding digits:

A is			
Sign	×	/	•
Meaning	Brother	Mother	Daughter

to B			

Given: L / M × N + O

L / M → L is the mother of M.

M × N → M is the brother of N.

N + O → N is the daughter of O.

Thus, O is the father.

Hence, the correct answer is "Option 3".

Q57. Answer: (c) Samveda

The correct answer is Sama Veda.

Key Points

• The Sama Veda is about music.

• The Sama Veda is a collection of verses.

• The Sama Veda is mostly drawn from the Rig Veda.

• Sama Veda is a collection of 1810 melodies.

• The Upveda of Sama Veda is Gandharva Veda.

Additional Information

• The Vedas are considered the earliest literary record of Indo-Aryan civilization.

• There are four Vedas: Rigveda, Samaveda, Yajurveda and the fourth one is Atharvaveda.

• Rig Veda

• The Rig Veda is the oldest of the four Vedas.

• Rig Veda is considered to be the earliest composition in the Sanskrit Language.

• The Rig Veda is a collection of 1028 hymns, divided into 10 books (Mandals).

• Rig Veda provides us with information about the lifestyle in the Early Vedic Age.

• Ayurveda is the Upveda of Rig Veda.

• Yajur Veda

• Yajur Veda deals with the procedure of performances of sacrifices.

• Yajur Veda is further divided into:

• Shukla Yajur Veda which contains mantras.

• Krishna Yajur Veda contains mantras and prose.

• The Upveda of the Yajur Veda is Dhanur Veda.

• Atharva Veda

• The Atharva Veda is a collection of charms and magic spells.

• The Atharva Veda is divided into 20 books (kandas).

• The Atharva Veda has 711 Hymns.

• The Upveda of the Atharva Veda is Shilpa Veda.

Q58. Answer: (d) 29/10

Given:

Sum of 5/2 and 2/5

Formula used:

To add two fractions, use the formula:

a/b + c/d = (a × d) + (b × c)/(b × d)

Calculations:

5/2 + 2/5

=> (5 × 5) + (2 × 2)/(2 × 5)

=> (25 + 4)/10

=> 29/10

Therefore The correct answer is option (4).

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Q59. Answer: (d) Kerala

The correct answer is Kerala.

Key Points

• National Waterway (NW) – 3 is officially known as the West Coast Canal.

• It is located in the state of Kerala.

• This waterway stretches from Kottapuram to Kollam, covering a distance of approximately 205 km.

• The waterway also includes the Udyogamandal and Champakara Canals.

• NW-3 was declared a National Waterway in 1993.

• It plays a crucial role in the transportation of goods and passengers within Kerala, promoting economic growth and reducing traffic congestion on roads.

Additional Information

• The longest national waterway in India is the National Waterway 1 (NW-1).

• It is also known as the Ganga-Bhagirathi-Hooghly river system.

• It stretches from Prayag Raj(Allahabad) in Uttar Pradesh to Haldia in West Bengal.

• It has a total distance of about 1,620 kilometers.

Q60. Answer: (a) 96 Days

Given:

14 men can build a wall in 12 days.

Another group of 7 persons, each of whom is one fourth as efficient as the persons of the first group.

Formula used:

Work = Number of men × Efficiency × Time

Calculation:

Let the total work be W.

14 men × 1 × 12 days = W

=> W = 168 man-days

Efficiency of each person in the second group = 1/4

7 men × (1/4) efficiency × Time = 168 man-days

=> 7 × 1/4 × Time = 168

=> 7/4 × Time = 168

=> Time = 168 × 4/7

=> Time = 24 × 4

=> Time = 96 days

Therefore The correct answer is option 1.

Q61. Answer: (b) Four

The correct answer is Four

Key Points

• A graphite atom has four valence electrons.

• Graphite is an allotrope of carbon, which has an atomic number of 6.

• The number of valence electrons in an element can be determined by looking at its position in the periodic table.

