RRB NTPC CBT-I Official Paper (Held On: 12 Mar 2021 Shift 2) (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. Select the option in which the words share the same relationship as that shared by the given pair of words.

Bread : Slice

(a) Biscuit : Packet
(b) Cake : Pastry
(c) Pizza : Bite
(d) Ice Cream : Scoop

Q2. The value of $(3\sqrt{2})/(\sqrt{6} - \sqrt{3}) - (4\sqrt{3})/(\sqrt{6} - \sqrt{2}) - 6/(\sqrt{8} - \sqrt{12})$ is:

(a) $\sqrt{3} + \sqrt{2}$
(b) 1
(c) $\sqrt{3} - \sqrt{2}$
(d) $5\sqrt{3}$

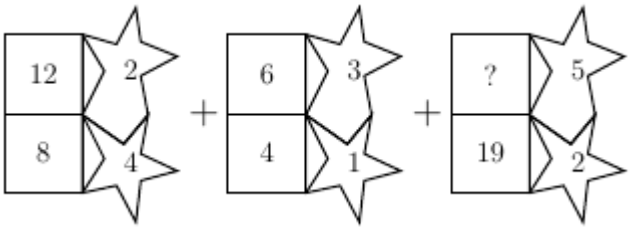
Q3. The sum of two numbers is 10 and the difference in their squares is 60. What are the two numbers?

(a) 7 and 3
(b) 8 and 2
(c) 6 and 4
(d) 5 and 5

Q4. Which of the following is NOT a Navratna company?

(a) Engineers India Limited
(b) Airports Authority of India
(c) Bharat Electronics Limited
(d) Oil India Limited

Q5. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 11
(b) 10
(c) 21
(d) 12

Q6. The UN General Assembly defined Sustainable Development Goals in the year:

(a) 2013
(b) 2014
(c) 2015

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(d) 2016

Q7. Intestinal juice converts protein in food into which molecules?

(a) Glycerol
(b) Amino acid
(c) Fatty acid
(d) Glucose

Q8. Where was Mahatma Gandhi during independence day celebration on 15th August 1947?

(a) Kolkata
(b) Delhi (Birla House)
(c) Varanasi
(d) Ahmedabad (Sabarmati)

Q9. If cos 28° + sin 28° = k, then cos 17° is equal to:

(a) k/2
(b) k/(√2)
(c) • k/(√2)
(d) √2 k

Q10. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statements:

I. Some of the tea sold at this tea stall is Tata Tea.

II. None of the tea sold at this tea stall is Ahmet Tea.

III. All the tea sold at this stall is very aromatic and tasty.

Conclusions:

(i) Some of the tea sold at this tea stall is not Tata Tea but is aromatic.

(ii) Ahmet Tea sold at this tea stall is very aromatic.

(iii) Tata Tea sold at this tea stall is very tasty.

(a) Only conclusions (i) and (ii) follow.
(b) Only conclusion (i) follows.
(c) Only conclusion (iii) follows.
(d) Only conclusions (i) and (iii) follow.

Q11. The length of a rectangle is 30 cm and its width is 2/3 of its length. What will be the area of a square having a perimeter that is identical to the perimeter of the rectangle described here?

(a) 620 cm²
(b) 600 cm²
(c) 625 cm²
(d) 640 cm²

Q12. Who was not amongst the First Awardee of Bharat Ratna-the highest civilian award of the Republic of India?

(a) C Rajagopalachari
(b) M. Visvesvaraya
(c) C. V. Raman
(d) Sarvepalli Radhakrishnan

Q13. Which of the following SAARC Centre is established in India?

(a) SAARC Energy Centre (SEC)
(b) SAARC Disaster Management Centre (SDMC)
(c) SAARC Cultural Centre (SCC)
(d) SAARC Agriculture Centre (SAC)

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Q14. Rafique and Pritam invested identical sums of money for two years at interest rates that compound annually at 15% per annum and 10% per annum respectively. If Rafique earns Rs. 2,250 more as interest than Pritam during these two years, then how much did each of them invest initially?

(a) Rs. 20,000
(b) Rs. 18,000
(c) Rs. 20,250
(d) Rs. 22,500

Q15. In which year had ISRO launched EDUSAT (GSAT-3), a satellite exclusively dedicated to die educational sector?

(a) 2010
(b) 2015
(c) 2004
(d) 2007

Q16. The cost price of an article is 64% of the marked price. Calculate the percentage gain after allowing a discount of 12%.

(a) 37.5
(b) 50.5
(c) 52
(d) 48

Q17. The Kakori Conspiracy case happened in _____.

(a) 1929
(b) 1923
(c) 1928
(d) 1925

Q18. Four words have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) Butter
(b) Cheese
(c) Chocolate
(d) Cream

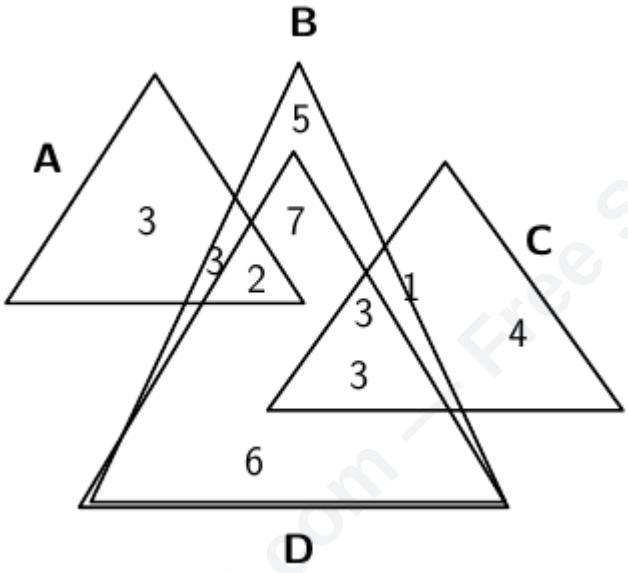
Q19. The symbol of Indian Rupee, was conceptualized and designed by whom?

(a) D Udaya Kumar
(b) Manoj Kumar
(c) Dheeraj Tiwari
(d) Hari Shankar

Q20. The following diagram is a combination of four figures, A, B, C and D. Figure A represents the number of people who drink green tea. Figure B represents the number of people who drink cappuccino. Figure C represents the number of people who drink milk tea. Figure D represents the number of people who drink latte.

How many people drink latte or cappuccino but not milk tea?

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(a) 15
(b) 30
(c) 23
(d) 11

Q21. Find the approximate percentage of aggregate marks scored by Ramesh, who obtained 50%, 60% and 70% marks in three examinations with maximum marks 100, 130 and 150 respectively.

(a) 55.5
(b) 70.1
(c) 61.32
(d) 71.23

Q22. How many biodiversity hotspots does India host?

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

Q23. A cylindrical vessel of inner radius 4 cm contains water up to some height. A solid sphere of radius 3 cm is lowered into the water until it is completely immersed. The water level in the vessel will rise by:

(a) 9/2 cm
(b) 2/9 cm
(c) 9/4 cm
(d) 4/9 cm

Q24. Who is awarded the "Player of the Series" for the Cricket Test Series between India and Australia concluded in Jan 2021?

(a) Pat Cummins
(b) Shubman Gill
(c) Steve Smith
(d) Rishabh Pant

Q25. Read the given statements and decide which of the conclusions given in the options do NOT logically follow from the statements.

Statements:

1. All rabbits are men.
2. Some men are batman.
3. No batman is a rabbit.

(a) Some batmen are neither men nor rabbit.
(b) Some batman are not rabbits but they are men.
(c) Some batmen are both men and rabbits.
(d) Some men are neither batman nor rabbits.

Q26. How much insurance cover is available for accidental death under the Pradhan Mantri Suraksha Bima Yojana (PMSBY)?
(a) Rs. 2 lakh
(b) Rs. 5 lakh
(c) Rs. 3 lakh
(d) Rs. 10 lakh

Q27. Which of the following comes under the jurisdiction of the Ministry of Mines?
(a) Copper
(b) Petroleum
(c) Natural Gas
(d) Coal

Q28. The positive value of √(10 + √(25 + √(108 + √(154 + √225)))) is:
(a) 4
(b) 10
(c) 6
(d) 8

Q29. Which is the native state of Bharat Ratna awardee Bhupen Hazarika?
(a) Arunachal Pradesh
(b) West Bengal
(c) Assam
(d) Manipur

Q30. Which lens will be suitable for a myopic person?
(a) Compound lens
(b) Convex lens
(c) Goggles
(d) Concave lens

Q31. In the absence of the President of India, who would take charge of the President's office?
(a) Ex-officio Chairperson of the Rajya Sabha
(b) Chief Justice of India
(c) Prime Minister
(d) Senior most judge of the Supreme Court

Q32. A point P is 13 cm from the center of a circle. The length of the tangent drawn from P to the circle is 12 cm. Find the radius of the circle.
(a) 3 cm
(b) 5 cm
(c) 4 cm
(d) 6 cm

Q33. John is only 40% as efficient as Jesse. If John alone can do a piece of work in 35 days, how many days will it take the duo to complete the work, if they work together?
(a) 12 days
(b) 10 days
(c) 11 days
(d) 9 days

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Q34. A train when moves at an average speed of 40 km/h, reaches its destination on time. When its average speed becomes 35 km/h, then it reaches its destination 15 min late. Find the distance.

(a) 40 km
(b) 70 km
(c) 30 km
(d) 80 km

Q35. The Sepoy Revolt of 1857 started on which date?

(a) 10 May
(b) 1 May
(c) 15 August
(d) 10 July

Q36. Find the value of sin 34°+ cos 64° - cos 4°

(a) 1
(b) 1/2
(c) 3/4
(d) 0

Q37. Find the value of $21^2 + 22^2 + 23^2 +$ _____ $+ 30^2$

(a) 5865
(b) 6585
(c) 8565
(d) 6855

Q38. Which of the following groups consists of only output devices?

