RRB NTPC CBT-I Official Paper (Held On: 13 Jan 2021 Shift 1) (Previous Year Paper)

RRB NTPC • 2021 • 100 questions • 90 minutes • Answer key and solutions

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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. Who described the kingdom of Awadh as 'a cherry that will drop into our mouth one day'?

(a) Lord Wellesley
(b) Lord Dalhousie
(c) Lord Curzon
(d) Lord Henry Hardinge

Q2. Which of the following correctly depicts Indian Standard Time?

(a) GMT + 4.30
(b) GMT - 4.30
(c) GMT + 5.30
(d) GMT - 5.30

Q3. Who built the Shahi (Royal) road to strengthen and consolidate his empire from the Indus valley to the Sonar Valley in Bengal, and it was renamed the GT road during the British period?

(a) Aurangazeb
(b) Alam Shah
(c) Bhahadur Shah Zafar
(d) Sher Shah Suri

Q4. Aadhaar is a 12-digit unique number that is issued by the _____.

(a) Unique Indian Digital Authority of India
(b) Unique Indian Demographic Association of India
(c) Unique Identification Association of India
(d) Unique Identification Authority of India

Q5. If LAPTOP is coded as 28 16 36 and DROUGH is coded as 12 25 36, then what is the code for MEMBER?

(a) 31 10 05
(b) 31 10 15
(c) 31 11 15
(d) 13 01 51

Q6. Which of the following banks was established in India at Calcutta under European Management (in 1770)?

(a) Indus Bank of India
(b) Bank of Hindustan
(c) National Bank of India
(d) Bank of India

Q7. If the speeds of a train in 10 successive hours are a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10, then the average speed of the train is:

(a) median of a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10
(b) geometric mean of a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10
(c) harmonic mean of a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10

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(d) arithmetic mean of a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10

Q8. In an election, candidate A got 75% of the total valid votes. If 15% of total votes were declared invalid and the total number of votes is 560000, then the number of valid votes polled in favor of A is:

(a) 357000
(b) 358000
(c) 355000
(d) 356000

Q9. The ratio in lowest terms of 4767 and 11123 is:

(a) 3 : 17
(b) 3 : 27
(c) 3 : 13
(d) 3 : 7

Q10. Three of the four rivers given as options share a certain relation while one is different. Select the river which is different from the rest.

(a) Ganga
(b) Narmada
(c) Brahmaputra
(d) Indus

Q11. The number 1.112123123412345..... is a/an:

(a) natural number
(b) rational number
(c) irrational number
(d) integer

Q12. Name the first Indian Woman to be appointed to the International Cricket Council (ICC) as a match referee.

(a) GS Lakshmi
(b) Jhulan Nishit Goswami
(c) Mithali Raj
(d) Harpreet Kaur

Q13. The greatest number of four digits which is divisible by 15, 20, 25 and 45 is:

(a) 9990
(b) 9000
(c) 9900
(d) 9090

Q14. When cost price of x articles is equal to selling price of y articles, the profit is 25%. Then x : y is equal to:

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

Q15. Name the place in India where one can find the Zero Mile Stone consisting of four horses and a pillar made up of sandstone.

(a) Bhopal
(b) Itarsi
(c) Nagpur
(d) Surat

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Q16. The value of √4 is:

(a) only -2
(b) only 2
(c) 4
(d) 2 or -2

Q17. If 34@24?6#5 = 131 and 15@18?3#9 = 81, then which of the given numbers will be the value of the expression: 17@72?9#5

(a) 51
(b) 131
(c) 41
(d) 81

Q18. A collection of interrelated files and a set of programs that allow users to access and modify these files is known as _____.

(a) System management
(b) Data analytic system
(c) Database management system
(d) Data files

Q19. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

A. Some bakeries are outlet showrooms.

B. All outlet showrooms are shops.

Conclusion:

1. Some shops are bakeries as well as outlet showrooms.

2. All bakeries are shops.

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

Q20. The sum of two angles of a triangle is equal to its third angle. Find the measure of the third angle?

(a) 50°
(b) 90°
(c) 120°
(d) 60°

Q21. If J = 17 and N = 13, then JUNIOR = ?

(a) 1761318129
(b) 1771318129
(c) 1751318129
(d) 1741318129

Q22. Who built the Buland Darwaza, which is located in Fatehpur Sikri?

(a) Babar
(b) Akbar
(c) Noor Jahan
(d) Shah Jahan

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Q23. India's 'Statue of Unity' is situated in the state of:

(a) Karnataka
(b) Maharashtra
(c) Gujarat
(d) Tamil Nadu

Q24. Who provided the basic theory about the nature of matter?

(a) John Dalton
(b) Lavoisier
(c) John Milton
(d) Mandel

Q25. When did India's first biofuel-powered flight land at the Indira Gandhi International Airport in New Delhi from Dehradun?

(a) June, 2018
(b) July, 2018
(c) August, 2018
(d) September, 2018

Q26. Let N be the greatest number such that when 1300, 4660, and 6900 are divided by N, the remainder is the same. The sum of the digits in N is:

(a) 4
(b) 6
(c) 5
(d) 3

Q27. A student erroneously multiplied a number by 2/5 instead of 5/2. The percentage error in the calculation is:

(a) 24%
(b) 84%
(c) 74%
(d) 54%

Q28. Which of the following is NOT a part of the Indian Parliament?

(a) President
(b) State Legislative Assemblies
(c) Lok Sabha
(d) Rajya Sabha

Q29. The sides of a parallelogram are $3x + 2$ and $5x + 4$. It has a perimeter of 44 cm and an area of 64 cm^2. The value of the acute angle between its sides in degrees is:

(a) between 60° and 75°
(b) greater than 75°
(c) less than 30°
(d) between 30° and 60°

Q30. The Swaraj Party was formed in the year _____.

(a) 1930
(b) 1923
(c) 1921
(d) 1933

Q31. A boy does 1/4 th of the work done by a man in the same time. 15 men complete a particular work in 17 days. If 3 men are replaced by 3 boys, the work will be completed in:

(a) 18 days
(b) 20 days

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(c) 24 days
(d) 22 days

Q32. Select the number set from the given options that can replace the question mark (?).
3 8 4 6 : 9 64 16 36 :: ? : 25 1 64 49
(a) 5 1 3 7
(b) 5 1 7 8
(c) 5 1 8 7
(d) 5 1 3 2

Q33. United Nations Day is celebrated every year on:
(a) 30^(th) October
(b) 4^(th) November
(c) 24^(th) October
(d) 26^(th) June

Q34. Consider the given statement (s) and decide which of the given assumptions is/are implicit in the statement.
Statement:
Chain snatching incidents are increasing day-by-day.
Assumptions:
I. Police personnel are involved in such incidents.
II. Chain snatchers have no fear of punishment.
(a) Both assumptions I and II are implicit
(b) Only assumption II is implicit
(c) Neither assumptions I nor II are implicit
(d) Only assumption I is implicit

Q35. Vikram Sarabhai Space Centre is located at:
(a) Bengaluru
(b) Thiruvananthapuram
(c) Mumbai
(d) Hyderabad

Q36. The ratio of the perimeter to the length of a rectangle is 5 : 1. If the area of the rectangle is 216 cm^2, then the length of the rectangle (in cm) is:
(a) 14
(b) 18
(c) 16
(d) 12

Q37. The C++ programming language was developed at AT & T Bell Laboratories in the early _____ by Bjarne Stroustrup.
(a) 1960s
(b) 1970s
(c) 1980s
(d) 1990s

Q38. A man bought a horse for a certain amount and sold it at a loss of 8%. If he had received Rs. 1,800 more, he would have gainer 141/2%. The cost price of the horse is:
(a) Rs. 3500
(b) Rs. 8000
(c) Rs. 5000
(d) Rs. 6000

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Q39. Ram is at A and Shyam is at B. They proceed towards each other simultaneously. After meeting each other in the way, Ram takes 2 h to reach B and Shyam takes 8 h to reach A. If the speed of Ram is 40 km/h, the speed of Shyam is:

(a) 20 km/h
(b) 30 km/h
(c) 25 km/h
(d) 35 km/h

Q40. In which of the following continent are the 6 most populated countries located?

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

Q41. Who was the young economist involved in drafting the plan of the First Five Year Plan (1951-1956)?

(a) KN Raj
(b) PC Mahalanobis
(c) Swaran Singh
(d) BV Keskar

Q42. Name the person who was appointed as the first Surveyor General of India in 1815.

(a) Colin Mackenzie
(b) Ottoman
(c) Abul Fazal
(d) Bernier

Q43. A man completes a work in 15 days by working 4 h per day for 5 days, 5 h per day for 5 days and 6 h per day for 5 days. If he works 8 h per day with half an hour lunch break he will complete the work in:

(a) 12 days
(b) 10 days
(c) 7.5 days
(d) 8 days

Q44. Which of the following is the headquarters of World Health Organisation?

(a) New York
(b) Paris
(c) Geneva
(d) Vienna

Q45. A rectangle has a length 3 m more than its width and a perimeter numerically equal in value to its area. The integer part of the value of its diagonal is:

(a) 7
(b) 6
(c) 8
(d) 9

Q46. Which of the following is valid for $(a + b)^2 = a^2 + b^2$

(a) May be true for only a finite number of (a, b)
(b) May be true for exactly one pair (a, b)
(c) May be true for infinite number of (a, b)
(d) Cannot be true for any set of (a, b)

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Q47. A solid sphere of surface area S, is cut into four equal pieces by two radial planes. The total surface area of all the pieces:

(a) becomes 2S
(b) remains S
(c) becomes 3S
(d) becomes 4S

Q48. The _____ is a simple query language used for accessing, handling and managing data in a relational database.

(a) ISO
(b) DDL
(c) DML
(d) SQL

Q49. How many times has India entered the ICC Men's Cricket World Cup (ODI) finals?

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

Q50. If OFG = M and ICM = P, then find KDE = ?

(a) I
(b) J
(c) H
(d) K

Q51. Aman's great-grandfather is 105 years old. Aman's father Ram Singh's age is 1/3 of his grandfather. Five years ago, when Aman was born, Ram Singh's mother was double the age of Ram Singh. What is the difference of age between Aman and Ram Singh?

(a) 20 Years
(b) 25 Years
(c) 35 Years
(d) 30 Years

Q52. When a number is divided by 45, it leaves a remainder of 28. The remainder when the same number is divided by 15 is:

(a) 12
(b) 10
(c) 13
(d) 11

Q53. The HCF and LCM of 36 and N are 9 and 180 respectively. N is equal to:

(a) 90
(b) 65
(c) 45
(d) 63

Q54. Megalopolis a Greek word meaning "great city", was popularised by _____ (1957).

(a) Jean Gottman
(b) Patrick
(c) Lewis Mumford
(d) Griffin

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Q55. Ram runs faster than Sumit whereas Sumit is faster than Hardik and Tarun. After a training of three months Hardik will be able to beat Ram. But Tarun would not be able to beat even Sumit. If a competitive race takes place after three months training, which of the following could be the sequence of the top three runners?