• The electrons in the outermost shell of an atom are called valence electrons.

• Carbon has four electrons in its outermost shell, or valence shell.

• Carbon atoms form chemical bonds with other atoms or groups of atoms to achieve a stable electron configuration.

• Carbon can form single, double, and triple bonds with other atoms

Q62. Answer: (b) Less than 7

The correct answer is Less than 7

Key Points

• If the pH value of river water is less than 7, it indicates that the water is acidic, which means it has been polluted by acidic waste.

• pH scale:

• The pH scale measures how acidic or alkaline a substance is. It ranges from 0 to 14.

• A pH value of 7 is neutral, meaning it is neither acidic nor alkaline.

• A pH less than 7 indicates that the water is acidic.

• A pH greater than 7 indicates that the water is alkaline.

Additional Information

• When the pH value of water drops below 7 (becomes acidic), it can be caused by the presence of acidic pollutants, such as industrial waste, acid rain, or untreated sewage. This can harm aquatic life, disturb ecosystems, and affect the quality of the water for human consumption and other uses.

Q63. Answer: (c) Sunlight

The correct answer is Sunlight

Key Points

• The primary source of energy in plants is the sunlight

• An ecosystem is the basic ecological unit in which living organisms interact among themselves and with their surrounding physical environment.

• Except for the deep sea hydro-thermal ecosystem, the sun (sunlight) is the only source of energy for all ecosystems on earth.

• Out of the total incident solar radiation, only 50% of it is photosynthetically active radiation (PAR).

• Plants capture only 2-10 per cent of the PAR and this small amount of energy sustains the entire living world. So, there is the unidirectional flow of energy from the sun to producers and then to consumers.

• The energy is transferred in an ecosystem in the form of food which is degraded and lose a major part of food energy as heat during metabolic activities, this can be explained by Lindeman’s 10 per cent law which says only 10% of energy is transferred from one trophic level to the next higher trophic level.

Additional Information

• Glucose is a simple sugar with the molecular formula C6H12O6. Glucose is the most abundant monosaccharide.

• Proteins are long chains of amino acids that are interconnected by peptide bonds.

• A.T.P is the energy currency of cells produced in mitochondria, these are required for various biochemical processes.

Q64. Answer: (a) Satpura

The correct answer is Satpura

Key Points

• Mount Dhupgarh or Dhoopgarh is the highest point peak situated in the Mahadeo Hills (Satpura Range), Madhya Pradesh, India.

• It is situated in Pachmarhi at an elevation of 1,352 meters (4,429 ft).

• The top of the hill is a popular area for tourists to watch sunsets.

• Pachmarhi Hill station is situated near the peak.

Additional Information

• Pachmarhi is a hill station located in the Hoshangabad district of Madhya Pradesh state of central India.

• It has been the destination of a cantonment since British Raj.

• It is extensively known as Satpura ki Rani ("Queen of Satpura"), situated at a height of 1067 m in a valley of the Satpura Range in the Hoshangabad district.

• Dhupgarh, the highest point (1,352 m) present in Madhya Pradesh, and the Satpura range is situated here.

• It is a section of Satpura Biosphere Reserve.

• It is also popular for Satpura Tiger Reserve, Satpura National Park, Lord Shiva, Pandavas of Mahabharata.

Q65. Answer: (c) Amitabh Bachchan

The correct answer is Amitabh Bachchan.

Key Points

• Amitabh Bachchan has been appointed as the brand ambassador of RBI's public awareness campaign

• RBI also launched a safety campaign advising people to remain healthy

• It is safe by not going to bank branches as the whole country was put under lockdown to help contain the spread of coronavirus infections.

• Amitabh Bachchan promoted digital banking during the lockdown period urging people to adopt digital payment and be safe.

Additional Information

• The RBI keeps on informing about dos and don'ts that have to be followed by customers to transact safely and securely as part of the public awareness initiative.

• The RBI has been running the campaign for more than a year not only in English and Hindi but in various regional languages for maximum reach.