(a) Plotter, printer and monitor
(b) Mouse, printer and monitor
(c) Keyboard, printer and monitor
(d) Scanner, printer and monitor

Q39. What will happen if we cover a burning candle with a glass jar?

(a) Flame will slow down
(b) Flame will be higher
(c) It will continue burning
(d) It will stop burning

Q40. As of October 2020, which of the following is NOT recognised as a national party?

(a) Samajwadi Party
(b) Communist Party of India (Marxist)
(c) Bahujan Samaj Party
(d) Nationalist Congress Party

Q41. Which of the following product is formed due to burning of a magnesium ribbon with a spirit lamp?

(a) Magnesium oxide
(b) Magnesium dioxide
(c) Magnesium sulphate
(d) Magnesium hydroxide

Q42. Which of the following is NOT located in Assam?

(a) Dampa Tiger reserve
(b) Nameri National Park
(c) Kaziranga National Park
(d) Manas National Park

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Q43. The value of $((0.96)^3 - (0.1)^3)/((0.96)^2 + 0.096 + (0.1)^2)$ is:

(a) 0.95
(b) 1.06
(c) 0.86
(d) 0.97

Q44. If the system of equation 3x - 2y = 8, 2ax + (a - b) y = 48 has infinitely many solutions then:

(a) a = b/3 + 2
(b) a = b - 3
(c) 3a + b = 0
(d) a + 3b = 0

Q45. Article 21A was added to the Constitution of India by which constitutional amendment act?

(a) 94^(th) Constitutional Amendment
(b) 42^(nd) Constitutional Amendment
(c) 86^(th) Constitutional Amendment
(d) 93^(rd) Constitutional Amendment

Q46. The sum of three numbers is 253. If the first number be twice the second and third number be one-third of the first, then the second number is

(a) 84
(b) 54
(c) 48
(d) 69

Q47. Which of the following is NOT an operating system?

(a) Mac
(b) Intel
(c) Windows
(d) Linux

Q48. A hollow sphere of internal and external diameters 4 cm and 8 cm is melted into cone of base diameter 8 cm. The height of the cone is:

(a) 16 cm
(b) 20 cm
(c) 15 cm
(d) 14 cm

Q49. Which of the following tribes belongs to the Andaman and Nicobar Islands?

(a) Sentinelese
(b) Kharwar
(c) Bhil
(d) Gond

Q50. Select the option that is related to the third term in the same way as the second term is related to the first term.

Green Revolution : Agriculture : White Revolution : ?

(a) Salt
(b) Sugar
(c) Milk
(d) Rice

Q51. Who/What are the natural hosts of Nipah virus?

(a) Birds
(b) Pigs
(c) Goats

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(d) Fruit bats

Q52. If a1, a2, a3, _____a_n in R, then $(x - a1)^2 + (x - a2)^2 +$ _____ $+ (x - a_n)^2 = 0$ assumes its least value at:

(a) x = (2(a1 + a2 + a3 + ... + a_n))/n
(b) x = 2(a1 + a2 + a3 + _____ + a_n)
(c) x = ((a1 + a2 + a3 + ... + a_n))/n
(d) a = n(a1 + a2 + a3 + _____ + a_n)

Q53. Select the number that can replace the question mark (?) in the following series.

3, 8, ?, 33, 53

(a) 18
(b) 30
(c) 22
(d) 28

Q54. If 24 is the LCM of two numbers and the numbers are in the ratio of 1 : 2, then the product of the two numbers is:

(a) 820
(b) 280
(c) 288
(d) 300

Q55. If $(1 + \tan\alpha)(1 + \tan 4\alpha) = 2$, α in $(0, \pi/16)$ then α is equal to:

(a) $\pi/60$
(b) $\pi/40$
(c) $\pi/20$
(d) $\pi/30$

Q56. Who among the former INA leaders was not charged with waging war against the British India government?

(a) Gurbaksh Singh Dhillon
(b) Prem Kumar Sehgal
(c) Shah Nawaz Khan
(d) Mohan Singh

Q57. Who is the Founder Director of ISRO's Human Space Flight Centre (HSFC)?

(a) Dr. K Kasturirangan
(b) R Hutton
(c) Dr. K Sivan
(d) Dr. S Unnikrishnan Nair

Q58. Two men start together walking to a certain destination, one at the speed of 3 km/h and another at the speed of 3.75 km/h. The latter arrives half an hour before the former, the distance is:

(a) 9.5 km
(b) 7.5 km
(c) 6 km
(d) 8 km

Q59. Select the option that is related to the third term in the same way as the second term is related to the first term.

Canvas : Artist :: Wall : ?

(a) Painter
(b) Contractor
(c) Mason
(d) Carpenter

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Q60. Which of the following nation is NOT a member of the BIMSTEC organisation?

(a) Bhutan
(b) Maldives
(c) Nepal
(d) Myanmar

Q61. Which Economic Census was conducted in 2019 in India?

(a) Seventh
(b) Eighth
(c) First
(d) Sixth

Q62. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statement(s).

Statements:

Some toffies are candies.

Some candies are chocolates.

All chocolates are lollipops.

Conclusions:

I. No lollipop is toffy.

II. Some lollipops are candies.

(a) Either conclusion I or II follow.
(b) Neither conclusion I nor II follow.
(c) Only conclusion I follow.
(d) Only conclusion II follow.

Q63. Which of the following states does NOT share its border with Mizoram?

(a) Assam
(b) Tripura
(c) Meghalaya
(d) Manipur

Q64. The Madhubani painting originates from which state?

(a) Odisha
(b) Bihar
(c) West Bengal
(d) Jharkhand

Q65. How many states of India share borders with Bangladesh?

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

Q66. The Battle of Chausa between Humayun and Sher Shah Suri was fought in the year:

(a) 1542
(b) 1529
(c) 1540
(d) 1539

Q67. Select the letter that can replace the question mark (?) in the following series.

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(a) V
(b) X
(c) P
(d) W

Q68. In an election between two candidates, 75% of the voters cast their votes, out of which 2% of the votes were declared invalid. A candidate got 9261 votes which were 75% of the total valid votes. Find the total number of voters enrolled in that election where each voter can cast only one vote.

(a) 16800
(b) 16200
(c) 16000
(d) 15800

Q69. Cheraw, popularly known as bamboo dance, is a traditional cultural dance of which state?

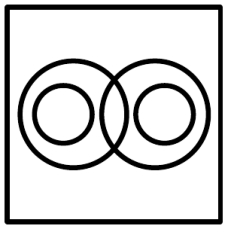
(a) Jharkhand
(b) Uttarakhand
(c) Mizoram
(d) Manipur

Q70. Calculate the approximate simple interest on Rs. 73,000 at 131/3% per annum for 10 months.

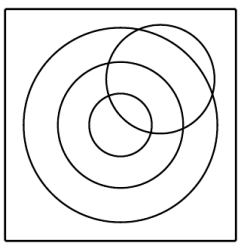
(a) Rs. 9,000
(b) Rs. 6,112
(c) Rs. 8,111
(d) Rs. 7,500

Q71. Select the Venn diagram that best represents the relationship between the given set of classes.
States, Village, Tehsils, Districts

(a)

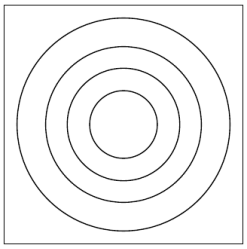


(b)

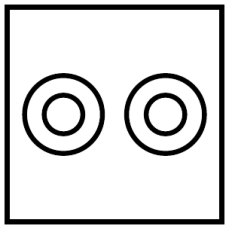


(c) x

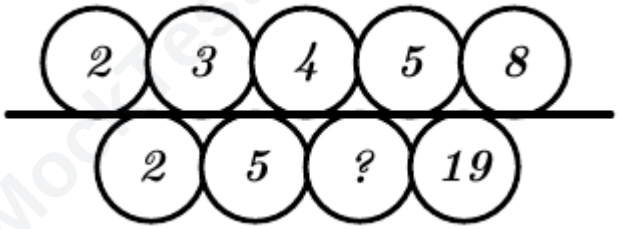
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(d)



Q72. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 21
(b) 10
(c) 9
(d) 5

Q73. If the cost of a car and a bike are in the ratio of 3 : 2 and cost of the car is Rs.15000 more than the bike, then find the cost (in Rs.) of the bike.

(a) 20,000
(b) 30,000
(c) 32,000
(d) 24,000

Q74. The average marks obtained by a group of 45 students were 16.2. One student left the group as a result of which the average of the remaining students rose to 16.5. But another student came in as a result of which the average marks of the group dropped a bit and became 16.4. What were the average marks obtained by the student who left and the one who joined?

(a) 7.5
(b) 12.5
(c) 15
(d) 6

Q75. Find the least positive integer such that its square is greater than 5 times of the integer by -6.

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

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Q76. If Rs. 12,000 becomes Rs. 15,000 at simple interest in 5 years, then find the rate of interest per annum.

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

Q77. Which of the following has conducted the NEET examination, 2020?

(a) MCI
(b) UGC
(c) CBSE
(d) NTA

Q78. Which of the following ministries has been allotted to Pratap Chandra Sarangi as a minister of State in current Central Government (as of Dec 2020)?

(a) Textiles
(b) Parliamentary Affairs
(c) Education
(d) Micro, Small and Medium Enterprises

Q79. Which of the following Indian states has no coastline?

(a) Andhra Pradesh
(b) Gujarat
(c) Bihar
(d) West Bengal

Q80. Which of the following is NOT a public sector bank?

(a) Corporation Bank
(b) Indian Overseas Bank
(c) UCO Bank
(d) South Indian Bank

Q81. Find the least number, which gives the same remainder 5, when divided by 6, 10, 15 and 24.

(a) 120
(b) 521
(c) 125
(d) 215

Q82. Simplify the following.