(a) Hardik, Ram and Tarun
(b) Ram, Sumit and Hardik
(c) Ram, Hardik and Sumit
(d) Hardik, Ram and Sumit

Q56. In a row of girls, Fatima is 15^(th) from one extreme and 9^(th) from the other. Find the total number of girls in the row.

(a) 25
(b) 23
(c) 24
(d) 26

Q57. Which of the following principle is related to solar power systems?

(a) Photosynthesis effect
(b) Photokinetic effect
(c) Photovoltaic effect
(d) Photoelectric effect

Q58. Select the option that is related to the third term in the same way as the second term is related to the first term.

EIOR : HFRO :: JLQW : ?

(a) WBLY
(b) MITT
(c) HSDL
(d) CYTO

Q59. The area of a rectangle is 60 units and its perimeter is 34 units. Then its diagonal is:

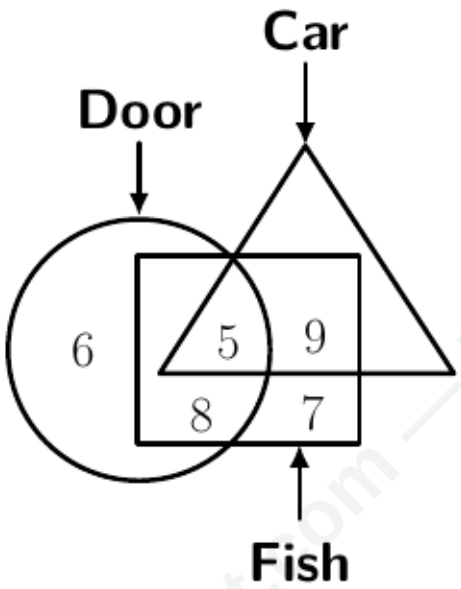
(a) 13 units
(b) 14 units
(c) 12 units
(d) 17 units

Q60. If $(a + b\sqrt{2})^2 = 19 + 6\sqrt{2}$, then a is equal to:

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

Q61. How many doors are fish?

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(a) 13
(b) 8
(c) 6
(d) 14

Q62. Theophrastus is called the father of:
(a) Botany
(b) Chemistry
(c) Zoology
(d) Physics

Q63. The numbers x and y are such that x : y = 4 : 5. If x is more than z by 20%, then y will be more than z by:
(a) 30%
(b) 50%
(c) 60%
(d) 40%

Q64. In which year did the voting age for the Lok Sabha and the State Legislative Assembly elections change from 21 to 18 years?
(a) 1988
(b) 1998
(c) 2001
(d) 1991

Q65. Which of the following cities is known as 'The City of Palaces' India?
(a) Jaipur
(b) Lucknow
(c) Patna
(d) Kolkata

Q66. If x% of y = y% of z, then:
(a) x = 4z
(b) x = 3z
(c) x = z
(d) x = 2z

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Q67. Famous singer and Bharat Ratna awardee, Bhupen Hazarika, belongs to the state of:

(a) Nagaland
(b) Odisha
(c) Assam
(d) West Bengal

Q68. The region where all of the light from the source is blocked is called:

(a) Antumbra
(b) Shadow
(c) Umbra
(d) Penumbra

Q69. The Reserve Bank of India was established on 1 April _____ with a share capital of Rs. 5 crore.

(a) 1935
(b) 1945
(c) 1940
×
duplicate options found. English Question 1 options 2,3
(d) 1930

Q70. The NITI Aayog was formed by replacing the Planning Commission of India on _____ 2015.

(a) 1^(st) February
(b) 2^(nd) March
(c) 1^(st) January
(d) 2^(nd) April

Q71. If 67 = 1764 and 93 = 729, then which of the given options will be the value of 74 = ?

(a) 784
(b) 567
(c) 847
(d) 972

Q72. In 1798, who became the Governor General and built a massive palace, Government House, for himself in Calcutta?

(a) Lord Bentinck
(b) Lord Clive
(c) Lord Wellesley
(d) Lord Cornwallis

Q73. In a bucket, milk and water are mixed in the ratio 2 : 1. If the ratio of milk to water is to be 1 : 2, the quantity of water to be added to the mixture is:

(a) 1/3 of the bucket
(b) half of the bucket
(c) one full bucket
(d) 1/4 of the bucket

Q74. Lengths of a triangle are positive integers. If two of its sides measure 6 cm, 3 cm then the number of such distinct triangles is:

(a) 5
(b) 7
(c) 9
(d) 3

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Q75. Biogas is an excellent fuel as it contains up to 75% _____.

(a) sulphide
(b) hydrogen
(c) methane
(d) oxygen

Q76. A laptop costs Rs. 27,000. You have to pay 15% extra to purchase an extended warranty of 2 years. What will be the final cost of the laptop if 6% GST must be paid on the whole?

(a) Rs. 31,293
(b) Rs. 32,913
(c) Rs. 32,670
(d) Rs. 31,050

Q77. Under whose presidency did the Indian National Congress declare Poorna Swaraj as its ultimate goal on December 19, 1929, at Lahore?

(a) Subhash Chandra Bose
(b) VD Savarkar
(c) Jawahar Lal Nehru
(d) Mahatma Gandhi

Q78. In which year did India conduct its second nuclear test in Pokhran?

(a) 1998
(b) 1996
(c) 2001
(d) 2003

Q79. $(3\sqrt{5} + \sqrt{125})/(\sqrt{80}+6\sqrt{5})$ is:

(a) an irrational number
(b) an integer
(c) a rational number
(d) a natural number

Q80. _____ was Chef de Mission of the Indian contingent at the 2018 Asian Games.

(a) Vinayak Singh
(b) Pawan Kumar
(c) Brij Bhushan Saran Singh
(d) Sushil Kumar

Q81. Which of the following options is equal to

$16 \div 4 \times 2 - 5 + 1$?

(a) $\{(16 \div 4) \times 2\} - (5 + 1)$
(b) $[\{(16 \div 4) \times 2\} - 5] + 1$
(c) $\{16 \div (4 \times 2)\} - (5 + 1)$
(d) $[\{16 \div (4 \times 2)\} - 5] + 1$

Q82. Who was the First Governor General of free India?

(a) Lord Irwin
(b) Lord Wavel
(c) Lord Mountbatten
(d) Lord Willingdon

Q83. The 'Ganga Gram Project' is launched by the:

(a) Ministry of Human Resource Development
(b) Ministry of Youth Affairs and Sports
(c) Ministry of Rural Development

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(d) Ministry of Drinking Water and Sanitation

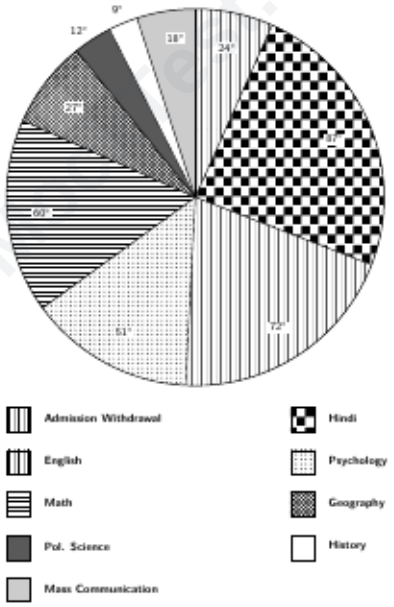
Q84. The semicircle of area 1250 π cm² is inscribed inside a rectangle. The diameter of the semicircle coincides with the length of the rectangle. The area of the rectangle is:

(a) 2000 cm²
(b) 4000 cm²
(c) 5000 cm²
(d) 3000 cm²

Q85. Name the world famous scientist known for his theory of relativity.

(a) Christian Bernard
(b) Thomas Alva Edison
(c) John Dalton
(d) Albert Einstein

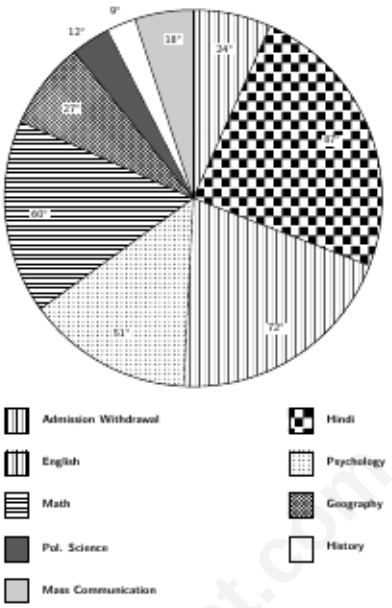
Q86. There are 1800 students in a college. The given pie-chart represents (in degrees) the number of students studying various subjects. Study the chart and answer the question below it.



How many students are studying maths in college?

(a) 240
(b) 260
(c) 300
(d) 280

Q87. There are 1800 students in a college. The given pie-chart represents (in degrees) the number of students studying various subjects. Study the chart and answer the question below it



If the Political Science course is shut down and students are equally distributed between History and Mass Communication, what would be the increase in the number of students studying Mass Communication?

(a) 75
(b) 120
(c) 30
(d) 90

Q88. The given table represents the height (in cm) of 50 students of a class.:

Height (in cm)	**156**	**154**	**155**	**151**	**157**	**152**	**153**
Number of students	8	5	12	5	6	4	10

How many students have a height of more than 151 cm but less than 156 cm?

(a) 14
(b) 19
(c) 31
(d) 50

Q89. The following table shows the weight (in kg) of 5 workers in a factory:

Weight (in Kg)	**65**	**55**	**70**	**50**	**60**

What is the average weight of the workers?

(a) 70
(b) 60
(c) 55
(d) 65

Q90. Select the option that is related to the third term in the same way as the second term is related to the first term.

TITIKSHA: TAIHTSIK :: HARSHITA : ?

(a) HTAHRISH
(b) HAATRIHS
(c) HAATRISH
(d) HAATSHRI

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Q91. Select the number from the given options that can replace the question mark (?) in the given series.

7, 14, 21, 28, ?

(a) 35
(b) 32
(c) 30
(d) 26

Q92. Read the given statement and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts. decide which of the conclusions logically follow(s) from the statement.

Statement:

Villagers have a cooperative attitude towards any stranger.

Conclusions:

I. Urban people have an uncooperative attitude towards strangers.

II. Urbanisation destroys our moral values.

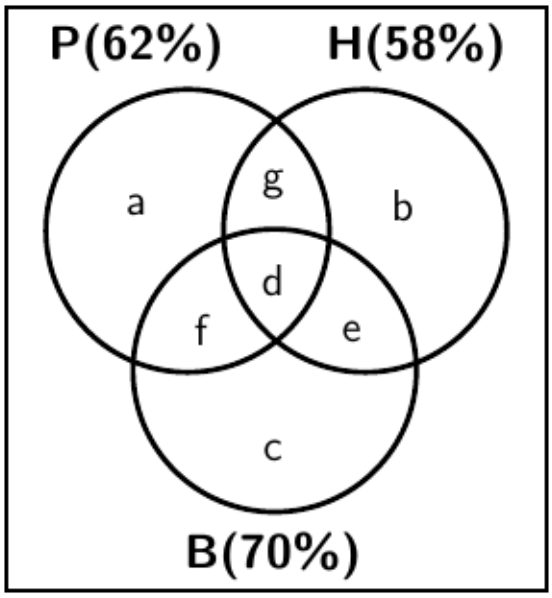
(a) Neither I nor II follows
(b) Only II follows
(c) Only I follows
(d) Either I or II follows

Q93. Select the option that is related to the third term in the same way as the second term is related to the first term.