• The RBI has beaten US Federal Reserve and European Central Bank on Twitter by emerging as the most popular central bank on the microblogging site, although with less monetary firepower.

• RBI's Twitter handle has 9.66 lakh followers while the world's most powerful central bank US Federal Reserve has only about 6.64 lakh followers and the Frankfurt-headquartered European Central Bank, the second most powerful monetary authority in the world, has 5.81 lakh followers.

Q66. Answer: (d) LANXU

The logic followed here is:

15789 is written as XTZAL

2346 is written as NPSU

Thus, 98216 will be written as 'LANXU'.

Hence, "Option 4" is the correct answer.

Q67. Answer: (c) 23

The logic followed here is:

18 + 17 = 16 + 19

35 = 35 (LHS = RHS)

And,

31 + 7 = 12 + 26

38 = 38 (LHS = RHS)

Similarly,

25 + 18 = 20 + ?

43 - 20 = ?

23 = ?

Hence, "Option 3" is the correct answer.

Q68. Answer: (d) Haridwar

The correct answer is Haridwar.

Key Points

• Kumbh Mela 2021 was organized at Haridwar, Uttarakhand.

• Kumbh Mela 2021 was held for only 30 days, from April 1 to 30 this year in view of the COVID-19 pandemic.

• The term "kumbh" comes from the Sanskrit word kumbha, which means "pitcher".

• It is also the Sanskrit name for Aquarius, the zodiac sign in which Jupiter resides during the Haridwar mela.

Additional Information

• Kumbh Mela

• Kumbh Mela is a religious festival that is celebrated four times over the course of 12 years, the site of the observance rotating between four pilgrimage places on four sacred rivers at Haridwar on the Ganges River, at Ujjain on the Shipra, at Nashik on the Godavari, and at Prayagraj.

• The festival is traditionally credited to the 8th century Hindu Philosopher and saint Adi Shankara.

• It is considered the "World's largest congregation of religious pilgrims".

• It has been inscribed on the UNESCO'sRepresentative List of Intangible Cultural Heritage of Humanity.

• The Kumbh Mela authorities said that the largest one-day attendance at the Kumbh Mela was 30 million on 10 February 2013.

Q69. Answer: (b) NFTDZVX

The logic followed here is:

UNSCRAMBLE is coded as GPXYTFNDZV

Therefore, MARBLES will be coded as

So, MARBLES is coded as 'NFTDZVX'.

Hence, "Option 2" is the correct answer.

Q70. Answer: (b) 11.22

The correct answer is 11.22

Key Points

• Dutee Chand created history by becoming the first Indian to win a gold medal at the Summer Universiade in Napoli, Italy.

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• India's star sprinter Chand won the gold in women's 100m with a timing of 11.22 seconds.
• Lisa KwaYie of Germany took the bronze in 11.39 seconds in the race.
• Running at lane No. 4, Dutee was the first to blast off the starting blocks out of the eight athletes.
• she made most of it to fend off a late challenge from Del Ponte (11.22) of Switzerland.

Additional Information
• India participated in the 2019 Summer Universiade in Naples, Italy.
• Dutee Chand is an Indian professional sprinter and current national champion in the women's 100 meters event.
• She is the third Indian woman to ever qualify for the Women's 100 meters event at the Summer Olympic Games.

Q71. Answer: (a) Chittaurgarh

The correct answer is Chittaurgarh

Key Points

• Queen Padmavati, also known as Rani Padmini, is traditionally associated with Chittaurgarh.
• She was the queen of Chittaurgarh and is renowned for her beauty and valor, as well as the legend of her self-sacrifice (Jauhar) to protect her honor during Alauddin Khilji's siege of Chittorgarh.
• The Delhi Sultan Alauddin Khilji, captivated by tales of Padmini's beauty, attacked Chittaurgarh to capture her.
• Despite a fierce defense, the fort eventually fell.
• This 16th-century epic poem romanticized Rani Padmini's story

Additional Information
• Chittaurgarh Fort:
• This massive fort is a UNESCO World Heritage Site and is deeply linked with the legend of Rani Padmini.
• The fort has 84 water bodies, including reservoirs, ponds, and stepwells, of which about 22 remain functional today.
• The fort was attacked three major times:
• 1303 CE: By Alauddin Khilji.
• 1535 CE: By Bahadur Shah of Gujarat.
• 1567 CE: By Emperor Akbar.
• The fort served as the capital of the Mewar kingdom and witnessed the dramatic events surrounding Rani Padmini.