$(0.2 \times 0.2 + 0.02 \times 0.02 - 0.4 \times 0.02)/0.36$

(a) 0.009
(b) 9
(c) 0.09
(d) 0.9

Q83. In a certain code language, 'TIGER' is written as 'VKIGT' and 'LION' is written as 'NKQP'. How will 'FOX' be written as in that code language?

(a) HQZ
(b) EQW
(c) DQV
(d) GQY

Q84. Pandit Birju Maharaj is a legendary dancer of which Indian dance form?

(a) Odissi
(b) Bharatnatyam
(c) Kuchipudi

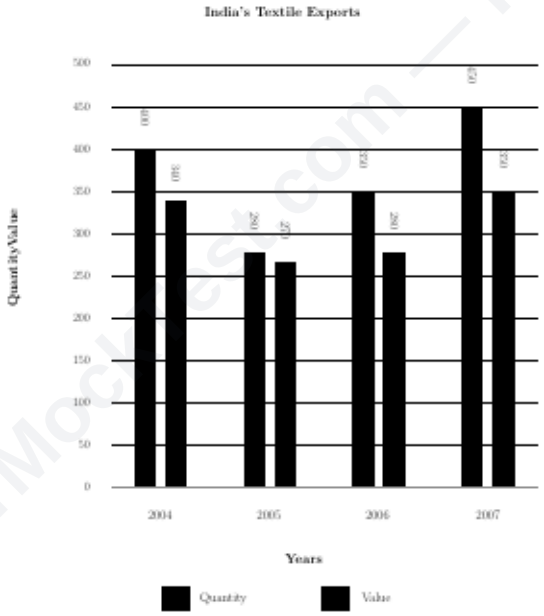
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(d) Kathak

Q85. The denominator of a fraction is 3 more than the numerator. If the numerator as well as the denominator are increased by 4, the fraction becomes 4/5 then what was the original fraction?

(a) 7/10
(b) 8/11
(c) 5/8
(d) 10/13

Q86. The following bar graph shows the quantity (in number of containers) and value (in crores rupees) of India's textile exports for 4 years. Based on the graph answer the question given below.



If, in 2007, textile containers were exported at the same rate per container as that exported in 2004, then what would be the approximate value of exports (in crores rupees) in 2007?

(a) 382.5
(b) 500.7
(c) 529.3
(d) 375.5

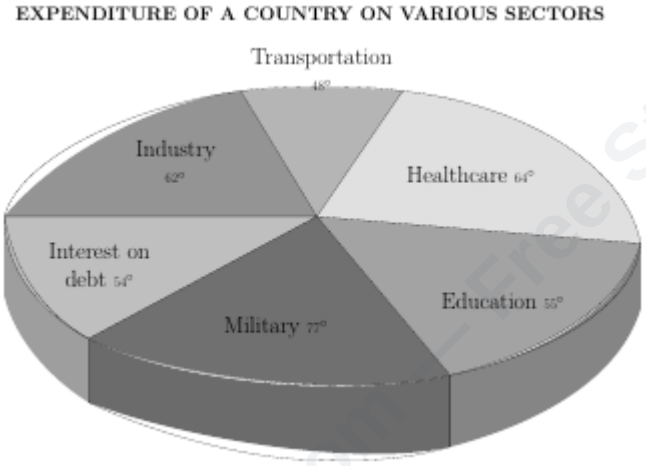
Q87. The following table shows the number of candidates from five states who had appeared for an interview for the post of a PO in the State Bank of India.

States → Year ↓	Bihar	U.P	M.P	Punjab	Kerala
2012	410	300	250	280	440
2013	500	400	280	320	400
2014	450	450	240	260	350
2015	320	500	400	400	380
2016	500	430	540	350	420

Which of the given State recorded the lowest percentage increase of candidates from 2012 to 2016?

(a) Punjab
(b) MP
(c) UP
(d) Bihar

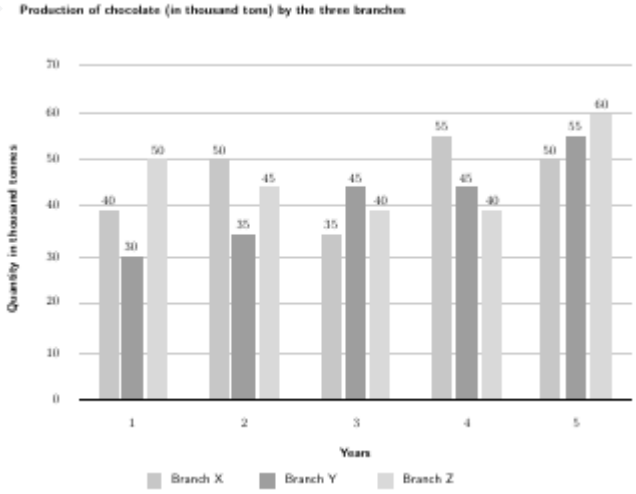
Q88. The following pie chart shows the expenditure incurred by a country on various sectors during a particular year. Based on the pie chart answer the question given below.



If the amount spent on Interest on debt during the year was 90 Crores then what was the total amount spent on all the various sectors in that year?

(a) Rs. 300 crores
(b) Rs. 500 crores
(c) Rs. 1350 crores
(d) Rs. 600 crores

Q89. The following bar graph shows the production of a chocolate (in thousand tons) by three branches, X, Y and Z, of a dairy product company for 5 years. Based on the graph answer the question given below.



Which branch(s) of the company had the maximum average production for the 5 years?

(a) X and Y
(b) Y
(c) Z
(d) X

Q90. Select the number that can replace the question mark (?) in the following series.

98, 116, 134, 152, ?

(a) 174
(b) 172
(c) 168
(d) 170

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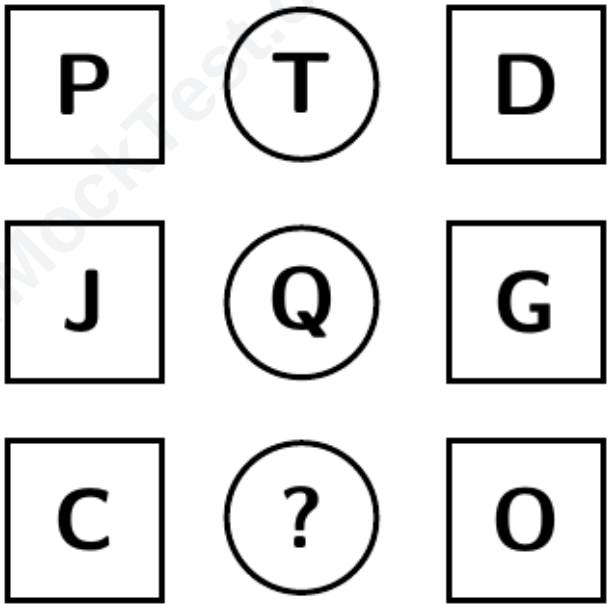
Q91. Kabir Singh walked from his house 30 metres towards the north, 40 metres towards the east, 25 metres towards the north, and then 40 metres towards the west. He stopped at this point to buy some flowers from a flower shop. Then, he again walked 30 metres towards the north. How far and in which direction is Kabir Singh's house from the flower shop?

(a) 55 metres, South
(b) 55 metres, North
(c) 85 metres, North
(d) 85 metres, South

Q92. In a certain code language 'SNOW' is written as 'HMLD'. How will 'MIST' be written as in that language?

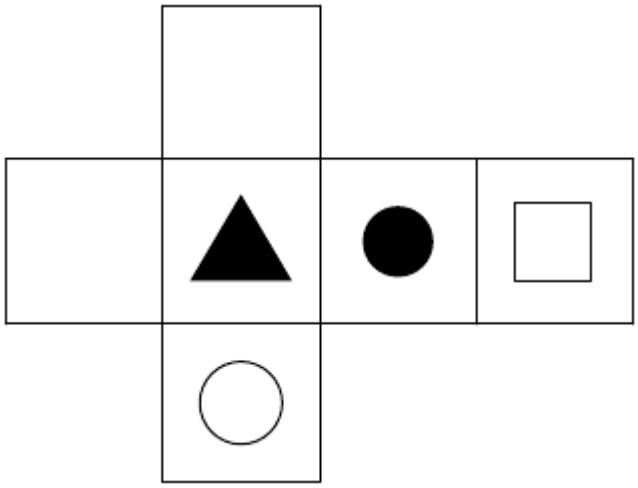
(a) MQHF
(b) OSHI
(c) NQHG
(d) NRHG

Q93. Study the given pattern carefully and select the letter that can replace the question mark (?) in it.



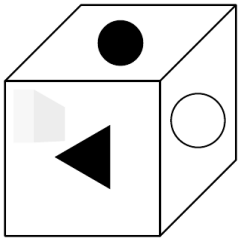
(a) T
(b) S
(c) R
(d) P

Q94. Select the box that can be formed by folding the given sheet along the lines.

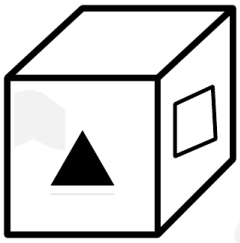


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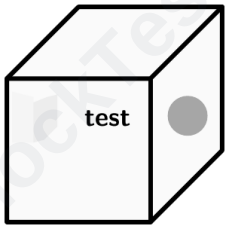
(a)



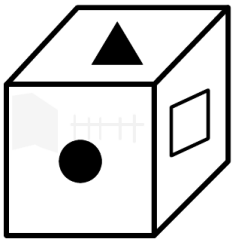
(b)



(c)



(d)



Q95. Ramesh told Jameela, "My grandfather's only son has an only child and you are the wife of that child." How is Ramesh related to Jameela?

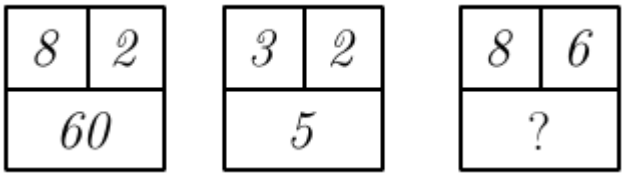
(a) Husband's Father
(b) Husband
(c) Father
(d) Brother

Q96. Select the letter-cluster that can replace the question mark (?) in the following series.

pj, mg, jd, ga, dx, ?