Himalayas : Ganga :: Satpura : ?

(a) Yamuna
(b) Cauvery
(c) Godavari
(d) Narmada

Q94. Study the given Venn diagram and answer the question that follows.



A State has 7500 officers. Among them, 62% officers are punctual (P), 58% officers are honest (H) and 70% officers are brave (B). 38% officers are punctual (P) and honest (H), 48% are honest (H) and brave (B) and 36% are punctual (P) and brave (B).

What percentage of the officers are punctual (P), honest (H) and brave (B)?

(a) 90%
(b) 22%
(c) 68%
(d) 32%

Q95. Seven persons M, N, O, P, Q, R and S are sitting one above the other on a ladder (not necessarily in the same order). Only four persons sit between O and R. Only two persons sit between N and M and M sits immediately above Q. O sits below M. N sits above M.

How many persons are sitting between P and S?

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

Q96. If WOMEN is coded as XMPAS, then how is TREND coded?

(a) UPIJH
(b) UPJIH
(c) UHPIJ
(d) UPHJI

Q97. Select the number set which is different from the rest.

(a) (50, 85)
(b) (63, 91)
(c) (32, 48)
(d) (14, 27)

Q98. Select the letter-cluster from the given options that can replace the question mark (?) in the given series.

ZHC, XLF, VPL, ?

(a) TTX
(b) TPX
(c) HCP
(d) TXT

Q99. There are twelve persons sitting in a circle do not face each other keeping equal distance between neighbouring members.

L and H are sitting opposite to each other while G and I are sitting opposite to each other.

L is sitting to the immediate right side of I.

A is sitting immediately next to and in-between H and C.

On the basis of the above information select the correct statement from among those given in the options.

(a) A is 5th person to the left of I.
(b) I is 4th person to the right of C.
(c) G is sitting to immediate left of H.
(d) C and L are sitting beside each other.

Q100. In a certain code language. 'WMHKRDFL' is written as 'RGACMXYD'. What is the code for 'RSLTKQMN' in that code language?

(a) MMELFKFF
(b) MNDLFKEE
(c) MNELFKEF
(d) MMDLFKEF

ANSWER KEY

1	b	2	c	3	d	4	d	5	b	6	b	7	d	8	a	9	d	10	b
11	c	12	a	13	c	14	b	15	c	16	b	17	b	18	c	19	d	20	b
21	a	22	b	23	c	24	a	25	c	26	a	27	b	28	b	29	d	30	b
31	b	32	c	33	c	34	b	35	b	36	d	37	c	38	b	39	a	40	a
41	a	42	a	43	b	44	c	45	b	46	c	47	a	48	d	49	d	50	a

51	d	52	c	53	c	54	a	55	d	56	b	57	c	58	b	59	a	60	c
61	a	62	a	63	b	64	a	65	d	66	c	67	c	68	c	69	a	70	c
71	a	72	c	73	c	74	a	75	c	76	b	77	c	78	a	79	c	80	c
81	b	82	c	83	d	84	c	85	d	86	c	87	c	88	c	89	b	90	c
91	a	92	a	93	d	94	d	95	c	96	d	97	d	98	a	99	c	100	a

SOLUTIONS

Q1. Answer: (b) Lord Dalhousie

The correct answer is Lord Dalhousie.

• Lord Dalhousie described the kingdom of Awadh as "a cherry that will drop into our mouth one day".

• He said this in 1851. In 1856, the kingdom was formally annexed to the British Empire.

Additional Information

• Lord Dalhousie (1848-1856):

• Opened the first Railway line from Bombay to Thane in 1853.

• Doctrine of Lapse.

• Established Postal system.

• Passed Widow Remarriage Bill.

• Lord Cornwallis (1786-1793):

• Introduced - Permanent Settlement of Bengal and Zamindari System.

• Police reforms.

• Introduced Civil Services in India.

• Lord Curzon (1899-1905):

• Partition of Bengal in 1905 into 2 provinces: Bengal and East Bengal.

• Passed Ancient Monuments Act in 1904.

• Established Archaeological Survey of India.

• Lord Henry Hardinge (1910-1916):

• Attempted to modernize the equipment of the army.

• Capital shifted to Delhi from Kolkata.

Q2. Answer: (c) GMT + 5.30

The correct answer is GMT + 5.30.

• Indian Standard Time is plus 5.30 hours from the GMT.

• The Indian Standard Time is calculated from 82°30'E meridian passing through Mirzapur.

• It does not take into account daylight saving time along with other seasonal factors.

• India has an only a one-time zone.

Additional Information

• Greenwich Mean Time (GMT):

• Greenwich Mean Time (GMT), the name for the mean solar time of the longitude (0°) of the Royal Greenwich Observatory in England.

• The meridian at this longitude is called the prime meridian or Greenwich meridian.

Q3. Answer: (d) Sher Shah Suri

The correct answer is Sher Shah Suri.

• Sher Shah Suri the Shahi (Royal) road to strengthen and consolidate his empire from the Indus valley to the Sonar Valley in Bengal.

• It was renamed the GT road during the British period.

Additional Information

• His real name was Farid.

• He joined the Babar Khan Lohani's service and then was appointed as the Deputy Governor of Bihar.

• He usurped the throne as 'Hazarat-i-Ala'.

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• He gained Chunar by marrying one widow Lad Malika.
• Battle of Chausa: In 1539 AD, he captured Chausa from Humayun.
• He assumed the title of Sher Shah as the emperor.
• He also issued coins and Khutba was read in his name.
• The whole area from Bengal to Benares was under his empire.
• The campaign of Bundelkhand was the last campaign of his life.
• He built Purana Qila, Grand Trunk Road.
• He also built his tomb at Sasaram in Bihar.

Q4. Answer: (d) Unique Identification Authority of India

The correct answer is Unique Identification Authority of India.

• The Unique Identification Authority of India's objective is to collect the biometric and demographic data of residents, store them in a centralized database, and issue a 12-digit unique identity number called Aadhaar to each resident.

• It is considered the world's largest national identification number project.

Additional Information

• The Unique Identification Authority of India (UIDAI) is a statutory authority established on 12 July 2016 by the Government of India under the Ministry of Electronics and Information Technology, under the provisions of the Aadhaar Act 2016.

• On July 19, 2017 it launched the mAadhaar app for Android.

• With the mAadhaar app, users will be able to get the updated view of the profile upon completion of the update request and they will even be able to share QR code and password protected eKYC data to retrieve accurate demographic information from it instead of manual entry.

Q5. Answer: (b) 31 10 15

Table show alphabet serial number –

The pattern for the code is as follows,

So, LAPTOP is coded as 28 16 36.

And,

So, DROUGH is coded as 12 25 36.

Similarly,

Hence, MEMBER is coded as “31 10 15”.

Q6. Answer: (b) Bank of Hindustan

The correct answer is Bank of Hindustan.

Key Points

• Bank of Hindustan was the first bank established in India.
• The Bank of Hindustan was the first bank to be established in India in 1770.
• The headquarters of the Bank of Hindustan was located in Calcutta.
• It was established at Calcutta under European management.

Additional Information

• The Bank of Hindustan maintained reserves of actual money i.e., coins of Gold and Silver which were known as Rupia.
• The Bank of Hindustan was closed in 1832 due to some commercial crises.
• The Bank of Hindustan faced three major economic crises of the 18th century:
• The Recession of 1819.
• The failure of Palmer and Co., a British agency house.
• The Banking Crisis of 1832.
• The General Bank of India was the second bank established in India in 1786.

Q7. Answer: (d) arithmetic mean of a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10

GIVEN:

Speeds of a train in 10 successive hours = a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10.

FORMULA USED:

Average speed = (Total Distance / Total time)

SOLUTIONS :

Distance = Speed ×Time

=> d1= a1× 1 = a1
=> d2 = a2 × 1 = a2
=> d3= a3 × 1 = a3
=> d4 = a4 × 1 = a4
=> d5 = a5 × 1 = a5
=> d6 = a6 × 1 = a6
=> d7 = a7 × 1 = a7
=> d8 = a8 × 1 = a8
=> d9 = a9 × 1 = a9
=> d10 = a10 × 1 = a10
=> Average speed = (a1+ a2+ a3+ a4+ a5+ a6+ a7+ a8+ a9+ a10) / 10
=> So, it is clear that the average speed of the train is the airthmetic mean of a1, a2, a3, a4, a5, a6, a7, a8, a9, and a10
Hence option 4 is the correct answer.
Additional Information
Arithmetic mean is the ratio of the sum of all observations to the total number of observations.

Q8. Answer: (a) 357000

GIVEN:
A total number of votes = 560000 and a Total number of invalid votes = 15%.
FORMULA USED:
Percentage = (value / Total value) × 100%
SOLUTION:
Total number of votes = 560000
Total number of invalid votes = 15% of 560000
=> (15 / 100) × 560000
=> 84000
=> Total number of valid votes = (Total number of votes) - (Total number of invalid votes)
=> Total number of valid votes = 560000 - 84000
=> Total number of valid votes = 476000
=> Percentage of votes polled in favor of candidate A = 75% of the total valid votes.
=> (75 / 100) × 476000
=> 357000
Hence Option 1 is the valid answer.
Additional Information
To convert a percentage into a fraction, replace the % sign with 1/100 and reduce the fraction to the simplest form.

Q9. Answer: (d) 3 : 7

GIVEN:
Given ratio = 4767 / 11123
SOLUTION:
To convert the given ratio 4767:11123 to his simplest form, divide each term by the HCF of 4767 and 11123
=>HCF of 4767 and 11123 = 1589
=> (4767 / 1589) / (11123 / 1589)
=> (3) / (7)
Hence option 4 is the valid answer.
Additional Information
HCF or the Highest Common Factor of two numbers is the highest factor that can divide the two numbers, evenly.
For Example, The Highest common factor of 10 and 15 is 5 because 5 is the largest number which can divide both 10 and 15 respectively.

Q10. Answer: (b) Narmada

The logic is here is:
Ganga, Indus, and Brahmaputra are Himalayan rivers, while the Narmada is the Peninsular river.

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Option (1) Ganga → origin lies in North India

Option (2) Narmada → originates in the Amarkantak Plateau in central India.

Option (3) Brahmaputra → origin lies in North India

Option (4) Indus → origin lies in North India

Hence, 'Narmada' is different from the others.

Q11. Answer: (c) irrational number

Given:

The number = 1.112123123412345.....

Solution:

The rational numbers in their Decimal expansion have two forms;

1) Terminating Decimal Expansion

2) Non-terminating recurring decimal expansion

Otherwise, the number is irrational.

The given number is non-terminating, So the number 1.112123123412345..... is an irrational number.

Hence option 3 is an irrational number.

Q12. Answer: (a) GS Lakshmi

The correct answer is GS Lakshmi.

• India's GS Lakshmi has become the first-ever woman referee to be appointed on the ICC International Panel of Match Referees.

• Lakshmi's appointment follows close on the heels of Claire Polosak, who became the first female umpire to stand in a men's One-Day International.