Q72. Answer: (b) 32

Calculation:

We have,

$54 + [19 - \{15 - (6 - 16 \div 4 \times 8)\}]$

$\Rightarrow 54 + [19 - \{15 - (6 - 4 \times 8)\}]$

$\Rightarrow 54 + [19 - \{15 - (6 - 32)\}]$

$\Rightarrow 54 + [19 - \{15 - (-26)\}]$

$\Rightarrow 54 + [19 - \{15 + 26\}]$

$\Rightarrow 54 + [19 - 41]$

$\Rightarrow 54 + [-22]$

$\Rightarrow 54 - 22 = 32$

Therefore The correct answer is option (2).

Q73. Answer: (d) 41

Given:

There are three positive integers a, b and c such that their average is 35 and $a \leq b \leq c$. The median is (a + 18).

Formula used:

Average = (a + b + c) / 3

Median = b

Calculation:

Average = 35

$\Rightarrow (a + b + c) / 3 = 35$

$\Rightarrow a + b + c = 105$

Median = a + 18

=> b = a + 18

Since a ≤ b ≤ c:

a ≤ a + 18 ≤ c

=> c ≥ a + 18

Substitute b in the sum:

a + (a + 18) + c = 105

=> 2a + 18 + c = 105

=> c = 105 - 2a - 18

=> c = 87 - 2a

Since c ≥ a + 18:

=> 87 - 2a ≥ a + 18

=> 87 - 18 ≥ 3a

=> 69 ≥ 3a

=> a ≤ 23

To find the minimum value of c, we need the maximum value of a:

a = 23

=> b = 23 + 18 = 41

=> c = 87 - 2 × 23 = 41

Therefore The correct answer is option (4).

Q74. Answer: (b) 5

The logic followed here is :-

From the given two different dices the adjacent sides are as shown below :

As 3 is common on both the dices, it is clear that 1, 6, 2, and 5 are adjacent to it, and the remaining i.e. 4 will be opposite to it.

Opposite pairs:

6 → 5

1 → 2

3 → 4

So, the opposite side of "6" will be side "5".

Hence, the correct answer is "Option 2".

Q75. Answer: (c) Statement II is the reason, and statement I is an effect.

Statements:

The Cause (Statement II): The authorities decided to close the Taj Mahal for repairs starting from the 17th of the month. Once such a decision is made and announced, it creates a deadline for potential visitors.

The Effect (Statement I): Because the monument was scheduled to close on the 17th, tourists likely rushed to visit it on the last available Sunday (the 15th) before the closure. This explains the specific "crowd of tourists" mentioned in the first statement.

In reasoning tests, when one event (a future restriction) logically explains the intensity or occurrence of a preceding event (a sudden rush or crowd), it is treated as a Cause and Effect relationship.

Hence, the correct answer is "Option 3".

Q76. Answer: (c) 3.3

Given:

15% of 22

Formula used:

Percentage formula: (Percentage × Total)/100

Calculation:

15% of 22 = (15 × 22)/100

=> (15 × 22)/100 = 330/100

=> 3.3

Therefore The correct answer is option (3).

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Q77. Answer: (b) Fifteen percent of the total members of the Lok Sabha

The correct answer is Fifteen percent of the total number of members of the Lok Sabha

Key Points

• 91st Constitutional Amendment Act, 2003:

• Made the following provisions to limit the size of Council of Ministers, to debar defectors from holding public offices, and to strengthen the anti-defection law:

• The total number of ministers, including the Prime Minister, in the CentralCouncil of Ministers, shall not exceed 15% of the total strength of the LokSabha. Hence, Option 4 is correct.