(a) mc
(b) ga
(c) au
(d) az

Q97. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

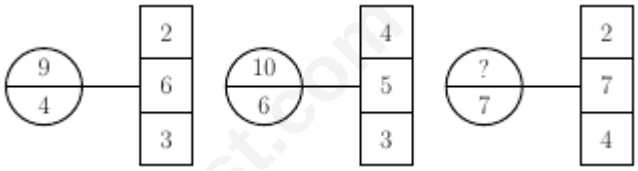


(a) 48
(b) 28
(c) 14
(d) 2

Q98. Faheema is Jitesh's sister and Faheema's mother Aziza has only one brother, Muneer. Asma is the mother of Aziza and Suresh is the son-in-law of Asma. How is Suresh related to Faheema?

(a) Mother's Brother
(b) Father
(c) Husband
(d) Brother

Q99. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 13
(b) 8
(c) 6
(d) 5

Q100. Four options have been given, out of which three are alike in some manner and one is different. Select the odd one.

(a) EHVS
(b) MONL
(c) ACZX
(d) BFWT

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (d) Ice Cream : Scoop

The logic followed here is:
Logic: Part of a whole.
Here,
Bread : Slice → Slice is a part of Bread.
Similarly,
Ice Cream : Scoop → Scoop is a part of Ice Cream.

Hence, the correct answer is "Option 4".

Q2. Answer: (d) 5√3

Given:

Find the value of: (3√2)/(√6 - √3) - (4√3)/(√6 - √2) - 6/(√8 - √12)

Formula used:

Rationalize the denominator using the formula: a / (b + c) = a(b - c) / (b² - c²).

Calculation:

First term: (3√2 / (√6 - √3))

=> Rationalize: (3√2 × (√6 + √3)) / ((√6 + √3)(√6 - √3))

=> (3√2(√6 + √3)) / (6 - 3) = √2(√6 + √3)

=> √12 + √6 = 2√3 + √6

Second term: (4√3 / (√6 - √2))

=> Rationalize: (4√3 × (√6 + √2)) / ((√6 + √2)(√6 - √2))

=> (4√3(√6 + √2)) / (6 - 2) = √3(√6 + √2)

=> √18 + √6 = 3√2 + √6

Third term: (6 / (√8 - √12))

=> Rationalize: (6 × (√8 + √12)) / ((√8 - √12)(√8 + √12))

=> (6(√8 + √12)) / (8 - 12) = -(6(√8 + √12)) / 4 = -(3/2)(√8 + √12)

=> -(3/2)(2√2 + 2√3) = -3(√2 + √3)

Final Calculation:

2√3 + √6 - (3√2 + √6) - (-3(√2 + √3))

2√3 + √6 - 3√2 - √6 + 3√2 + 3√3

=> 5√3 + 0 + 0

Therefore The correct answer is 5√3.

Q3. Answer: (b) 8 and 2

Given:

The sum of two numbers = 10.

The difference in their squares = 60.

Formula Used:

Let the two numbers be x and y.

Sum: x + y = 10

Difference of squares: x² - y² = 60

We know that x² - y² = (x + y)(x - y)

Calculation:

Given x + y = 10

And x² - y² = 60

Substitute x + y in the second equation:

(x + y)(x - y) = 60

=> 10(x - y) = 60

=> x - y = 6

Now we have the system of equations:

1. x + y = 10

2. x - y = 6

Adding these two equations:

=> (x + y) + (x - y) = 10 + 6

=> 2x = 16

=> x = 8

Substitute x = 8 into x + y = 10 :

=> 8 + y = 10

=> y = 2

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The two numbers are 8 and 2.

Q4. Answer: (b) Airports Authority of India

The correct answer is the Airports Authority of India

Key Points

• The company that is NOT a Navratna company among the options listed is the Airports Authority of India.

• Navratna status is a recognition given by the Government of India to select public sector enterprises (PSEs) that have shown excellent performance and have the potential for further growth.

• This status allows these PSEs greater financial and operational autonomy compared to other public sector companies.

• It is responsible for creating, upgrading, maintaining, and managing civil aviation infrastructure in India.

Additional Information

• Engineers India Limited (EIL): EIL is a Navratna company. It provides engineering consultancy and EPC services primarily focused on the oil and gas and petrochemical industries.

• Bharat Electronics Limited (BEL): BEL is a Navratna company. It is engaged in the design, development, and manufacture of electronics equipment mainly for the Indian defence services.

• Oil India Limited (OIL): OIL is a Navratna company. It is involved in the exploration, development, and production of crude oil and natural gas, transportation of crude oil, and production of LPG.

Q5. Answer: (b) 10

The logic followed here is:

Figure 1) 12 + 8 = 20 and $2^2 + 4^2 = 4 + 16 = 20$

Figure 2) 6 + 4 = 10 and 32 + 12 = 9 + 1 = 10

Similarly,

Figure 3) 10 + 19 = 29 and 52 + 22 = 25 + 4 = 29

Hence, the correct answer is "10".

Q6. Answer: (c) 2015

The correct answer is 2015

Key Points

• The United Nations General Assembly defined the Sustainable Development Goals (SDGs) in 2015:

• Goal 3: Good health and well-being

• Goal 4: Quality education

• Goal 5: Gender equality

• Goal 6: Clean water and sanitation

• Goal 12: Responsible consumption and production

• Goal 14: Life below water

• Goal 15: Life on land

• The SDGs are part of the UN's 2030 Agenda for Sustainable Development.

• The goals are intended to:

• Eradicate poverty, Find sustainable development solutions, Ensure everyone's human rights, and Make sure no one is left behind by 2030.

Q7. Answer: (b) Amino acid

The correct answer is Amino acid

Key Points

• Intestinal juice converts protein in food into amino acids

• The small intestine breaks down proteins into amino acids, carbohydrates into glucose, and fats into fatty acids and glycerol.

• The enzymes in intestinal juice, such as erepsin or peptidases, help break down proteins into amino acids.

• The stomach breaks down proteins into smaller chains of amino acids using hydrochloric acid and proteases.

• These smaller chains then move into the small intestine.

• After digestion, nutrients are absorbed in the form of amino acids, glucose, fatty acids, and glycerol.

Additional Information

• Glycerol

• Glycerol is a key component of triglycerides and phospholipids, which are essential for energy storage and cell membrane

structure.

• Glycerol has various industrial applications, including in the production of cosmetics, pharmaceuticals, and food additives.

• Fatty Acids

• Fatty acids are the primary components of triglycerides, which serve as a long-term energy storage form in the body.

• Fatty acids are essential for the formation of cell membranes, providing a barrier between the cell and its environment.

• Glucose

• Glucose is the primary source of energy for cells, fueling cellular processes like metabolism and muscle contraction.

• Glucose is the basic unit of carbohydrates, which are essential for energy storage and structural support in organisms.

Q8. Answer: (a) Kolkata

The correct answer is Kolkata

Key Points

• Mahatma Gandhi was in Kolkata on August 15, 1947, the day India gained independence, instead of celebrating with the rest of the country

• Gandhi was in Kolkata to try to restore peace in the city, which was experiencing communal violence.

• He had arrived in Calcutta on August 9, 1947, and had promised to protect the Hindu minority from the effects of partition.

• Gandhi spent the day fasting, praying, and spinning khadi. He woke up at 3:45 AM and received many congratulatory messages, but he did not celebrate.

• In Delhi, celebrations included a speech by Nehru called "Tryst with Destiny".

Q9. Answer: (b) k/(√2)

Given:

cos 28° + sin 28° = k

Formula Used:

cos A + cos B = 2cos(A + B)/2.cos(A - B)/2

sin(90° - θ) = cos θ

cos 45° = 1/√2

Calculation:

cos 28° + sin 28° = k

=> cos 28° + sin(90° - 62°) = k

=> cos 28° + cos 62° = k

=> cos A + cos B = 2cos(A + B)/2.cos(A - B)/2

=> cos 28 + cos 62 = 2cos(28 + 62)/2.cos(62 - 28)/2

=> cos 28 + cos 62 = 2cos90/2.cos34/2 = k

=> 2cos45° × cos17° = k

=> 2× 1/√2 × cos17° = k

=> cos 17° = k/√2.

Therefore The correct answer is option 2.

Q10. Answer: (d) Only conclusions (i) and (iii) follow.

Given,

Statements:

I. Some of the tea sold at this tea stall is Tata Tea.

II. None of the tea sold at this tea stall is Ahmet Tea.

III. All the tea sold at this stall is very aromatic and tasty.

Conclusions:

I. Some of the tea sold at this tea stall is not Tata Tea but is aromatic - True (Because, according to Statement III, all tea sold at the stall is aromatic and tasty, which includes both Tata Tea and other teas).

II. Ahmet Tea sold at this tea stall is very aromatic - False (Because, according to Statement II, none of the tea sold at this tea stall is Ahmet Tea).

III. Tata Tea sold at this tea stall is very tasty - True (Because, according to Statement III, all tea sold at this stall is very aromatic and tasty, which includes Tata Tea).

So, Only conclusions I and III follow.

Hence, the correct answer is "Option 4".

Q11. Answer: (c) 625 cm²

Given:

Length of the rectangle = 30 cm

Width of the rectangle = (2/3) of its length = (2/3) × 30 cm = 20 cm

Formula Used:

Perimeter of a rectangle = 2 × (Length + Width)

Perimeter of a square = 4 × Side

Area of a square = Side²

Calculation:

Perimeter of the rectangle = 2 × (30 cm + 20 cm)

=> Perimeter = 2 × 50 cm

=> Perimeter = 100 cm

Perimeter of the square = 100 cm

4 × Side = 100 cm

=> Side = 100 cm / 4

=> Side = 25 cm

Area of the square = Side²

=> Area = 25 cm × 25 cm

=> Area = 625 cm²

The correct answer is option 3, 625 cm².