Additional Information

• Some important first Indian women:

• Sarojini Naidu was the first Indian woman president of the Indian National Congress

• Vijaya Lakshmi Pandit was the first female president of the United Nations General Assembly.

• Sucheta Kriplani was the first woman Chief Minister of India.

• Arundhati Roy was the first Indian woman to win the Man Booker Prize in the year 1997.

• Bachendri Pal was the first Indian woman to climb Mt. Everest in 1984.

• Anshu Jamsenpa was the first Indian woman to climb Everest twice in a season.

Q13. Answer: (c) 9900

Given:

The given numbers = 15, 20, 25, 45.

Solution:

Find the LCM of the given numbers.

LCM of (15, 20, 25, 45) = 900

The Greatest of 4 digit numbers = 9999

Now Divide 9999 from 900 we get the remainder = 99.

Now subtract 99 from 9999 we get,

Required number = 9999 - 99

Required number = 9900

Hence option 3 is the correct answer.

Q14. Answer: (b) 5 : 4

GIVEN:

Profit = 25%

FORMULA USED:

Profit percentage = (Selling price - Cost price) / Cost Price × 100

SOLUTION:

According to the question

The cost price of x articles = selling price of y articles

SP / CP = x / y

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Let CP = 100

Profit percentage = (Selling price - Cost price) / Cost Price × 100

25% = (SP - 100) / CP × 100

SP = 125

x / y = 125 / 100

x / y = 5 / 4

Hence option 2 is the correct answer.

Q15. Answer: (c) Nagpur

The correct answer is Nagpur.

Key Points

• The zero milestones is the geographical centre of India. It is located in Nagpur, Maharashtra.

• Zero Mile Stone is a monument built by the British during the Great Trigonometrically Survey of India in 1907 in Nagpur, Maharashtra.

• The Zero Mile Stone consists of a pillar made up of sandstone.

• IST passes through Allahabad and Mirzapur city in UP and other 5 states i.e. UP, MP, Chhattisgarh, Odisha, Andhra Pradesh.

• Mumbai used to be known as the Manchester of the East due to the cotton mills setup.

Q16. Answer: (b) only 2

Calculation:

Kindly note that: x = √4, which is the 1st equation is a linear equation.

This means it will only have one solution. The solution will be positive.

Thus, x = √4 = 2

Therefore The correct answer is option (2).

Additional Information

If the equation was x2 = 4,

then we will have 2 roots, as it is a quadratic equation.

Keep this fact in mind as this will help us in solving this type of problem.

Hence option 4 is the correct answer.

Q17. Answer: (b) 131

Replace symbols to mathematics sign:

Symbols	@	?	#
Sign	×	÷	•

Now given:

34@24?6#5 = 131

Replace all symbols into mathematics sign

= 34 × 24 ÷ 6 - 5

= 34 × 4 – 5

= 136 – 5

= 131

So, 34@24?6#5 = 131

And,

15@18?3#9 = 81

Replace all symbols into mathematics sign

= 15 × 18 ÷ 3 - 9

= 15 × 6 – 9

= 90 – 9

= 81

So, 15@18?3#9 = 81

Similarly,

17@72?9#5 = ?

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Replace all symbols into mathematics sign

= 17 × 72 ÷ 9 - 5

= 17 × 8 – 5

= 136 – 5

= 131

Hence, 17@72?9#5 = 131

Q18. Answer: (c) Database management system

The correct answer is Database management system.

Key Points

• A Database Management System (DBMS) is software designed to store, modify, and manage data in a database.

• Examples of DBMS are SQL Server, My SQL, Oracle, MS Access, File Maker, Bigtable.

• A database is a data structure that stores organized information.

• The telephone directory is a good example of a database.

Q19. Answer: (d) Only conclusion 1 follows.

Given:

Statements:

A. Some bakeries are outlet showrooms.

B. All outlet showrooms are shops.

The least possible diagram for the given statements is as follows

Conclusion:

1. Some shops are bakeries as well as outlet showrooms → True (Because all outlet showrooms are Shops and some bakeries are outlet showrooms so definitely some shops are bakeries as well as outlet showrooms)

2. All bakeries are shops → False (It is possible but not definite)

Hence, the Only conclusion I follow.

Additional Information

Q20. Answer: (b) 90°

Given:

Sum of two angles of a triangle = Third angle

Solution:

Let us consider a triangle triangle ABC

Then according to the given condition, angle A = angle B+angle C

We know that the Sum of all the interior angles of a triangle is 180°.

Hence, angle A + angle B + angle C = 180°

=> angle A + angle A = 180°

=> 2angle A = 180°

=> angle A = 90°

Hence option 2 is the correct answer.

Q21. Answer: (a) 1761318129

Table show alphabet serial number –

The pattern followed here is

So the J is coded as 17

And,

So the N is coded as 13.

Similarly,

JUNIOR = ?

Hence, JUNIOR is coded as ‘1761318129’

Q22. Answer: (b) Akbar

The correct answer is Akbar.

Key Points

• Buland Darwaza or the garret gateway at Fatehpur Sikri was constructed by the great Mughal emperor, Akbar in 1575.
• Akbar constructed the Buland Darwaza to commemorate his victory over Gujarat.
• It is made of red and buff sandstone and finished by carving and inlaying white and black marble.
• An inscription on the central face of the Buland Darwaza throws light on Akbar's religious tolerance and broad-mindedness.

Additional Information

Akbar's monuments

Monuments	Location
Agra Fort	Agra
Fatehpur Sikri	Agra
Buland Darwaza	Agra
Humayun's Tomb	Delhi
Akbar's Tomb	Sikandra

Q23. Answer: (c) Gujarat

The correct answer is Gujarat.

• India's 'Statue of Unity' is situated in the state of Gujarat.

Additional Information

• The Statue of Unity in India is the world’s tallest statue of Sardar Vallabhbhai Patel.
• Located at Narmada Valley Kevadiya colony, Gujarat.
• Designed by Indian sculptor Ram V. Sutar.
• Height : 182 metres (597 feet)
• Constructed by Larsen & Toubro.
• Constructed on a river island named Sadhu Bet.
• Inaugurated on 31 October 2018.
• Inaugurated by Indian Prime Minister Narendra Modi.

Q24. Answer: (a) John Dalton

The correct answer is John Dalton.

• In 1808, John Dalton first proposed an atomic theory of matter and he named it Dalton's atomic theory.
• Dalton’s atomic theory was able to explain the law of conservation of mass, law of constant composition and law of multiple proportions very successfully.

Additional Information

• Antoine-Laurent de Lavoisier
• He is considered the “Father of modern chemistry”.
• He was the first to establish that sulfur was an element, not a compound.
• In 1778, he named oxygen and in 1783 he named hydrogen.
• Gregor Mendel
• He is known as the "Father of Genetics".
• He proposed the law of heredity through his work on pea plants and discovered the fundamental laws of inheritance.
• John Milton was born on 9 December 1608 in Bread Street, Cheapside, London, England.
• He was an English poet, polemicist, a scholarly man of letters, and a civil servant for the Commonwealth of England under Oliver Cromwell.
• He wrote at a time of religious flux and political upheaval and is best known for his epic poem Paradise Lost.

Q25. Answer: (c) August, 2018

The correct answer is August, 2018.

Key Points

• India’s first flight using biofuel flew from Dehradun (capital of Uttarakhand) to Indira Gandhi International Airport Delhi in August, 2018.
• The first-ever biofuel test flight was conducted by SpiceJet on its turboprop Q-400 plane.
• Developed countries like Canada, Australia, and the US have already conducted these test flights.

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• India was the first developing nation to experiment with biofuel test flight.

Q26. Answer: (a) 4

Given:

The given numbers = 1300, 4660, and 6900.

Solution:

To find the greatest number first calculate the difference between the given numbers.

So, the numbers are 1300, 4660, 6900

=> 4660 - 1300 = 3360

=> 6900 - 4660 = 2240

=> 6900 - 1300 = 5600

Now calculate the HCF of Numbers N = 3360, 2240, 5600

=> N = 1120

=> Sum of the digits of N = 1 + 1 + 2 + 0 = 4

Hence the option 1 is the correct answer.

Q27. Answer: (b) 84%

Calculation:

Let the number be 100.

Number (N1) becomes 2/5 of 100 = 2/5 × 100

=> N1 = 40

Number (N2) becomes 5/2 of 100 = 5/2 × 100

=> N2 = 250

Now find Error Percentage

=> Error percentage = N2 - N1 / N2) × 100

=> Error Percentage = ((250 - 40) / 250) × 100

=> Error Percentage = (210 / 250) × 100

=> Error Percentage = 84%

Hence option 2 is the correct answer.

Q28. Answer: (b) State Legislative Assemblies

The correct answer is State Legislative Assemblies.

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 State Legislative Assemblies 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.

Q29. Answer: (d) between 30° and 60°

Given:

Sides of a parallelogram = 3x + 2 and 5x + 4

Perimeter = 44 cm and area = 64 cm²

Formula Used:

Perimeter of parallelogram = 2 (side + base)

Solution:

=> Perimeter = 2(3x + 2) + 2(5x + 4)

=> 44 = 2(3x + 2) + 2(5x + 4)

=> 44 = 6x + 4 + 10x + 8

=> 16x = 32

=> x = 2

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Therefore the sides of parallelogram are,

=> 3x + 2 = 8

=> 5x + 4 = 14

Area of triangle = 1/2 × Area of parallelogram

=> 1 / 2 × 8 × 14 × sinθ = 64 / 2

=> sinθ = 0.571

We know that, sin 30° = 1/2 = 0.5 and sin 60° = √3 / 2 = 1.73/2 = 0.865

Also, the value of sin increases till 90° and decreases thereafter.

Hence option 4 is correct.

Q30. Answer: (b) 1923

The correct answer is 1923.

Key Points

• The Swaraj Party was established as the Congress-Khilafat Swaraj Party.

• It was a political party formed in India on 1 January 1923 after the Gaya annual conference in December 1922 of the National Congress, that sought greater self-government and political freedom for the Indian people from the British Raj.

• Within the Congress, some leaders were by now tired of mass struggles and wanted to participate in elections to the provincial councils (Hence statement 2 is right) that had been set up by the Government of India Act of 1919.

• They felt that it was important to oppose British policies within the councils, argue for reform and also demonstrate that these councils were not truly democratic.

• C. R. Das and Motilal Nehru formed the Swaraj Party within Congress to argue for a return to council politics.

Q31. Answer: (b) 20 days

Given:

Boy : Men = 1 : 4

Formula used:

M1D1 = M2D2

Soliution:

Efficiency of 1 men = 4 units

Efficiency of 1 Boy = 1 unit

Let the work be completed in D days.

According to the question,

=> M1D1 = M2D2

=> 15 × 4 × 17 = (12 × 4 + 3 × 1) × D2

=> D2 = 20 days

Hence option 2 is the correct answer.

Q32. Answer: (c) 5 1 8 7

Given:

3 8 4 6 : 9 64 16 36

The pattern followed here is,

3 → 3^2 = 9

8 → 8^2 = 64

4 → 4^2 = 16

6 → 6^2 = 36

Similarly,

? : 25 1 64 49

5 → 5^2 = 25

1 → 1^2 = 1

8 → 8^2 = 64

7 → 7^2 = 49

Hence, "5 1 8 7" is correct answer

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Q33. Answer: (c) 24^(th) October

The correct answer is 24th October.