• A member of either house of Parliament belonging to any political party who is disqualified on the ground of defection shall also be disqualified to be appointed as a minister.

• The total number of ministers, including the Chief Minister, in the Council of Ministers in a state shall not exceed 15% of the total strength of the Legislative Assembly of that state. But, the number of ministers, including the Chief Minister, in a state shall not be less than 12.

• Article 74 of the Constitution deals with the status of the council of ministers while Article 75 deals with the appointment, tenure, responsibility, qualification, oath, and salaries and allowances of the ministers.

• The COM consists of three categories of ministers, namely, cabinet ministers, ministers of state, and deputy ministers. At the top of all these ministers stands the Prime Minister.

• Articles spanning from 74 to 78 in Part V broadly deal with the Central Council of Minister.

ARTICLES	DESCRIPTION
74	Council of Ministers to aid and advise President
75	Other provisions as to Ministers
77	Conduct of business of the Government of India
78	Duties of the Prime Minister as respects the furnishing of information to the President, etc.
88	Rights of Ministers concerning the Houses.

Q78. Answer: (c) onion

Black pepper, cardamom, and cloves are spices, while onion is a vegetable used in cooking but not categorized as a spice.

Thus, out of all the options 'Onion' is the inconsistent one.

Hence, "Option 3" is the correct answer.

Q79. Answer: (c) 36

Given:

288/x and 108/x are natural numbers

Formula used:

x should be a common divisor of both 288 and 108.

Calculation:

To find the maximum value of x, we need to find the greatest common divisor (GCD) of 288 and 108.

Prime factorization of 288: $2^5 \times 3^2$

Prime factorization of 108: $2^2 \times 3^3$

GCD is the product of the lowest powers of all prime factors common to both numbers:

GCD = $2^2 \times 3^2$

=> GCD = 4×9

=> GCD = 36

Therefore The correct answer is option (3).

Q80. Answer: (d) 75

Given:

Marks in the first three subjects = 50 each

Average percentage in the first three subjects = 60%

Marks in the fourth subject = 54

Total percentage after four subjects = 64%

To Find:
The maximum marks for the fourth subject.
Solution:
1. Total marks in the first three subjects:
=> 50 × 3 = 150
2. Marks scored in the first three subjects (using average percentage):
=> 60% of 150
=> (60/100) × 150 = 90
3. Total marks scored after four subjects:
=> Marks in the first three subjects + Marks in the fourth subject
=> 90 + 54 = 144
4. Let the maximum marks for the fourth subject be x.
5. Total maximum marks for all four subjects:
=> 150 (for the first three subjects) + x (for the fourth subject)
6. Total percentage after four subjects:
(Total marks scored / Total maximum marks) × 100 = 64%
Substitute the values:
(144 / (150 + x)) × 100 = 64
=> 144 = 0.64 × (150 + x)
=> 144 = 96 + 0.64x
=> 48 = 0.64x
=> x = 48 / 0.64
=> x = 75
Therefore The maximum marks for the fourth subject is 75.