Q12. Answer: (b) M. Visvesvaraya

The correct answer is M.Visvesvaraya

Key Points

• M. Visvesvaraya was not among the first recipients of the Bharat Ratna, India's highest civilian award

• The first recipients of the Bharat Ratna in 1954 were C. Rajagopalachari, Sarvepalli Radhakrishnan, and C. V. Raman

• C. Rajagopalachari: The last Governor-General of the Dominion of India

• Sarvepalli Radhakrishnan: The second President and first Vice President of India

• C. V. Raman: A Nobel Prize-winning physicist

• The Bharat Ratna is awarded for exceptional service or performance in any field.

• The Prime Minister recommends recipients to the President, and the maximum number of awards given per year is three.

• Recipients receive a certificate signed by the President and a medallion, but no monetary grant

Q13. Answer: (b) SAARC Disaster Management Centre (SDMC)

The correct answer is SAARC Disaster Management Centre(SDMC)

Key Points

• The SAARC Documentation Centre (SDC) and the SAARC Disaster Management Centre (SDMC) Interim Unit (IU) are both SAARC centres established in India

• SAARC Documentation Centre (SDC)

• Established in 1994 in New Delhi, India, the SDC is affiliated with SAARC. Some say it's a leading institute for scientific popularization in India.

• SAARC Disaster Management Centre (SDMC) Interim Unit (IU)

• Established in November 2016 in Gandhinagar, Gujarat, the SDMC IU is located under the Gujarat Institute of Disaster Management (GIDM).

• The SDMC's mandate is to support member states in reducing disaster risk. Its activities include:

• Applying science and technology

• Exchanging best practices

• Developing capacity

• Conducting collaborative research

• Networking

• Coordinating national tuberculosis programs

• Exchanging information and research

• Implementing activities

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• Collecting, analyzing, and disseminating information

Additional Information

• SAARC Energy Centre (SEC) in Islamabad, Pakistan:

• Established: 2006

• It is mandated to promote energy cooperation among SAARC member states, including the development of hydropower, renewable energy, and energy efficiency

• SAARC Cultural Centre (SCC) in Colombo, Sri Lanka:

• Established: 1985

• It is mandated to promote cultural exchange and cooperation among SAARC member states, including organizing festivals, exhibitions, and workshops, and promoting the arts, literature, and music of the region

• SAARC Agriculture Centre (SAC) in Dhaka, Bangladesh

• Established: 1989

• It is mandated to promote agricultural cooperation among SAARC member states, including sharing knowledge and technology and improving agricultural productivity and sustainability

Q14. Answer: (a) Rs. 20,000

Given:

Rafique's interest rate = 15% per annum, compounded annually

Pritam's interest rate = 10% per annum, compounded annually

Rafique's interest = Rs. 2,250 more than Pritam's interest after 2 years

Formula Used:

Compound Interest Formula: A = P(1 + r/n)^(nt)

Where,

P = Principal amount

r = Annual interest rate (decimal)

n = Number of times interest applied per time period

t = Number of time periods the money is invested for

A = Amount after time t

Calculation:

Let the initial investment be Rs. x.

For Rafique:

Interest Rate = 15% = 0.15

Time = 2 years

Compounded annually, n = 1

$A_R = x(1 + 0.15/1)^{(1×2)}$

$A_R = x(1.15)^2$

$A_R = x × 1.3225$

For Pritam:

Interest Rate = 10% = 0.10

Time = 2 years

Compounded annually, n = 1

$A_P = x(1 + 0.10/1)^{(1×2)}$

$A_P = x(1.10)^2$

$A_P = x × 1.21$

Rafique's Interest = $A_R - x = x × 1.3225 - x = x(1.3225 - 1) = 0.3225x$

Pritam's Interest = $A_P - x = x × 1.21 - x = x(1.21 - 1) = 0.21x$

Given, Rafique's Interest - Pritam's Interest = Rs. 2,250

$0.3225x - 0.21x = 2250$

$0.1125x = 2250$

$\Rightarrow x = 2250 / 0.1125$

$\Rightarrow x = 20000$

Each of them invested initially Rs. 20,000.

Q15. Answer: (c) 2004

The correct answer is 2004

Key Points

• ISRO launched EDUSAT (GSAT-3) on September 20, 2004.

• It was India's first satellite dedicated exclusively to the education sector.

• EDUSAT was designed to facilitate distance learning, especially in remote areas, by providing high-quality educational content through satellite-based transmission.

• It aimed to bridge the digital divide and enhance access to education for students across the country.

Additional Information

• ISRO has made significant contributions to space exploration.

• It has successfully launched numerous satellites for communication, remote sensing, meteorology, and navigation purposes.

• Notable missions include Chandrayaan-1, which discovered water molecules on the Moon, and Mangalyaan, India's first mission to Mars.

• ISRO is renowned for its cost-effective approach to space missions.

• It has consistently delivered successful missions at a fraction of the cost compared to other space agencies.

• This has made India a major player in the global space community.

Q16. Answer: (a) 37.5

Given:

Cost price (CP) of an article = 64% of the marked price (MP).

Discount = 12%

Formula Used:

Percentage Gain = ((Selling Price (SP) - Cost Price (CP)) / Cost Price (CP)) × 100

Calculation:

Let the marked price (MP) be 100.

Cost price (CP) = 64% of MP

CP = 64

Discount given = 12% of MP

Discount = 12% of 100 = 12

Selling price (SP) = MP - Discount

SP = 100 - 12 = 88

Percentage Gain = ((SP - CP) / CP) × 100

=> Percentage Gain = ((88 - 64) / 64) × 100

=> Percentage Gain = (24 / 64) × 100

=> Percentage Gain = 0.375 × 100

=> Percentage Gain = 37.5%

The correct answer is option 1.

Q17. Answer: (d) 1925

The correct answer is 1925

Key Points

• The Kakori Conspiracy case happened in 1925.

• The Kakori Conspiracy was a significant event in India's struggle for independence.

• It was an armed robbery that took place on August 9, 1925, on a train near Kakori, a village in Uttar Pradesh.

• The robbery was carried out by members of the Hindustan Republican Association (HRA), a revolutionary organization aiming to overthrow British rule in India.

• The revolutionaries targeted a government treasury train, hoping to seize funds to finance their revolutionary activities.

• While the robbery was successful, it led to a major crackdown by the British authorities.

• Several members of the HRA were arrested, tried, and convicted

• Some were sentenced to death, including prominent figures like Ram Prasad Bismil, Ashfaqullah Khan, and Roshan Singh.

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Q18. Answer: (c) Chocolate

The logic followed here is:

Butter	Dairy Product
Cheese	Dairy Product
Chocolate	Confectionery
Cream	Dairy Product

Butter, Cheese, Cream all are Dairy Products,

Whereas,

Chocolate is a Confectionery item.

Hence, the correct answer is "Chocolate".

Q19. Answer: (a) D Udaya Kumar

The correct answer is D Udaya Kumar

Key Points

• D. Udaya Kumar, a talented designer, won an open competition organized by the Government of India to design the Indian Rupee symbol.

• His winning design, a blend of the Devanagari letter "Ra" and the Roman capital letter "R," was officially adopted in 2010.

• The symbol effectively represents the Indian currency while also incorporating elements of the Indian flag and a sense of equality.

Additional Information

• Gurbaksh Singh Dhillon was a prominent figure in the Indian National Army (INA).

• He commanded the Nehru Brigade and actively participated in military operations against the British.

• His involvement led to his arrest and subsequent trial for waging war against the British Indian government.

• Prem Kumar Sehgal was another key leader in the INA. As a Colonel, he played a crucial role in the INA's military campaigns.

• He was captured by the British and charged with waging war against the British Indian government, facing trial alongside other INA leaders.

• Shah Nawaz Khan was a highly respected Major General in the INA.

• He led significant military operations against the British and was a charismatic figure among the INA soldiers.

• Like Dhillon and Sehgal, he was arrested and charged with waging war against the British Indian government.

Q20. Answer: (c) 23

According to the given information:

The shaded part represents people drink latte or cappuccino but not milk tea = 23.

Hence, the correct answer is "23".

Q21. Answer: (c) 61.32

Given:

Marks obtained in three examinations: 50%, 60%, 70%.

Maximum marks for the three examinations: 100, 130, 150.

Formula Used:

Aggregate percentage = (Total marks obtained / Total maximum marks) × 100

Calculation:

Marks obtained in the first exam = 50% of 100 = 50

Marks obtained in the second exam = 60% of 130 = 78

Marks obtained in the third exam = 70% of 150 = 105

Total marks obtained = 50 + 78 + 105 = 233

Total maximum marks = 100 + 130 + 150 = 380

Aggregate percentage = (233 / 380) × 100

=> Aggregate percentage = 0.6132 × 100

=> Aggregate percentage = 61.32%

The approximate percentage of aggregate marks scored by Ramesh is 61.32%.

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Q22. Answer: (c) Four

The correct answer is Four.

Key Points

• India hosts four biodiversity hotspots out of the 36 recognized worldwide.

• The Himalayas: Includes the entire Indian Himalayan region (and stretches into neighboring countries).

• The Western Ghats: Runs along the western coast of India and extends into the neighboring regions.

• The Indo-Burma region: Covers the northeastern parts of India and extends into Myanmar and parts of Southeast Asia.

• The Sundaland: Includes the Nicobar Islands, which are part of the larger Sundaland region that covers parts of Indonesia, Malaysia, and other areas.

Additional Information

• The Himalayas Geographic Range: Spans five countries, including Bhutan, China, India, Nepal, and Pakistan. The Indian Himalayan region covers states like Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, and the hill ranges of Assam and West Bengal.

• The Western Ghats Geographic Range: Runs along the western coast of India, extending from Gujarat to Kerala. It covers six states: Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu, and Kerala.

• Indo-Burma Geographic Range: Covers northeastern India, parts of Bangladesh, Myanmar, Thailand, Laos, Cambodia, and southern China.