Key Points

• United Nations Day is observed every year on 24 October.

• United Nations day has been in observance since 1948.

• The day commemorates the anniversary of the UN Charter that came into force in 1945.

• With the ratification of UN Charter by the majority of its signatories, the UN officially came into being.

Q34. Answer: (b) Only assumption II is implicit

The logic followed is:

According to the given information,

Assumption 1 → This is not implicit, because become Police is there for our safety and not for supporting the thieves.

Assumption 2 → This is implicit, because if India become Chain snatchers have no fear of punishment whom the thief becomes even more brave and becomes fearless.

Hence, “Only assumption II is implicit".

Additional Information

1. Read the statement with an approach that the assumptions would be true with regard to the statement.

2. Do not go too logical with the statements. Analyze the given information and the assumption must only be made based on the information in the statement. Do not over-complicate it.

3. Common assumptions can always be followed but other than that do not align the statement with General Knowledge or other facts

4. Use the elimination method if you are unable to apprehend the answer. Read the statement and then the assumptions given in the options, you shall notice that a few of them will most definitely not follow. Eliminate them and then choosing from lesser options may prove to be more convenient

5. One thing to make a note of is that the assumption is something that the author believes to be true so while choosing the correct option, keep this thought in mind as well. If any option contradicts the statement, then that assumption will not follow.

Q35. Answer: (b) Thiruvananthapuram

The correct answer is Thiruvananthapuram.

Key Points

• Thiruvananthapuram is the lead centre of ISRO responsible for the design and development of launch vehicle technology.

Additional Information

• List of Space Research Centres in India

Name of the Space Centre	Name of the city/state
Satish Dhawan Space Centre – (Rocket Launching)	Sriharikota, Andhra Pradesh
Space Applications Centre (For Remote sensing /Telecommunication)	Ahmedabad, Gujarat
ISRO Telemetry, Tracking & Command Network (ISTRAC)	Bangalore, Karnataka
Indian Space Research Organisation	Bengaluru, Karnataka
Vikram Sarabhai Space Center (Rocket Launching)	Thiruvananthapuram, Kerala
National Remote Sensing Centre	Hyderabad, Telangana
Master Control Facility (for geostationary & geosynchronous satellites)	Karnataka
Liquid Propulsion Systems Centre	Kerala & Karnataka

Q36. Answer: (d) 12

Given:

Perimeter : Length = 5 : 1

Area of the rectangle = 216 cm²

Formula used:

Perimeter of the rectangle = 2(length + breadth)

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Area of the rectangle = (length × breadth)

Solution:

Let Length of the rectangle = x cm, then perimeter = 5x cm

Perimeter = 2(length + breadth)

=> 5x = 2(x + breadth)

=> Breadth = (5x / 2) - x

=> Breadth = (3x / 2)

Area of the rectangle = (length × breadth)

=> 216 = (length × breadth)

=> 216 = x × (3x / 2)

=> 216 = x × (3x / 2)

=> $x^2 = 144$

=> x = 12

Hence the Length of the rectangle = 12 cm

Q37. Answer: (c) 1980s

The correct answer is the 1980s.

• The C++ programming language was developed at AT & T Bell Laboratories in the early 1980s by Bjarne Stroustrup.

• C++ is a high-level computer programming language developed by Bjarne Stroustrup of Bell Laboratories in the early 1980s, it is based on the traditional C language but with added object-oriented programming and other capabilities.

• Bjarne Stroustrup is known as the founder of the C++ language.

• It was developed for adding a feature of OOP (Object Oriented Programming) in C without significantly changing the C component.

• C++ programming is relative (called a superset) of C, it means any valid C program is also a valid C++ program.

• C++ is a superset of C that retains the efficiency and notational convenience of C while providing facilities for:

• Type checking.

• Data abstraction.

• Operator overloading.

• Object-oriented programming

The programming languages that were developed before the C++ language are:

Language	Year	Developed By
Algol	1960	International Group
BCPL	1967	Martin Richard
B	1970	Ken Thompson
Traditional C	1972	Dennis Ritchie
K & R C	1978	Kernighan & Dennis Ritchie
C + +	1980	Bjarne Stroustrup

Q38. Answer: (b) Rs. 8000

Given:

Loss percentage = 8%

Formula Used:

Selling Price = Cost price - loss

Selling Price = Cost price + profit

Solution:

Let the CP of the horse = X

Loss Percentage = 8%

=> SP = X - [(8 / 100) × X]

According to the given condition,

New Selling Price (SP)1 = SP + 1800

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=> New Selling Price (SP)1 = X - [(8 / 100) × X] + 1800
=> X + [(29 / 200) × X] = X - [(8 / 100) × X] + 1800
=> (29 / 200) × X = 1800 - [(8 / 100) × X]
=> (0.145 × X) + (0.08 × X) = 1800
=> 0.225 × X = 1800
=> X = 8000
Therefore the CP of horses = 8000
Hence option 2 is correct.

Q39. Answer: (a) 20 km/h

Given:
Speed of Ram = 40 km/hour
Time is taken by Ram to reach B = 2 hours
Time is taken by Shyam to reach A = 8 hours
Formula Used:
Distance = Speed × Time
Speed of Ram/ Speed of Shyam = √(Time of Shyam/Time taken by Ram)
Solution:
Speed of Shyam = b km/h
Speed of Ram/ Speed of Shyam = √(Time of Shyam/Time taken by Ram)
=> 40/b = √(8/2)
=> 40/b = 2
=> b = 20 km/hour
Hence speed of Shyam = 20 km/hour.

Q40. Answer: (a) Asia

The correct answer is Asia.
Key Points
• Asia:
• According to population size, the largest Continent is Asia.
• The population of Asia is equivalent to 59.76% of the total world population. It is comprised of the 6 most populated countries.
• The chronology of the Largest content in population size from highest to lowest in Asia, Africa, Europe, North America, South America, Australia, Antarctica.
Important Points

Continent	Population prospects by 2050	Population till May 2020
Asia	5,351,916,300	4,637,747,800
Africa	1,850,475,700	1,337,887,000
Europe	700,676,200	747,598,300
North America	662,334,900	591,693,100
South America	509,254,300	430,464,100
Australia	49,423,700	42,632,000
Antarctica	No data available	No fixed population

Additional Information
• Pamir Plateau which is known as 'Roof of the World' situated in Central Asia.
• Asia is separated from Africa by the Red Sea and Suez Canal.
• Asia is separated from North America by Bering Strait.
• Asia is the largest continent in size.

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Q41. Answer: (a) KN Raj

The correct answer is KN Raj.

Key Points

• Economist K N Raj is known as the architect of this plan.

• The First Five Year Plan in India was from 1951 to 1956.

• The plan was based on the Harrod-Domar model.

• Gave priority to the agricultural development of the country.

• The First Five Year Plan was presented before the parliament by Jawaharlal Nehru.

• It was quasi-successful for the government.

Additional Information

• Important Five Year Plans in India

Second Five Year Plan	**• From 1956 to 1961. - Based on the Mahalanobis model. - Gave priority to the Industrial development of the country. - Durgapur(West Bengal), Bhilai(Chhattisgarh), Raurkela(Odisha) steel plants of India started during this plan.**
Fourth Five Year Plan	• From 1969 to 1974. - The two main objectives of this plan were growth with stability and progressive achievement of self-reliance. - Indo-Pak war of 1971 was during this five-year plan. - Operation flood was launched during this plan.
Fifth Five Year Plan	• Original intended duration1974 to 1979. - Duration: 1974-1978 - Priority was given to agriculture, industry, and mines. - The draft of this plan was prepared and launched by the D.P. Dhar. - 20 Point Program Launched During this plan.
Sixth Five Year Plan	• From 1980 to 1985. - Aim: Poverty eradication and technological self-reliance. - NABARD was established in 1982.
Eighth Five Year Plan	• From 1992 to 1997. - Priority was given to the development of human resources (Human Model). - Beginning of liberalization, privatization, and globalization (LPG) in India. - New Economic policy introduced.

Q42. Answer: (a) Colin Mackenzie

The correct answer is Colin Mackenzie.

Key Points

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

• He holds this post from 1815 to 1821.

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

• Colin Mackenzie was appointed Surveyor-General of Madras Presidency in 1810 but these posts were abolished in 1815.

Additional Information

• The East India Company appointed James Rennell to survey the Bengal Presidency in 1767.

• The current Surveyor General is Major General Girish Kumar as of December 2020.

Q43. Answer: (b) 10 days

Given:

A man completes work in 15 days by working 4 h per day for 5 days, 5 h per day for 5 days, and 6 h per day for 5 days.

Formula Used:

$M1 \times D1 \times H1 = M2 \times D2 \times H2$

where M1 and M2 are numbers of men, D1 and D2 are the numbers of days, H1 and H2 are numbers of hours.

we can only use the term given in the question.

Solution:

Let the efficiency of 1 man be 1 unit

According to the question;

Total work = $5 \times 4 + 5 \times 5 + 5 \times 6$

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Total work = 75 units
After an hour break = 8 hours - 30 minutes
=> After an hour break = 7 hours 30 minutes.
Now,
Total work = 7.5 × no of days
=> 75 = 7.5 × D
=> D = 10 days
Hence option 2 is the correct answer.

Q44. Answer: (c) Geneva

The correct answer is Geneva.
Key Points
• The headquarters of the World Health Organisation is in Geneva, Switzerland.
• The World Health Organization (WHO) is a specialized agency under United Nations responsible for international public health.
• It was formed on 7 April 1948.
• The formation date of the World Health Organization, April 7 is commemorated as World Health Day.
• The headquarters of the World Health Organisation was designed by Swiss architect Jean Tschumi.
• It was inaugurated in 1966.
• The first meeting of the World Health Assembly took place on 24 July 1948.
• Tedros Adhanom is the 8th and current Director-General of the World Health Organization.
• As of 2021, the World Health Organization has 194 member states.
Additional Information
• The headquarters of the United Nations Children's Emergency Fund (UNICEF) is in New York, United States.
• The headquarters of the United Nations Organization is in New York, United States.
• The headquarters of the International Monetary Fund (IMF) is in Washington, D.C., United States.
• The headquarters of the World Bank Group (WBG) is in Washington, D.C. United States.
• The headquarters of the United Nations Educational Scientific and Cultural.
• Organization (UNESCO) is in Paris, France. The headquarters of the World Trade Organisation is in Geneva, Switzerland.

Q45. Answer: (b) 6

Given:
The perimeter of the rectangle = The area of a rectangle.
Formula used:
Diagonal = √(lenght)² + (breadth)²
Solution:
Let the breadth of the rectangle = x
So the length of rectangle = x + 3
According to the given conditions;
Perimeter = Area
=> Perimeter of the rectangle = 2(length + breadth)
=> Area of the rectangle = (length × breadth)
=> 2(x + 3 + x) = (x + 3) × x
=> 2x + 6 + 2x = x² + 3x
=> x2 - x - 6 = 0
=> x2 - 3x + 2x - 6 = 0
=> x(x - 3) + 2(x - 3) = 0
=> (x - 3) × (x + 2) = 0
=> x = 3 and x = (-2)
So, x = 3 then Length = 6
Diagonal = √(lenght)2 + (breadth)²
=> Diagonal = √(6)2 + (3)²
=> Diagonal = √45

=> Diagonal = 6.7

Diagonal = 6 (integer part)

Hence option (2) is the correct.