Q81. Answer: (c) 280

Shortcut Trick
Identify exponents of prime factorization: 2^7, 3^3, 5^4, and 7^1.
For even factors, use formula: (exponent of 2) × (exponent of 3 + 1) × (exponent of 5 + 1) × (exponent of 7 + 1).
Even factors = 7 × (3 + 1) × (4 + 1) × (1 + 1)
Even factors = 7 × 4 × 5 × 2 = 280.
Therefore The correct answer is 280.
Alternate Method
Given: N = 2^7 × 3^3 × 5^4 × 7^1
Formula: Even Factors = Total Factors − Odd Factors
=> Total Factors = (7 + 1) × (3 + 1) × (4 + 1) × (1 + 1)
=> Total Factors = 8 × 4 × 5 × 2 = 320
=> Odd Factors (set exponent of 2 to 0) = 1 × (3 + 1) × (4 + 1) × (1 + 1)
=> Odd Factors = 4 × 5 × 2 = 40
=> Even Factors = 320 − 40 = 280
Comparing this result with the given options, the number of even factors is 280, which is Option (3).
Therefore The correct answer is 280.
Additional Information
Total Number of Factors
For any number N = p^a × q^b × r^c, total factors = (a + 1)(b + 1)(c + 1).
Odd and Even Factors
Even factors must have 2^x where x ≥ 1. Odd factors only contain powers of odd prime numbers (3, 5, 7, etc.).
Sum of Factors
The sum of factors is given by [(p^(a+1) − 1)/(p − 1)] × [(q^(b+1) − 1)/(q − 1)] × ...
Product of Factors
The product of all factors of a number N is N^((Total Factors / 2)).

Q82. Answer: (b) 9 and 10

Given:

The square root of 90 will lie between _____.

Formula used:

Identify the two consecutive whole numbers between which the square root of 90 lies.

Calculation:

$9^2 = 81$

$10^2 = 100$

Since $81 < 90 < 100$

$\Rightarrow 9 < \sqrt{90} < 10$

Therefore The correct answer is option 2.

Alternate Method Given:

The square root of 90.

To Find:

The range in which the square root of 90 lies.

Calculation:

We know:

$9 \times 9 = 81$

$10 \times 10 = 100$

Since 90 lies between 81 and 100, the square root of 90 will lie between 9 and 10.

Therefore The square root of 90 lies between 9 and 10 (Option 2).

Q83. Answer: (a) Nest

The logic followed here is:

Logic: Habitat Relationship

Here,

Rabbit : Burrow → Burrow is the habitat of a Rabbit.

Similarly,

Sparrow : Nest → Nest is the habitat of a Sparrow.

Hence, the correct answer is "Option 1".

Q84. Answer: (c) 93°

Given:

Points A, B and C lie on a circle with centre O. angle ACB = 46.5º

Formula used:

angle AOB = 2 × angle ACB (The angle at the center is twice the angle at the circumference)

Calculations:

angle AOB = 2 × 46.5º

$\Rightarrow$ angle AOB = 93º

Therefore The correct answer is option (3).

Q85. Answer: (c) (3 - √3)/6

Given:

$\sin x - 3 \cos x = \sqrt{3} \cos x$

To Find:

The value of cot x.

Calculation:

Rearrange the equation:

$\sin x = (\sqrt{3} + 3) \cos x$

Divide both sides by cos x:

$\sin x / \cos x = \sqrt{3} + 3$

$\tan x = \sqrt{3} + 3$

$\cot x = 1 / \tan x = 1 / (\sqrt{3} + 3)$

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Rationalize the denominator:
cot x = (1 / (√3 + 3)) × ((√3 - 3) / (√3 - 3))
cot x = (√3 - 3) / ((√3 + 3)(√3 - 3))
cot x = (√3 - 3) / (3 - 9)
cot x = (√3 - 3) / -6
cot x = (3 - √3) / 6
Therefore The value of cot x is (3 - √3) / 6 (Option 3).

Q86. Answer: (c) 16 : 17

Given:
Sales of books (in thousands) for branches P2 and P4 in 2010 and 2011:
P2 (2010): 85
P2 (2011): 75
P4 (2010): 80
P4 (2011): 90
Formula used:
Total sales of branch P2 = Sales in 2010 + Sales in 2011
Total sales of branch P4 = Sales in 2010 + Sales in 2011
Ratio = Total sales of P2 / Total sales of P4
Calculation:
Total sales of branch P2:
=> 85 + 75 = 160
Total sales of branch P4:
=> 80 + 90 = 170
Ratio:
=> 160 : 170
=> 16 : 17
Therefore The ratio of the total sales of branch P2 to the total sales of branch P4 is 16:17.