• Sundaland Geographic Range: Primarily includes the Andaman and Nicobar Islands in India, and it stretches across Indonesia, Malaysia, Thailand, Brunei, and the Philippines.

• These regions host several critically endangered species, such as the Asiatic lion, Ganges river dolphin, Western hoolock gibbon, and numerous amphibians and reptiles.

Q23. Answer: (c) 9/4 cm

Given:

Inner radius of the cylindrical vessel (r) = 4 cm

Radius of the solid sphere (R) = 3 cm

Formula Used:

Volume of the sphere = $4/3\pi R^3$

Volume of the cylinder = π r2 h

Calculation:

Volume of the sphere = $4/3\ \pi\ (3)^3$

Volume of the sphere = $4/3\ \pi\ (27)$

Volume of the sphere = $36\ \pi\ cm^3$

Let the rise in water level be h cm.

Volume of the water displaced = Volume of the sphere

$\pi\ r^2\ h = 36\ \pi$

$\pi\ (4)^2\ h = 36\ \pi$

16h = 36

=> h = 36/16

=> h = 9/4 cm

The water level in the vessel will rise by 9/4 cm.

Q24. Answer: (a) Pat Cummins

The correct answer is Pat Cummins.

Key Points

• In November 2021, Pat Cummins was named the captain of Australia's Test cricket team.

• He was the first fast bowler to lead Australia in Test cricket after Ray Lindwall (who captained one match in 1956).

• The series consisted of four Test matches played between December 2020 and January 2021.

• India won the series 2-1, retaining the Border-Gavaskar Trophy.

Additional Information

• The first international cricket match was played between the United States and Canada in 1844.

• However, it was not until 1877 that the first Test match was played between Australia and England.

• In 2021, India played the highest number of international matches, with a total of 42 matches across all formats.

• Sachin Tendulkar holds the record for the most runs in international cricket, scoring 34,357 runs across all formats.

• The record for the fastest century in ODIs is held by AB de Villiers, who reached 100 runs off just 31 balls against the West Indies in 2015.

• The record for the most wickets in One Day Internationals (ODIs) is held by Muttiah Muralitharan, with 534 wickets during his career.

• The highest individual score in Test cricket is 400 not out, achieved by Brian Lara of the West Indies against England in 2004.

• Women's cricket has gained immense popularity, with the inaugural Women's T20 World Cup taking place in 2009.

Q25. Answer: (c) Some batmen are both men and rabbits.

Given:

1. All rabbits are men.

2. Some men are batman.

3. No batman is a rabbit.

The least possible Venn diagram:

1) Some batmen are neither men nor rabbit. - It contradicts the established relationship that batmen are included in the category of men. Since all batmen are definitely men, so it's impossible for any batman to be neither men nor rabbits.

2) Some batman are not rabbits but they are men. - This conclusion logically follows from statements 2 and 3. Since some men are batman and no batman is a rabbit, it confirms this statement.

3) Some batmen are both men and rabbits. - This conclusion does not logically follow. Statement 3 explicitly states that no batman is a rabbit, so this cannot be true.

4) Some men are neither batman nor rabbits. - This conclusion logically follows. some men are batman and all rabbits are men, there can still be men who are neither batman nor rabbits.

So, Option 3 statement does NOT logically follow from the statements.

Hence, the correct answer is "Some batmen are both men and rabbits."

Q26. Answer: (a) Rs. 2 lakh

The correct answer is Rs. 2 lakh.

Key Points

• PMSBY was launched on May 9, 2015, as part of the Government of India's initiative to promote social security schemes.

• PMSBY is designed primarily for individuals in the age group of 18 to 70 years who hold a bank account.

• The Pradhan Mantri Suraksha Bima Yojana (PMSBY) was launched by Narendra Modi, the Prime Minister of India.

• The scheme offers a sum insured of Rs. 2 lakh in case of accidental death or total disability and Rs. 1 lakh in case of partial disability.

Additional Information

SCHEME/POLICY	LAUNCHED IN YEAR
Pradhan Mantri Jan Dhan Yojana(PMJDY)	2014
Make in India Scheme	2014
Swachh Bharat Mission	2014
Pradhan Mantri Awaas Yojana	2015
Pradhan Mantri Ujjwala Yojana	2016
Pradhan Mantri Fasal Bima Yojana(PMFBY)	2016
Pradhan Mantri Garib kalyan Yojana(PMGKY)	2020
Jal Jeevan Mission	2019
Atal Pension Yojana(APY)	2015

Q27. Answer: (a) Copper

The correct answer is Copper.

Key Points

• The Ministry of Mines was established in 1948, primarily to promote the mining and mineral sector in India.

• The headquarters of the Ministry of Mines is located in New Delhi.

• As of 2024, the Ministry is headed by Pralhad Joshi, who took office in May 2019.

• The Ministry of Mines regulates the mining sector through laws such as the Mines and Minerals (Development and Regulation) Act, 1957.

Additional Information

• Coal is a combustible black or brownish-black sedimentary rock formed from decomposed plant material, primarily composed of carbon along with hydrogen, sulfur, oxygen, and nitrogen.

• Types of Coal:

• Anthracite: The highest grade of coal with a high carbon content and energy output.

• Bituminous: A common type used for electricity generation and steel production.

• Sub-bituminous: Lower carbon content, used mainly for electricity generation.

• Lignite: The lowest grade, often referred to as brown coal, primarily used in electricity generation.

• Natural gas is a fossil fuel composed mainly of methane (CH4) and is found in underground rock formations or associated with other fossil fuels.

• Petroleum, commonly known as crude oil, is a liquid fossil fuel composed mainly of hydrocarbons formed from the remains of ancient marine organisms.

• Types of Petroleum:

• Light Crude Oil: Less dense and easier to refine.

• Heavy Crude Oil: More viscous and difficult to extract and refine.

• Sweet Crude Oil: Low sulfur content, desirable for refining.

• Sour Crude Oil: High sulfur content, requires additional processing.

Q28. Answer: (a) 4

Given:

The expression to evaluate is √(10 + √(25 + √(108 + √(154 + √225)))).

Formula Used:

We use the property of square roots: √x = y => y2 = x.

Calculation:

Start from the innermost square root and move outward:

√ {225} = 15

√{154 + 15} = √{169} = 13

√{108 + 13} = √{121} = 11

√{25 + 11} = √{36} = 6

√{10 + 6} = √{16} = 4

The positive value of √(10 + √(25 + √(108 + √(154 + √225)))) is 4.

Q29. 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, and Pranab Mukherjee.

• Bhupen Hazarika was born on September 8, 1926, in Sadiya, Assam, India.

• He received several prestigious awards like the Dadasaheb Phalke Award, Padma Bhushan, and Padma Vibhushan.

Additional Information

• Bharat Ratna is the highest civilian honor 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.

Q30. Answer: (d) Concave lens

The correct answer is Concave lens.

Key Points

• A concave lens is suitable for a myopic (nearsighted) person.
• Myopia occurs when the eye is longer than normal or when the cornea has too much curvature, causing light rays to focus in front of the retina.
• A concave lens (also known as a diverging lens) is thinner in the center and thicker at the edges.
• It diverges light rays, which helps move the focal point back onto the retina, allowing distant objects to be seen more clearly.

Additional Information

Eye Problem	Description	Type of Lens	Lens Type
Myopia (Nearsightedness)	Distant objects appear blurry; close objects are clear.	Concave Lens	Diverging Lens
Hyperopia (Farsightedness)	Close objects appear blurry; distant objects are clear.	Convex Lens	Converging Lens
Astigmatism	Distorted or blurred vision at all distances due to an irregularly shaped cornea or lens.	Toric Lens	Cylindrical Lens
Presbyopia	Difficulty focusing on close objects due to aging.	Bifocal or Progressive Lens	Multifocal Lens
Anisometropia	Significant difference in prescription between the two eyes.	Appropriate corrective lenses for each eye	Varies depending on the condition
Amblyopia (Lazy Eye)	Reduced vision in one eye that cannot be corrected by glasses alone.	Depends on the underlying cause	This may include corrective lenses, patching, or vision therapy

Q31. Answer: (a) Ex-officio Chairperson of the Rajya Sabha

The correct answer is Ex-officio Chairperson of the Rajya Sabha.

Key Points

• In the absence of the President of India, the Vice President of India would take charge of the President's office.
• Article 65 of the Indian Constitution, the Vice President acts as the President when the President is unable to perform their duties.
• Article 63 This article states that there shall be a Vice-President of India.
• Article 64 The Vice-President shall be ex officio Chairman of the Council of States (Rajya Sabha).

Additional Information

• Article 66 This article details the procedure for the election of the Vice-President.
• Article 67 The Vice-President shall hold office for a term of five years but is eligible for re-election.
• Article 68 This article specifies the time frame within which elections for the Vice-President must be held.
• Article 69 The Vice-President must take an oath of office before assuming their duties, which is administered by the President.
• Article 70 Addresses the role of the Vice-President in situations where the President is unable to perform their functions.
• Article 71 This article provides the provisions regarding the Vice-President's office and the conduct of elections.

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Q32. Answer: (b) 5 cm

Given:

Distance from point P to the center of the circle = 13 cm.

Length of the tangent from P to the circle = 12 cm.

Formula Used:

In a right-angled triangle, by the Pythagorean theorem:

Hypotenuse² = Base² + Perpendicular²

Calculation:

Here, the hypotenuse is the distance from P to the center of the circle, which is 13 cm.

The base is the radius of the circle (r), and the perpendicular is the length of the tangent, which is 12 cm.

Using Pythagorean theorem:

$13^2 = r^2 + 12^2$

=> $169 = r^2 + 144$

=> $r^2 = 169 - 144$

=> $r^2 = 25$

=> $r = \sqrt{25}$

=> r = 5 cm

The radius of the circle is 5 cm.

Q33. Answer: (b) 10 days

Given:

John's efficiency = 40% of Jesse's efficiency

John can complete the work alone in 35 days.