Q46. Answer: (c) May be true for infinite number of (a, b)

Given:

(a + b)2 = a2 + b2

Formula used:

(a + b)2 = a2 + b² + 2ab

Solution:

(a + b)2 = a2 + b2 + 2ab

Given that, (a + b)2 = a2 + b²

Substitute (a + b)2 = a2 + b2, in (a + b)2 = a2 + b2 + 2ab we get,

=> a2 + b2 = a2 + b2 + 2ab

=> 2ab = 0

=> a = 0 or b = 0

Therefore (0, b) or (a, 0)

Here the value of a and b can be infinite. Thus it may be true for an infinite number of (a, b).

Hence option 3 is the correct answer.

Q47. Answer: (a) becomes 2S

Given:

A solid sphere of surface area S is cut into four equal pieces.

Formula Used:

The surface area of a sphere (S) = 4πr²

Solution:

Since the Sphere is cut into 4 equal pieces, Every part has 2 additional surfaces along with a curved surface, and the area of each surface = (π r² / 2).

For every part there is an additional area of πr², So the additional surface area for 4 parts = 4π r2.

The total surface area of the 4 pieces after making horizontal and vertical cuts = 4πr² + 4πr2

Total surface area = 8πr²

Total surface area = 2S

Hence option 1 is correct.

Q48. Answer: (d) SQL

The correct answer SQL.

Key Points

• SQL stands for Structured Query Language.

• It is a standardized programming language that's used to manage relational databases and perform various operations on the data in them.

• SQL became the de facto standard programming language for relational databases after they emerged in the late 1970s and early 1980s.

• SQL is regularly used not only by database administrators but also by developers writing data integration scripts and data analysts looking to set up and run analytical queries.

• The uses of SQL include modifying database table and index structures; adding, updating, and deleting rows of data; and retrieving subsets of information from within a database for transaction processing and analytics applications.

Additional Information

• SQL is widely popular because it offers the following advantages -

• Allows users to access data in the relational database management systems.

• Allows users to describe the data.

• Allows users to define the data in a database and manipulate that data.

• Allows embedding within other languages using SQL modules, libraries & pre-compilers.

• Allows users to create and drop databases and tables.

• Allows users to create a view, stored procedure, functions in a database.

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• Allows users to set permissions on tables, procedures, and views.

Q49. Answer: (d) Three

The correct answer is Three.

• Till 2021, India had made it to the final three times: 1983, 2003, and 2011.

• India has reached the ICC Cricket World Cup Final four times — in 1983, 2003, 2011, and 2023.

• Won only two times.

• In 1983 India won against the West Indies in Lords'

• In 2011 India won against Sri Lanka at Wankhede

• 2003 and 2023 India lost to Australia.

Additional Information

• The International Cricket Council is the world governing body of cricket.

• It was founded as the Imperial Cricket Conference in 1909 by representatives from Australia, England and South Africa.

• It was renamed the International Cricket Conference in 1965 and took up its current name in 1987.

• The ICC is headquartered in Dubai, UAE.

Q50. Answer: (a) I

Table show alphabet serial number –

The logic followed here is

LHS side last two alphabets latter place value sum is equal to the RHS side alphabet place value.

Given:

OFG = M

Place value of all letters is

O = 15, F = 6, G =7 and M = 13

Sum of LHS side last two alphabets latter place value

6 + 7 = 13 = RHS side alphabet place value.

And,

ICM = P

Place value of all letters is

I = 9, C = 3, M =13 and P = 16

Sum of LHS side last two alphabets latter place value

3 + 13 = 16 = RHS side alphabet place value.

Similarly,

KDE = ?

Place value of all letters is

K = 11, D = 4, E = 5

Sum of LHS side last two alphabets latter place value

4 + 5 = 9

9 is place value of 'I'

Hence, 'I' is the correct answer.

Q51. Answer: (d) 30 Years

Given:

Aman's great-grandfather is 105 years old.

Aman's father Ram Singh's age is 1/3 of Ram's grandfather.

• Ram's grandfather = Aman's great-grandfather.

So, Ram Singh's age = 105 × 1/3 = 35

Five year ago,

Aman was born means Aman is new born baby.

Ans, Ram singh age Five year ago = 35 – 5 = 30

Ram Singh's mother was double the age of Ram Singh.

So,

Ram Singh's mother age = Ram Singh age × 2

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= 30 × 2 = 60

Now, at present time

Aman age = 5 years

Ram singh age = 35 years

Difference of age between Aman and Ram Singh = 35 – 5 = 30

Hence, '30' is the correct answer.

Q52. Answer: (c) 13

Given:

A number N is divided by 45, Leaves the remainder = 28

Formula Used:

=> N = D × Q + R

Solution:

According to the given conditions,

=> N = 45 × Q + 28

On dividing N by 15,

=> N/15 = 45 × Q + 28/15

Substitute Q = 1, 2, 3, ... n

Now substitute Q = 1 we get;

=> N/15 = 45 × 1 + 28/15

=> N = 73/15

Hence dividing by 15 will leave the remainder = 13

Hence option 3 is the correct answer.

Q53. Answer: (c) 45

Given:

HCF of 36 = 9 and LCM of N = 180

Formula Used:

Multiplication of both numbers = LCM × HCF

Solutions:

Multiplication of both numbers = LCM × HCF

=> 36 × N = 9 × 180

=> N = (9 × 180)/36

=> N = 45

Hence option 3 is correct.

Q54. Answer: (a) Jean Gottman

The correct answer is Jean Gottman.

Key Points

• Megalopolis:

• A continuous and densely populated development was described as a megalopolis by Jean Gottman, a French geographer, to define the belt on the east coast of the United States at the beginning of the 1960s.

• A megalopolis sometimes called a megapolis; also megaregion, city cluster, or supercity is a group of two or more roughly adjacent metropolitan areas, which may be somewhat separated or may merge into a continuous urban region.

Q55. Answer: (d) Hardik, Ram and Sumit

Given:

Ram runs faster than Sumit whereas Sumit is faster than Hardik and Tarun

Ram > Sumit > Hardik and Tarun

After a training of three months.

Hardik will be able to beat Ram

Hardik > Ram > Sumit > Tarun

So, top three runners is Hardik, Ram and Sumit.

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Hence, Hardik, Ram and Sumit is the correct answer.

Q56. Answer: (b) 23

Given:

Fatima is 15^(th) from one extreme and 9^(th) from the other

We know that,

Total number persons = position from left + position from right – 1

= 15 + 9 – 1

= 24 – 1

= 23

Hence, the total number of girls in the row is '23'

Q57. Answer: (c) Photovoltaic effect

The correct answer is the Photovoltaic effect.

Key Points

• The process of conversion of solar energy into electric energy is called a Photovoltaic Effect.

• Solar or photovoltaic cell:

• A solar cell, or photovoltaic cell, is an electrical device that converts the energy of light directly into electricity by the photovoltaic effect.

• Photovoltaic modules often have a sheet of glass on the sun-facing side, allowing light to pass while protecting the semiconductor wafers.

• The photovoltaic effect was experimentally demonstrated first by French physicist Edmond Becquerel.

• The photovoltaic cell utilizes sunlight in a direct fashion.

• A photovoltaic cell converts solar radiation into electric energy.

• Biogas is produced naturally from the decomposition of natural waste.

• It primarily consists of Methane and Carbon dioxide.

• A solar cell is made up of Silicon.

Additional Information

• The solar cell works in several steps:

• Photons in sunlight hit the solar panel and are absorbed by semiconducting materials, such as doped silicon.

• Electrons are excited from their current molecular/atomic orbital.

• The excited electron travels leaving holes behind.

• The potential difference thus produces current.

• The chemical bonds of the material are vital for this process, and usually, silicon is used in two layers, one layer being doped with boron, the other phosphorus.

• An array of solar cells converts solar energy into a usable amount of direct current (DC) electricity.

• An inverter converts direct current to alternating current (AC).

Q58. Answer: (b) MITT

Table show alphabet serial number –

The pattern for the code is as follows,

EIOR : HFRO

Similarly,

JLQW : ?

Hence, KHWS is coded as "MITT".

Q59. Answer: (a) 13 units

Given -

Area of a rectangle = 60 and perimeter = 34.

Formula used

Area = Length × Breadth.

Solution:

Let the length and breadth of the rectangle be x and y.

=> Area of the rectangle = x × y

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=> 60 = x × y

=> Perimeter of the rectangle = 2(x + y)

=> P = 2(x + y)

=> 34 = 2(x + y)

By using the Pythagoras theorem, the Diagonal of the rectangle(D) is equal to $\sqrt{(x^2+ y^2)}$.

=> D = √(x2 + y2)

=> D = $\sqrt{((x + y)^2- 2(xy))}$

=> D = √((17)2- 2(60))

=> D = √((17)2- 2(60))

=> D = √289 - 120

=> D = 13

Hence option 1 is the correct answer.

Q60. Answer: (c) 1

Given:

$(a + b\sqrt{2})^2 = 19 + 6\sqrt{2}$

Formula used:

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

Solution:

=> (a + b√2)2 = 19 + 6√2

=> (a + b√2)2 = 19 + 6√2

=> (a + b√2)2 = 1 + 18 + 2 × 3√2

=> $(a + b\sqrt{2})2 = 1^2+ (3\sqrt{2})^2+ 2 \times 1 \times 3\sqrt{2}$

By using (a + b)2 = a2 + b2 + 2ab

=> $(a + b\sqrt{2})2 = (1 + 3\sqrt{2})^2$

=> $(a + b\sqrt{2}) = 1 + (3\sqrt{2})$

Now comparing both sides we get,

=> a = 1 and b = 3

Hence option 3 is the correct answer.

Q61. Answer: (a) 13

Given:

The 'Rectangle' represents 'Fish',

The 'Triangle' stands for 'Car'

The 'Circle' stands for 'Door'.

The shaded part represents doors are fish = 8 + 5 = 13

Hence, "13" is the correct answer.

Mistake Points

How many Doors are fish means all the part that covers Door and Fish is taken as the answer.

If the only word is mentioned in the question, then no other entity can be covered except those given words.

Example: How many "only" doors are fish then the answer would be 8.

Q62. Answer: (a) Botany

The correct answer is Botany.

Key Points

• Theophrastus is considered the father of botany for his works on plants.

• Theophrastus(371-287 BC), a Greek native of Eresos in Lesbos, was the successor to Aristotle in the Peripatetic school.

• His given name was Tyrtamus was given by Aristotle for his 'divine style of expression'.

• The interests of Theophrastus were wide-ranging, extending from biology and physics to ethics and metaphysics.