Q87. Answer: (a) 19 August

Given:
The son-in-law remembers the birthday is before August 20.
The wife remembers the birthday is after August 18 and before August 22
Analyze the son's statement.
The son-in-law is certain that the birthday occurs before August 20.
Possible dates based on his memory are: August 18, 19.
Analyze the wife's statement.
The wife is certain that the birthday occurs after August 18 and before August 22.
Possible dates based on her memory are: August 19, 20, 21.
The common date satisfying both statements is August 19.
Thus, The mother-in-law's birthday is on August 19.
Hence, the correct answer is "Option 1".

Q88. Answer: (a) 24%

Given:
Marketing expenditure over the years:
1998: 45
1999: 56
2000: 53
2001: 67
2002: 49
Procurement expenditure over the years:
1998: 185

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1999: 274
2000: 163
2001: 252
2002: 241
Formula used:
Total expenditure on marketing = Sum of marketing expenditures
Total expenditure on procurement = Sum of procurement expenditures
Percentage = (Total Marketing Expenditure / Total Procurement Expenditure) × 100
Calculation:
Total expenditure on marketing:
=> 45 + 56 + 53 + 67 + 49 = 270
Total expenditure on procurement:
=> 185 + 274 + 163 + 252 + 241 = 1115
Percentage:
=> (270 / 1115) × 100
=> 24.21%
Therefore The total expenditure on marketing was approximately 24.21% of the total expenditure on procurement.
The correct option is 24%.

Q89. Answer: (c) 79 : 62

Given:
The number of men and women in the three districts are:
District 1: Men = 430, Women = 240
District 2: Men = 250, Women = 440
District 3: Men = 350, Women = 180
Calculation:
Step 1: Determine how many men to move from District 1 to make the ratio of men to women in District 1 = 1 : 1.
Current difference in District 1: Men - Women = 430 - 240 = 190
To make the ratio 1 : 1, move 190 men from District 1.
Step 2: Distribute these 190 men equally between District 2 and District 3:
Men moved to District 2 = 190 / 2 = 95
Men moved to District 3 = 190 / 2 = 95
Step 3: Calculate the new number of men and women in Districts 2 and 3 collectively:
New numbers in District 2:
Men = 250 + 95 = 345
Women = 440
New numbers in District 3:
Men = 350 + 95 = 445
Women = 180
Total men in Districts 2 and 3:
Total men = (345 + 445) = 790
Total women in Districts 2 and 3:
Total women = (440 + 180) = 620
Step 4: Calculate the new ratio of men to women in Districts 2 and 3:
New ratio = Total men : Total women = 790 : 620
Simplify: 790 / 620 = 79 / 62
Therefore The new ratio of men to women in Districts 2 and 3 collectively is 79 : 62.

Q90. Answer: (c) 59

The logic followed here is:
Hence, "Option 3" is the correct answer.

Q91. Answer: (a) 33

The logic followed here is:

4 + 6 × 7 = 46

4 + 42 = 46

46 = 46 (LHS = RHS)

And,

6 + 8 × 8 = 70

6 + 64 = 70

70 = 70 (LHS = RHS)

Similarly,

3 + 5 × 6 = ?

3 + 30 = ?

33 = ?

Hence, "Option 1" is the correct answer.

Q92. Answer: (a) Only assumption 2 is implicit.

Given Statement: "Business class tickets have been priced at Rs. 50,000, which is very high."

Now,

Assumptions:

1. The prices of tickets for other classes have been kept reasonable - Not Implicit (The statement does not provide any information about the prices of tickets for other classes, so we cannot make this assumption.)

2. Rs. 50,000 is a huge amount to pay for a business class ticket - Implicit (The statement directly mentions that Rs. 50,000 is considered very high for a business class ticket, which implies that Rs. 50,000 is a huge amount.)

Here, Only assumption 2 is implicit.