Formula Used:

Work = Efficiency × Time

Total Work = John's Work + Jesse's Work

Time = Total Work / (John's Efficiency + Jesse's Efficiency)

Calculation:

Let Jesse's efficiency be E.

John's efficiency = 0.4 × E

John's work in 35 days = 0.4E × 35

Total Work = 0.4E × 35

=> Total Work = 14E

When working together, their combined efficiency = 0.4E + E

=> Combined Efficiency = 1.4E

Time to complete the work together = Total Work / Combined Efficiency

=> Time = 14E / 1.4E

=> Time = 10 days

The correct answer is option 2: 10 days.

Q34. Answer: (b) 70 km

Given:

Average speed when the train is on time = 40 km/h

Average speed when the train is 15 min late = 35 km/h

Time difference = 15 min = 15/60 hours = 1/4 hours

Formula Used:

Distance = Speed × Time

Calculation:

Let the on-time travel time be t hours, and the distance be d km.

When the train is on time:

d = 40 × t

When the train is 15 min late:

d = 35 × (t + 1/4)

Equating the distances:

40 × t = 35 × (t + 1/4)

=> 40t = 35t + 35/4

=> 40t - 35t = 35/4

=> 5t = 35/4

=> t = 35/4 × 1/5

=> t = 35/20

=> t = 7/4 hours

Now, substituting t back to find the distance:

d = 40 × 7/4

=> d = 70 km

The correct answer is option 2.

Q35. Answer: (a) 10 May

The correct answer is 10 May.

Key Points

• The Sepoy Revolt of 1857, also known as the First War of Indian Independence, started on May 10, 1857.

• The introduction of the Enfield rifle with cartridges rumored to be greased with cow and pig fat offended both Hindu and Muslim sepoys.

• The Governor-General of India in 1857 was Lord Canning.

• The first notable person to die in the Sepoy Revolt of 1857 was Mangal Pandey.

Additional Information

Centre	Beginning	End	Leader	Suppressor
Delhi	11 May 1857	20 Dec 1857	Bahadur shah Zafar	John Nicholson
Kanpur	4 June, 1857	6 Dec 1857	Nana Saheb	Colin Campbell
Lucknow	4 June, 1857	21 Mar 1858	Begum Hazrat Mahal	Colin Campbell
Jhansi	4 June, 1857	18 June 1858	Rani Laxmi Bai	Hugh Rose
Allahabad	5 June, 1857	March 1858	Liyaqat Ali	Colonel Neil
Jagdishpur(Bihar)	Aug 1857	Dec 1858	Kunwar Singh and Amar Singh	William Taylor and Vincent Eyre

Q36. Answer: (d) 0

Given:

Simplify the expression: sin 34° + cos 64° - cos 4°

Formula used:

sin θ = cos (90° - θ)

Sum-to-product identity: cos A + cos B = 2 cos ((A+B)/2) cos ((A-B)/2)

Calculation:

We know the identity sin θ = cos (90° - θ).

Therefore: sin 34° = cos (90° - 34°) = cos 56°

Now, the expression becomes:

cos 56° + cos 64° - cos 4°

Simplify cos 56° + cos 64° using the sum-to-product formula

Using the sum-to-product identity:

cos 56° + cos 64° = 2 cos ((56° + 64°)/2) cos ((64° - 56°)/2)

Simplifying:

cos 56° + cos 64° = 2 cos 60° cos 4°

We know that cos 60° = 1/2,

so: cos 56° + cos 64° = 2 × 1/2 × cos 4° = cos 4°

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Now substitute cos 56° + cos 64° = cos 4° into the original expression:

cos 4° - cos 4° = 0

Therefore The value of sin 34° + cos 64° - cos 4° is 0.

Q37. Answer: (b) 6585

Given:

212 + 222 + 232 + _____ + 302

Formula Used:

The sum of squares of the first n natural numbers is:

S = (n(n + 1)(2n + 1))/6

Calculation:

We need to calculate the sum of squares from 21 to 30.

Step 1: Use the sum of squares formula

The sum of squares of the first n natural numbers is:

S = (n(n + 1)(2n + 1))/6

Step 2: Calculate the sum of squares from 1 to 30

S30 = (30(31)(61))/6 = 9455

Step 3: Calculate the sum of squares from 1 to 20

S20 = (20(21)(41))/6 = 2870

Step 4: Subtract the sums

The sum of squares from 21 to 30 is:

S_(21 to 30) = S30 - S20 = 9455 - 2870 = 6585

Therefore The value of 212 + 222 + 232 + _____ + 302 is 6585.

Q38. Answer: (a) Plotter, printer and monitor

The correct answer is Plotter, printer and monitor.

Key Points

• Output devices are hardware components of a computer that convey information from the computer to the user or to another device.

• The monitor is a screen that displays visual output from the computer.

• A printer produces a hard copy (physical output) of documents, images, or graphics from the computer.

• Function: A plotter is used to produce high-quality graphics, drawings, and blueprints.

Additional Information

• Input devices allow users to provide data and commands to the computer.

• Input Devices: Keyboard, Mouse, Touchscreen, Scanner, Microphone, Webcam, Game Controller, Joystick, Graphics Tablet, Barcode Reader.

• Output devices present processed data from the computer to the user or to another system.

• Output Devices: Monitor, Printer, Plotter, Speakers, Projector, Headphones, LCD Display, LED Display, Braille Display, Virtual Reality Headset.

Q39. Answer: (d) It will stop burning

The correct answer is It will stop burning.

Key Points

• A candle requires oxygen to sustain combustion. When you cover it with a glass jar, the available oxygen inside the jar will be consumed by the flame.

• As the candle burns, it uses up oxygen and produces carbon dioxide and water vapor.

Additional Information

• The principles of combustion and the behavior of gases:

• Depletion of Oxygen:

• A candle requires oxygen to sustain combustion. When you cover it with a glass jar, the available oxygen inside the jar will be consumed by the flame.

• As the candle burns, it uses up oxygen and produces carbon dioxide and water vapor.

• .Flame Extinguishing:

• Once the oxygen level drops below a certain threshold, the flame will extinguish. This typically occurs within a few minutes,

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depending on the size of the candle and the jar.

• Formation of Water Vapor

• The heat from the candle will cause water vapor to form as the wax burns. This vapor will condense on the inner surface of the jar as it cools down

• Reduced Temperature:

• Once the flame goes out, the temperature inside the jar will decrease as there is no longer a source of heat

• Vacuum Effect (if covered tightly):

• If the jar is tightly sealed, a slight vacuum effect may occur as the candle goes out and the air cools, leading to a slight decrease in pressure inside the jar.

Q40. Answer: (a) Samajwadi Party

The correct answer is the Samajwadi Party.

Key Points

• The Samajwadi Party was founded on October 4, 1992, by Mulayam Singh Yadav in Uttar Pradesh, India.

• The party's electoral symbol is a bicycle, which represents progress and movement.

• Mulayam Singh Yadav served as the first Chief Minister of Uttar Pradesh from February 1993 to May 1995.

• The Samajwadi Party has a youth wing called the Samajwadi Yuvjan Sabha, focusing on engaging younger voters.

Additional Information

• The Communist Party of India was founded on December 26, 1925, in Kanpur, India.

• The CPI's electoral symbol is a hammer and sickle, representing the unity of workers and peasants.

• The Bahujan Samaj Party was founded on April 14, 1984, by Kanshi Ram in India.

• The party's electoral symbol is the elephant, representing strength and stability.

• The Indian National Congress was founded on December 28, 1885, in Bombay (now Mumbai).

• The electoral symbol of the Congress party is the hand, which signifies unity and the people's power.

Q41. Answer: (a) Magnesium oxide

The correct answer is Magnesium oxide.

Key Points

• When a magnesium ribbon is burned, it reacts with oxygen in the air to form magnesium oxide (MgO).

• The reaction can be represented by the following equation:$2Mg+O2 \rightarrow 2MgO$

• MgO has a high melting point of approximately 2,800°C (5,072°F), making it suitable for use as a refractory material.

• It is an excellent electrical insulator, which makes it useful in electrical applications where insulation is required.

Additional Information

• Magnesium sulfate is highly soluble in water, allowing it to be easily dissolved for various applications, such as fertilizers and medical uses.

• Magnesium sulfate can exist in both anhydrous ($MgSO4$) and hydrated forms, with the most common being epsomite ($MgSO4·7H2O$).

• Magnesium hydroxide consists of magnesium ions ($Mg²^+$) and hydroxide ions (OH^-).

• Magnesium hydroxide occurs naturally as a mineral called brucite.

• It has potential as a biosorbent for removing heavy metals and other contaminants from wastewater.

Q42. Answer: (a) Dampa Tiger reserve

The correct answer is Dampa National Park.

Key Points

• Dampha National Park is situated in the Mizoram state of India, covering parts of the Champhai district.

• Established as a national park in 1993, Dampha National Park plays a crucial role in the conservation of biodiversity.

• The park experiences a subtropical highland climate, with a wet monsoon season and cool winters.

• It was designated as a tiger reserve under the National Tiger Conservation Authority (NTCA) in 1994.

Additional Information

• Nameri National Park is located in the Sonitpur district of Assam, bordering the Himalayan foothills and the Nameri River.

• Kaziranga National Park is located in the Golaghat and Nagaon districts of Assam, along the banks of the Brahmaputra River.

• Kaziranga is renowned for its population of the Indian one-horned rhinoceros, with about two-thirds of the world’s population residing here

• The park spans approximately 430 square kilometers (166 square miles) and is a UNESCO World Heritage Site.

• Manas National Park is located in the foothills of the Himalayas, straddling the border between India and Bhutan in the Baksa district of Assam.

• The park covers approximately 950 square kilometers (367 square miles) and is also a UNESCO World Heritage Site.

Q43. Answer: (c) 0.86

Given:

The value of $((0.96)^3 - (0.1)^3)/((0.96)^2 + 0.096 + (0.1)^2)$

Formula Used:

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

Calculation:

Here, a = 0.96 and b = 0.1.