Q63. Answer: (b) 50%

Given:

x : y = 4 : 5

Formula Used:

Percentage = (value/total value) × 100

Solution:

According to the question,

=> x = z × 120/100

=> x : z = 6 : 5

=> x : y = 4 : 5

Now with the help of above ratios we get,

=> x : y : z = 24 : 30 : 20

Hence the percentage of y will be more than z by;

=> P = (y - z)/z × 100

=> P = (30 - 20)/20 × 100

=> P = 50%

Hence option 2 is correct.

Q64. Answer: (a) 1988

The correct answer is 1988.

Key Points

• In India, the voting age has been reduced from 21 years to 18 years by the 61st Constitutional Amendment Act, 1988.

• It comes into force by amending Article 326.

• The bill was passed by the Lok Sabha on 15th December 1988.

• The bill was passed by the Rajya Sabha on 20th December 1988.

• The bill was assented by President Venkaraman on 28th March 1989.

• The bill came into force on 28th March 1989.

• The Prime Minister who reduced the voting age from 21 to 18 years - Rajiv Gandhi.

• The first general elections to the Lok Sabha were held in India - Between 25th October 1951 and 21st February 1952

Important Points

• Article 326:

• The Constitution provides that the elections to the House of the People and to the Legislative Assembly of every State shall be on the basis of adult suffrage.

• Article 324:

• Article 324 of the Indian Constitution deals it the power and authority to conduct, control, and supervise the entire election process in the country including elections to the Parliament, the Legislatures of every state, and to the offices of the President and Vice-President.

Q65. Answer: (d) Kolkata

The correct answer is Kolkata.

Key Points

• Kolkata has a nickname, the "City of Palaces".

• It is famous for its Rajbaris.

• During the British colonial era from 1700-1912, when Kolkata was the capital of British India, Kolkata witnessed a spate of frenzied construction activity of buildings largely influenced by the conscious intermingling of Gothic, Baroque, Roman, Oriental, and Islamic schools of design.

• Unlike many north Indian cities, whose construction stresses minimalism, the layout in architectural variety in Kolkata owed its origins to the Occident.

• The buildings were designed and inspired by the tastes of the English gentleman around and the aspiring Bengali Baboo.

• The numerous palatial mansions built all over the core city led to the city being called the City of Palaces.

Additional Information

• The East India Company founded its trading post in Kolkata.

• Till 1911, it was the capital of India.

• In 1911, the capital of India was shifted to Delhi by the British.

• The grand colonial architecture, art galleries, and cultural festivals can be found in the city.

• Kolkata is one of the largest cities in India.

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• It is also the major port.
• The city is located at the bank of the Hoogly River.
• The city is the educational, commercial, and cultural center of India.
• The capital of the state of West Bengal is Kolkata.

Q66. Answer: (c) x = z

Given:
x% of y = y% of z
Formula Used:
Percentage = (value / total value) × 100
Solution:
According to the given conditions;
=> x% of y = y% of z
=> (x / 100) × y = (y / 100) × z
=> x = z
Hence option 3 is correct

Q67. Answer: (c) Assam

The correct answer is Assam.
Key Points
• Bhupen Hazarika is an Assamese singer-composer.
• Bharat Ratna Awards 2019 was conferred to Bhupen Hazarika, Nanaji Deshmukh, Pranab Mukherjee.
Additional Information
• Bharat Ratna is the highest civilian honour in India.
• Any person without distinction of race, occupation, position, or sex is eligible for these awards.
• Bharat Ratna was instituted in the year 1954.
• It is not mandatory that Bharat Ratna be awarded every year.
• The first three recipients of Bharat Ratna are:
• C. Rajagopalachari.
• Sarvepalli Radhakrishnan.
• CV Raman.
• Lal Bahadur Shastri was the first person to be awarded Bharat Ratna posthumously.
• There is no written provision that Bharat Ratna should be awarded to Indian citizens only.
• Khan Abdul Ghaffar Khan was the first foreigner to get Bharat Ratna.
• Indira Gandhi was the first woman to get Bharat Ratna.
• Sachin Tendulkar is the first sportsperson to get Bharat Ratna.
• Bharat Ratna was last awarded on 25 January 2019.
• The 2019 recipients of the Bharat Ratna award are:
• Nanaji Deshmukh (Posthumous).
• Bhupen Hazarika (Posthumous).
• Pranab Mukherjee.
• There is no Bharat Ratna for the year 2021.

Q68. Answer: (c) Umbra

The correct answer is Umbra.
Key Points
• Umbra: The region of the complete shadow is called the umbra.
• In a solar or lunar eclipse, the region of the earth's shadow is divided into three parts. The three parts are:
• Penumbra: The region of the diffuse shadow is called the penumbra.
• Antumbra: The antumbra is the lighter part of a shadow that forms at a certain distance from the object casting the shadow.
• Umbra: The region of the complete shadow is called the umbra.
Additional Information

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Q69. Answer: (a) 1935

The correct answer is 1935.

Key Points

The Reserve Bank of India was established on April 1, 1935.

It was established in accordance with the provisions of the Reserve Bank of India Act, 1934.

Initially Established in Kolkata but later transferred permanently to Mumbai (1937).

Additional Information

• The primary functions of the RBI include-

• Formulates, implements and monitors the monetary policy

• Regulator and supervisor of the financial system

• Manager of Foreign Exchange

• Issuer of currency

• Regulator and Supervisor of Payment and Settlement Systems

• Sir Osborne A Smith was the first governor of the Reserve Bank of India.

• He held the post of governor from 1 April 1935 to 30 June 1937.

• Sanjay Malhotra is the present Governor of the RBI.

• He assumed charge as the 25th Governor of the Reserve Bank of India effective from December 12, 2018.

Q70. Answer: (c) 1^(st) January

The correct answer is 1st January.

Key Points

• NITI Aayog was formed via a resolution of the Union Cabinet on January 1, 2015.

• National Institution for Transforming India, also called NITI Aayog, replaced the Planning commission in the year 2015.

• NITI Aayog is the premier policy 'Think Tank of the Government of India, providing both directional and policy inputs.

• NITI Aayog also provides relevant technical advice to the Centre and States.

• The Prime Minister as its Chairman comprises Chief Ministers of all States and Lt. Governors of Union Territories (UTS).

• Composition of NITI Aayog

• Chairperson: Prime Minister.

• Vice Chairperson: Suman Berry

• Governing Council: CM's (States) and Lieutenant Governors (Union Territories).

• Regional Councils: Formed on a need-basis, incorporates CMS and Lieutenant Governors of the region.

• Part-time Members: Maximum 2, Rotational, from relevant institutions.

• CEO: Parameswaran Iyer

Q71. Answer: (a) 784

The logic is here is:

On the LHS side multiply the digit of the number then the square of this number get the RHS

Given:

67 = 1764

LHS = 67

Multiply digits of number

6 × 7 = 42

Square of this number

42^2 = 1764 = RHS

And,

93 = 729

LHS = 93

Multiply digits of number

9 × 3 = 27

Square of this number

27^2 = 729 = RHS

Similarly,

74 = ?

LHS = 74

Multiply digits of number

7 × 4 = 28

Square of this number

$28^2 = 784$

Hence, '784' is the correct answer.

Q72. Answer: (c) Lord Wellesley

The correct answer is Lord Wellesley.

• Lord Wellesley became the Governor General and built a massive palace, Government House, for himself in Calcutta.

• He was a Governor-General of India between 1798 and 1805.

• Lord Wellesley was appointed Governor General of Bengal in 1798 at the age of 37.

• He had two main objectives in India

• To make the East India Company the supreme and sovereign power in India.

• To increase the area under the control of the company.

• Its second major goal was to eliminate French influence in India and to prevent potential regional expansion of France into India.

• Madras Presidency was formed during the tenure of Lord Wellesley.

• Fort William College was set up by Lord Wellesley in 1800 for the training of civil servants of the Company in languages and customs of Indians

• Censorship of Press Act, 1799 was enacted by Lord Wellesley, anticipating the French invasion of India.

Additional Information

• Lord William Bentinck served as Governor-General of Bengal and India from 1828 to 1835.

• Along with Raja Ram Mohan Roy, Bentinck tried to suppress many superstitious practices like Sati, the practice of widow burning.

• It was abolished by the Bengal Sati Regulation, passed in 1829.

• He also tried to control practices like polygamy, child marriages and caste rigidity.

• Robert Clive became the Governor of Bengal twice once from 1757-1760 and other from 1765-1767.

• The Dual System of Government was established by him in Bengal.

• Lord Cornwallis (1786-1793) introduced the system of Daroga as part of Police reforms.

• Police of each district was placed under District Judge.

• Each district was divided into Thanas/Police circles which will be headed by Daroga, an Indian officer assisted by constables.

Q73. Answer: (c) one full bucket

Given:

Ratio of M : W = 1 : 2

In a bucket milk and water mixed in the ratio 2 : 1

Formula Used:

Added amount of water / Initial total quantity

Solution:

Let x liters of water added in the bucket.

According to the question;

=> (2/1+ x) = 1/2

=> 4 = 1 + x

=> x = 3

Now,

=> Added amount of water / Initial total quantity = 3 / (1+2)

Hence a full bucket of water was mixed.

Hence option 3 is correct.

Q74. Answer: (a) 5

Given:

Two sides of triangle = 6 cm and 3 cm

Formula Used:

Sum of two sides of triangle > Third side

Solution:

Let the third side of the triangle = c

Case 1:

Sum of two sides of triange > Third side

=> 6 + 3 > c

=> 9 > c

Case 2:

=> c + 3 > 6

=> c > 3

Hence c = 4, 5, 6, 7, 8

The number of such distinct triangles is = 5

Q75. Answer: (c) methane

The correct answer is methane.

• The percentage of methane in biogas is 75 %.

• Biogas consists mainly of methane (CH4) 75% and carbon dioxide (CO2) 25%.

• Biogas is produced by using organic material, which is broken down with the help of bacteria in an anaerobic environment in the absence of oxygen.

Additional Information

• Biogas is processed in dome type structure.

• The bio plant has a dome-like structure built with bricks.

• A slurry of organic waste and water is made in the mixing tank.

• Then it goes to the digester.

• The digester is a sealed chamber in which there is no oxygen.

• Anaerobic micro-organisms that do not require oxygen decompose or break down complex compounds of the cow-dung slurry.

• After the biogas is released and leftover slurry can be used as manure.

Q76. Answer: (b) Rs. 32,913

Given:

Cost price = 27000 Rs.

GST = 6%

Formula Used:

Percentage = (value/total value) × 100

Solution:

For extended warranty of 2 years we get;

CP = 27000 + 27000 × 15/100

CP = 31050 Rs.

Now 6% GST we get;

CP = 31050 + 31050 × 6/100

CP = 32913 Rs.

Hence option 2 is correct.

Q77. Answer: (c) Jawahar Lal Nehru

The correct answer is Jawahar Lal Nehru.

• Congress passed the Poorna Swaraj resolution in December 19, 1929 in the Lahore session.

• Jawaharlal Nehru was the president of the December 1929 Lahore session.

Additional Information

• In the 1939 Tripuri Session, Subhash Chandra Bose Won the elections for the Indian National Congress (INC) president at Tripuri Session by defeating Pattabhi Sitaramayya.

• In 1938, Haripura session Subhash Chandra Bose was president.

• Vinayak Savarkar was born in Maharashtra, he was a great revolutionary.