Hence, the correct answer is "Option 1".

Q93. Answer: (c) greed

Gratitude, patience, and honesty are positive virtues, while greed is a negative trait and not a virtue.

Thus, out of all the options 'Greed' is the inconsistent one.

Hence, "Option 3" is the correct answer.

Additional InformationGratitude is a positive virtue, reflecting thankfulness and appreciation.

Patience is a positive virtue, showing the ability to wait calmly without frustration.

Honesty is a positive virtue, reflecting truthfulness and integrity.

Greed is a negative trait, characterized by excessive desire for more than one needs or deserves.

Q94. Answer: (c) Crime

The logic followed here is:

Logic: Profession and its primary concern.

Here,

Doctor : Disease → Doctor deals with diseases.

Similarly,

Police : Crime → Police deals with crime.

Hence, the correct answer is "Option 3".

Q95. Answer: (d) 151

The logic followed here is:

Hence, "Option 4" is the correct answer.

Additional InformationPrime numbers from 1 - 200:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199.

Q96. Answer: (d) Rs. 15, Rs. 23

Given:

The cost of two bus tickets from city P to Q and three bus tickets from city P to R is Rs. 99.

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The cost of three bus tickets from city P to Q and two bus tickets from city P to R is Rs. 91.
Formula used:
Let the fare from city P to Q be Rs. x and the fare from city P to R be Rs. y.
2x + 3y = 99
3x + 2y = 91
Calculations:
2x + 3y = 99 ... (i)
3x + 2y = 91 ... (ii)
Multiplying equation (i) by 3, we get:
6x + 9y = 297 ... (iii)
Multiplying equation (ii) by 2, we get:
6x + 4y = 182 ... (iv)
Subtracting equation (iv) from equation (iii), we get:
6x + 9y - (6x + 4y) = 297 - 182
=> 5y = 115
=> y = 23
Substituting the value of y in equation (i), we get:
2x + 3 × 23 = 99
=> 2x + 69 = 99
=> 2x = 30
=> x = 15
Therefore The fare from city P to Q is Rs. 15, and from city P to R is Rs. 23. The correct answer is option (4).

Q97. Answer: (a) 914491

The logic followed here is:
NEPAL is written as 14516112
Similarly,
INDIA is written as
Hence, "Option 1" is the correct answer.

Q98. Answer: (d) 2

Given:
R, S and T represent people who like Rose, Sunflower and Tulip respectively. The number of people is R = 10, S = 12 and T = 16.
1) There are 3 people who like Rose, Sunflower and Tulip.
2) 2 of them like Rose and Sunflower.
3) 3 people like Rose and Tulip, and 4 people like Sunflower and Tulip.
Thus, the number of people who like only Rose (10 - 3 - 3 - 2) = 2
Hence, "Option 4" is the correct answer.

Q99. Answer: (b) [figure]

The diagram that best represents the relationship between the given classes is shown below :
Planet is a subset of the Solar System, as planets exist within the Solar System.
Solar System is A subset of the Universe.
Hence, "Option 2" is the correct answer.
Additional InformationUniverse: Includes the Solar System and all planets.
Solar System: A subset of the Universe, containing planets, the Sun, moons, and other celestial objects.

Q100. Answer: (c) Some deer are avocado.

The least possible Venn diagram for the given statements is as shown below :
Conclusions:
Option 1) All deer are parasites → Does not follow (As some deer are parasites. So it is possible but not definite.)
Option 2) All avocados are parasites → Does not follow (As all parasites are avocado. So it is possible but not definite.)
Option 3) Some deer are avocado → Follow (As some deer are parasites and all parasites are avocado. As whole parasites

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comes in avocado and has some part common with deer, therefore it is true)

Option 4) There are no parasites, avocado → Does not follow (As all parasites are avocado. As whole parasites comes in avocado, therefore it is false.)

Therefore Here, Only conclusion 'Some deer are avocado' follows.

Hence, the correct answer is "Option 3".

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