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• VD Savarkar had established a revolutionary organization called 'Abhinav Bharat'.
• Savarkar wrote the famous book 'History of the War of Indian Independence' based on the revolution of 1857.
• Mahatma Gandhi was elected as the 43rd president of INC in Belgaum Session.

Q78. Answer: (a) 1998

The correct answer is 1998.

Key Points

• Pokhran-II was the series of five nuclear bomb test explosions conducted by India at the Indian Army's Pokhran Test Range in May 1998.
• It was the second Indian nuclear test, the first test, code-named Smiling Buddha, was conducted in May 1974.
• Pokhran 2 was code-named Operation Shakti.

Additional Information

• The "Smiling Buddha" was the code name of the first successful nuclear bomb test in India.
• This test was conducted on 18 May 1974.
• The bomb was detonated on the army base name of this base is "Pokhran Test Range (PTR)".
• This range is in Rajasthan.
• The Indian Army under the supervision of several key army officials conducted this test successfully.

Q79. Answer: (c) a rational number

Solution:

A number that is in the form of p/q, where p and q are integers, and q is not equal to 0 is a rational number.

Given that;

=> (3√5 + √125)/(√80 + 6√5)

=> (3√5 + 5√5)/(4√5 + 6√5)

=> (8√5)/(10√5)

=> 8/10

=> 4/5

=> 4/5 which is in the form of p/q, So the number 4/5 is a rational number.

Hence option 3 is the correct answer.

Q80. Answer: (c) Brij Bhushan Saran Singh

The correct answer is Brij Bhushan Saran Singh.

• Wrestling Federation of India president Brij Bhushan Saran Singh is set to be named the Chef de Mission of the Asian Games-bound Indian contingent.
• The IOA has announced a 524-member contingent of athletes for the August 18-September 2 Asian Games in Indonesia.

Additional Information

• Chinese city Hangzhou will host the 2022 Asian Games which is a multi-sport event.
• After Beijing and Guangzhou, Hangzhou will be the third Chinese city to host the Asian Games.

Q81. Answer: (b) [{(16 ÷ 4) × 2} - 5] + 1

Solution:

According to the question;

=> 16 ÷ 4 × 2 - 5 + 1 = 4 × 2 - 5 + 1

=> 8 - 5 + 1

=> 4

Now From the given options;

Option 1: {(16 ÷ 4) × 2} - (5 + 1)

=> {(16 ÷ 4) × 2} - (5 + 1)

=> 8 - 6

=> 2

Option 2: [{(16 ÷ 4) × 2} - 5] + 1

=> [{(16 ÷ 4) × 2} - 5] + 1

=> {4 × 2} - 5] + 1

=> {8} - 5] + 1

=> 4

Hence option 2 is correct.

Q82. Answer: (c) Lord Mountbatten

The correct answer is Lord Mountbatten.

Key Points

• Lord Mount Batten was the first governor-general of free India.

• He served as the governor-general of India from 1947 to 1948.

• Lord Mount Batten was the last viceroy of British India.

• Indian Independence act was prepared under the leadership of Lord Mount Batten.

• Partition of India was decided by Lord Mount Batten.

Additional Information

• Lord William Bentinck was the last governor-general of Bengal.

• Lord William Bentinck was the first governor-general of British India.

• Lord Canning was the last governor-general of British India.

• Lord Canning was the first viceroy of British India.

• C Rajagopalachari was the first Indian governor-general of free India.

Q83. Answer: (d) Ministry of Drinking Water and Sanitation

The correct answer is Ministry of Drinking Water and Sanitation.

Key Points

• The Ministry of Drinking Water and Sanitation (MDWS) launched the 'Ganga Gram Project'.

• This project is for sanitation based integrated development of all 4470 villages along the River Ganga, at a multi-stakeholder sammelan held at Vigyan Bhawan, New Delhi today.

• The Ganga Gram Swachhta Sammelan was attended by more than 1400 delegates including 500 village sarpanches from all five Ganga States (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal), State and District government officials, NMCG Members and Ganga Swachhta Manch volunteers.

• Source: Click

Q84. Answer: (c) 5000 cm²

Given:

Lenght of the Rectangle = Diameter of the semicircle

The semicircle of area =1250 π cm2

Formula Used:

Area of semicircle = (π × r2)/2

Area of rectangle = Length × Width

Solution:

According to the given conditions;

Let the length of the rectangle = 2r

Width of the rectangle = r

Area of rectangle = 2r × r

Area of rectangle = $2r^2$

Area of semicircle = (π × r2)/2

1250 π = (π × r2)/2

=> r2 = 2500

=> r = 50

Area of rectangle = 2r × r = 2r2

Area of rectangle = 5000

Hence option 3 is correct.

Q85. Answer: (d) Albert Einstein

The correct answer is Albert Einstein.

Key Points

• Albert Einstein gave the theory of relativity.

• Albert Einstein established a relation between mass and energy on the basis of the special theory called the Theory of relativity in 1905.

• According to this theory, mass can be converted into energy and vice-versa.

• i.e., E = mc2

• Where,

• c is the velocity of light.

• E is the energy equivalent of mass m.

Additional Information

• Christian Bernard had performed the world's first heart transplant.

• He performed the first human-to-human heart transplant operation on 3 December 1967.

• Thomas Alva Edison discovered the electric lamp. Edison was an American Scientist.

• John Dalton first proposed an atomic theory of matter and he named it Dalton's atomic theory.

• Dalton's atomic theory was able to explain the law of conservation of mass, law of constant composition and law of multiple proportions very successfully.

Q86. Answer: (c) 300

Given:

Total number of students = 1800

Formula Used:

(Number of total students/360) × mathematics radius angle

Solution:

(Number of total students/360) × mathematics radius angle = (1800/360) × 60

=> 300

Hence option 3 is the correct answer.

Q87. Answer: (c) 30

Given:

Total number of students = 1800

Formula Used:

(Number of total students/360) × radius angle

Solution:

Angular expansion of students studying political science = 12°

According to the given conditions;

Equally distributed between History and Mass Communication = 12/2

Equally distributed between History and Mass Communication = 6°

Now,

The increases in the number of students studying Mass Communication due to the closure of Political Science = 1800/360 × 6°

=> 1800/360 × 6° = 30

Hence option 3 is the correct answer.

Q88. Answer: (c) 31

Solution:

As it is easily calculated from the table that the number of students has a height of more than 151 cm but less than 156 cm.

=> 5 + 12 + 10 + 4

=> 31

Hence option 3 is the correct answer.

Q89. Answer: (b) 60

Solution:

Average can be calculated as;

A = (a1 + a2)/2

According to the given conditions;

Average weight = (65 + 55 + 70 + 50 + 60)/5

Average weight = 60

Hence option 2 is the correct answer.

Q90. Answer: (c) HAATRISH

The pattern for the code is as follows,

TITIKSHA: TAIHTSIK

Similarly,

HARSHITA : ?

Hence, KHWS is coded as “HAATRISH”.

Q91. Answer: (a) 35

The logic is shown below –

Hence, “35” is the term that completes the series

Q92. Answer: (a) Neither I nor II follows

The logic followed is:

According to the given information,

Assumption 1 → This is not implicit, because This does not explain why the villagers have a cooperative attitude towards any stranger..

Assumption 2 → This is not implicit, because if India become whether or not urbanization destroys our moral values has nothing to do with the nature of the villagers.

Hence, “Neither I nor II follows".

Additional Information

• If there are two or more sentences that are used to frame a statement, then, the sentences must be interrelated, and mutual contradiction should be there.

• Do not look for truthful notions. The information provided in the statement is the only requirement for a student to answer the question. No assumptions must be made.

• Read the statement carefully and look for keywords that are common between the statement and the conclusions

• If there is more than one conclusion that is applicable to the statement, students must ensure that the conclusions they opt for have some relation with each other.

Q93. Answer: (d) Narmada

The logic followed here is:

Himalayas : Ganga → The Ganges river originates in the Himalaya Mountains.

Similarly,

Satpura : Narmada → The Narmada river originates in the Satpura Mountains.

Hence, ‘Narmada’ is the correct answer.

Additional Information

Rivers	Origin
Yamuna	Yamunotri glacier
Cauvery	Brahmagiri
Godavari	Western Ghats
Narmada	Satpura

Q94. Answer: (d) 32%

Given:

1) 62% officers are punctual (P)

P = a + g + d + f = 62%

2) 58% officers are honest (H)

H = b + g + d + e = 58%

3) 70% officers are brave (B)

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B = c + f + d + e = 70%

4) 38% officers are punctual (P) and honest (H)

g + d = 38%

5) 48% are honest (H) and brave (B)

e + d = 48%

6) 36% are punctual (P) and brave (B)

f + d = 36%

We know that,

100 % = [P + H + B] – [(g +d) + (e +d) + (f +d)] + d

100% = [62% + 58% + 70%] – [(38%) + (48%) + (36%)] + d

100% = 190% - 122% + d

100% = 68% + d

d = 100% - 68%

d = 32%

Hence, '32%' percentage of the officers are punctual (P), honest (H) and brave (B)

Q95. Answer: (c) Two

Given:

Seven persons M, N, O, P, Q, R and S

1) Only four persons sit between O and R.

Case - I

O/R
O/R

Case – II

O/R
O/R

2) Only two persons sit between N and M and M sits immediately above Q.

CASE – I is not possible in this condition So,

Case 2:

N
O/R
M
Q

O/R

3) O sits below M. N sits above M.

Case 2:

N
R
P/S
M
Q
P/S
O

Hence, ‘Two’ persons are sitting between P and S.

Q96. Answer: (d) UPHJI

Table of alphabets place value:

The pattern follows here,

WOMEN is coded as XMPAS

Similarly,

TREND is coded as

Hence, 'TREND' is coded as 'UPHJI'

Q97. Answer: (d) (14, 27)

The pattern followed here is:

1. (50, 85) => 50 and 85 are divisible by 5.
2. (63, 91) => 63 and 91 are divisible by 7.
3. (32, 48) => 32 and 48 are divisible by 2, 4, 8, and 16
4. (14, 27) => 14 and 27 have no common factors.

• Thus, the set (14, 27) is different from the rest.

Hence, "(14, 27)" is the correct answer.

Q98. Answer: (a) TTX

Table show alphabet serial number –

The logic is shown below –

Hence, “TTX” is complete in the series.

Q99. Answer: (c) G is sitting to immediate left of H.

Given:

1) L and H are sitting opposite to each other while G and I are sitting opposite to each other.

2) L is sitting to the immediate right side of I

3) A is sitting immediately next to and in between H and C.

Now, check the options:

Option (1) A is 5th person to the left of I → False (A is 4th person to the left of I)

Option (2) I is 4th person to the right of C → False (I is 3rd person to the right of C)

Option (3) G is sitting to the immediate Left of H → True

Option (4) C and L are sitting beside each other → False (3 persons are between them)

Hence, Option(3) is the correct answer.

Q100. Answer: (a) MMELFKFF

Table of alphabets place value:

The pattern follows here,

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'WMHKRDFL' is written as 'RGACMXYD'
Similarly,
'RSLTKQMN' is written as
Hence, 'RSLTKQMN' is coded as 'MMELFKFF'

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