Using the formula:

$((0.96)^3 - (0.1)^3)/((0.96)^2 + (0.96 \times 0.1) + (0.1)^2)$

$=> ((0.96)^3 - (0.1)^3)/((0.96)^2 + 0.096 + (0.1)^2)$

=> 0.96 - 0.1

=> 0.86

The correct answer is option 3.

Q44. Answer: (a) a = b/3 + 2

Given:

3x - 2y = 8

2ax + (a - b)y = 48

Concept Used:

For infinitely many solutions, the coefficients must satisfy:

(coefficient of x1)/(coefficient of x2) = (coefficient of y1)/(coefficient of y2) = (constant term1)/(constant term2)

Calculation:

For infinitely many solutions, the coefficients must satisfy:

3/2a = (-2)/(a - b) = 8/48

From 8/48 = 1/6, we get:

3/2a = 1/6

a = 9

Substitute a = 9 into (-2)/(9 - b) = 1/6,

9 - b = -12

b = 21

Therefore The values of a and b for infinitely many solutions are a = 9 and b = 21.

Q45. Answer: (c) 86^(th) Constitutional Amendment

The correct answer is 86th Constitutional Amendment.

Key Points

• The 86th Amendment Act was enacted on December 12, 2002.

• The most notable feature of the 86th Amendment is the insertion of Article 21A into the Constitution.

• Article 21A established the right to education as a fundamental right under the Constitution.

• The Act led to the introduction of the Right of Children to Free and Compulsory Education Act in 2009.

Additional Information

• The 42nd Amendment Act was Passed during the Emergency on December 18, 1976.

• Introduced Article 51A, which enumerates the fundamental duties of citizens.

• The Preamble was amended to include the words "socialist" and "secular" and to emphasize the unity and integrity of the nation.

• The 42nd Amendment is often referred to as the "Mini-Constitution" due to its comprehensive changes.

• 93rd Amendment Act Passed on January 20, 2006.

• Added provisions for the reservation of seats for the Other Backward Classes (OBCs) in educational institutions funded by the government.

• Article 15 was amended to allow for the advancement of any socially and educationally backward classes of citizens.

• 94th Amendment Act was Enacted on August 18, 2006.

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• Provided for the reservation of seats for the Scheduled Castes (SCs) and Scheduled Tribes (STs) in every local body, including Panchayati Raj institutions.

• Clarified provisions regarding the reservation of seats for women in addition to SC/ST reservations.

Q46. Answer: (d) 69

Given:

The sum of three numbers = 253

The first number = 2 × the second number

The third number = (1/3) × the first number

Formula Used:

Let the second number be y.

First number = 2y

Third number = 1/3 × 2y = 2y/3

Sum of three numbers = first number + second number + third number

Calculation:

Sum of three numbers = 253

2y + y + 2y/3 = 253

Combining like terms:

2y + y + 2y/3 = 253

6y/3 + 3y/3 + 2y/3 = 253

11y/3 = 253

11y = 759

y = 759/11

y = 69

The second number is 69.

Q47. Answer: (b) Intel

The correct answer is Intel.

Key Points

• Intel is a company that manufactures hardware, particularly processors and other computer components, not an operating system.

• The other options—Mac (macOS), Windows, and Linux—are all operating systems.

• Intel was founded on July 18, 1968, by Robert Noyce and Gordon Moore in Santa Clara, California.

• Intel's full name is Integrated Electronics Corporation, though it is commonly known simply as Intel.

Additional Information

• The Macintosh (Mac) was developed and launched by Apple Inc. under the leadership of Steve Jobs in 1976.

• The first Macintosh computer was introduced on January 24, 1984, by Apple Inc.

• Windows 1.0 was released on November 20, 1985. It was not a full-fledged operating system but rather an extension of MS-DOS.

• Windows was developed by Microsoft and the co-founders of Microsoft, Bill Gates and Paul Allen in 1975.

• Linux was created by Linus Torvalds in 1991 while he was a student at the University of Helsinki in Finland.

• Linux is a free and open-source operating system, meaning anyone can view, modify, and distribute its source code.

Q48. Answer: (d) 14 cm

Given:

Internal diameter of hollow sphere = 4 cm

External diameter of hollow sphere = 8 cm

Base diameter of cone = 8 cm

Calculation:

Step 1: Volume of hollow sphere

Volume of hollow sphere = 4/3 π (R^3 - r^3)

R = 4 cm, r = 2 cm

Volume of sphere = 4/3 π (64 - 8) = 224/3 π cubic cm

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Step 2: Volume of cone

Volume of cone = 1/3 π r² h

Base radius of cone = 4 cm

Set the volumes equal: 224/3 π = 1/3 π × 16 × h

Step 3: Solve for height

224 = 16h

h = 224/16 = 14 cm

Therefore The height of the cone is 14 cm.

Q49. Answer: (a) Sentinelese

The correct answer is Sentinelese

Key Points

• The Sentinelese tribe is one of the most isolated tribes in the world, inhabiting North Sentinel Island in the Bay of Bengal.

• They have consistently rejected any contact with the outside world and are known for their hostility towards outsiders.

• The Indian government has a policy of "protection through isolation" for the Sentinelese, recognizing their right to live undisturbed.

Additional Information

• Kharwar: This tribe is primarily found in the Indian states of Jharkhand and Bihar.

• Bhil: This tribe is primarily found in the Indian states of Madhya Pradesh, Rajasthan, Gujarat, and Maharashtra.

• Gond: This tribe is primarily found in the Indian states of Madhya Pradesh, Maharashtra, Chhattisgarh, Telangana, Andhra Pradesh, and Odisha.

Q50. Answer: (c) Milk

The logic followed here is:

Logic: Significant agricultural revolutions and their related products.

Here,

Green Revolution : Agriculture → Green Revolution is a significant revolution related to Agriculture.

Similarly,

White Revolution : Milk → White Revolution is a significant revolution related to Milk.

Hence, the correct answer is "Option 3".

Q51. Answer: (d) Fruit bats

The correct answer is Fruit bats

Key Points

• The natural hosts of the Nipah virus are fruit bats of the Pteropodidae family.

• They carry the virus without showing any symptoms and can transmit it to other animals, including pigs and humans.

• While the virus can infect many animals, including pigs, goats, and other mammals, these animals are not the natural hosts.

• They become infected through contact with infected bat droppings, saliva, or urine.

Additional Information

• The other options - birds, pigs, and goats - are not the natural hosts of the Nipah virus.

• While they can become infected and transmit the virus, they are not the primary reservoir.

• Birds: Birds are not known to be susceptible to the Nipah virus.

• Pigs: Pigs can become infected with the Nipah virus, especially through contact with contaminated food or water. However, they are not the natural hosts and can only transmit the virus to other animals or humans.

• Goats: Goats can also become infected with the Nipah virus, but they are not the natural hosts. They can transmit the virus to other animals or humans.

Q52. Answer: (c) x = ((a1 + a2 + a3 + ... + a_n))/n

Given:

a1, a2, a3, …, a_n in R

Formula Used:

To find the value of x that minimizes the expression (x - a1)² + (x - a2)² + … + (x - a_n)², we use the formula:

x = (a1 + a2 + a3 + … + a_n)/n

Calculation:

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Let's minimize the given expression $(x - a1)^2 + (x - a2)^2 + \ldots + (x - a_n)^2$.

Consider the function $f(x) = (x - a1)^2 + (x - a2)^2 + \ldots + (x - a_n)^2$.

To find the minimum value, we take the derivative of f(x) with respect to x and set it to zero.

$f(x) = \sum_{i=1}^{n} (x - a_i)^2$

$\Rightarrow f'(x) = \sum_{i=1}^{n} 2(x - a_i)$

$\Rightarrow f'(x) = 2 \sum_{i=1}^{n} (x - a_i)$

Set $f'(x) = 0$:

$\Rightarrow 2 \sum_{i=1}^{n} (x - a_i) = 0$

$\Rightarrow \sum_{i=1}^{n} (x - a_i) = 0$

$\Rightarrow nx - \sum_{i=1}^{n} a_i = 0$

$\Rightarrow nx = \sum_{i=1}^{n} a_i$

$\Rightarrow x = (a1 + a2 + a3 + \ldots + a_n)/n$

The value of x that minimizes the expression is $(a1 + a2 + a3 + \ldots + a_n)/n$.

Q53. Answer: (a) 18

The logic followed here is:

Given series: 3, 8, ?, 33, 53

3 + 5 = 8;

8 + 10 = 18;

18 + 15 = 33;

33 + 20 = 53

Hence, the correct answer is "18".

Q54. Answer: (c) 288

Given:

LCM of two numbers = 24

The ratio of the two numbers = 1 : 2

Formula Used:

Product of two numbers = LCM × HCF

Calculation:

Let the two numbers be x and 2x.

LCM of x and 2x = 2x

Given LCM = 24

So, 2x = 24

$\Rightarrow x = 24 / 2$

$\Rightarrow x = 12$

Therefore, the two numbers are 12 and 24.

Product of two numbers = 12 × 24

$\Rightarrow 288$

The product of the two numbers is 288.

Q55. Answer: (c) π/20

Given:

$(1 + \tan\alpha)(1 + \tan 4\alpha) = 2$

Formula Used:

$\tan(A + B) = (\tan A + \tan B)/(1 - \tan A \cdot \tan B)$

Calculation:

We are given the equation:

$(1 + \tan \alpha)(1 + \tan 4\alpha) = 2$

Step 1: Expand the equation

$(1 + \tan \alpha)(1 + \tan 4\alpha) = 1 + \tan \alpha + \tan 4\alpha + \tan \alpha \cdot \tan 4\alpha = 2$

Simplified to:

$\tan \alpha + \tan 4\alpha + \tan \alpha \cdot \tan 4\alpha = 1$

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Step 2: Use the identity for tan (A + B)

Using the identity tan (A + B) = (tan A + tan B)/(1 - tan A · tan B),

We get: tan (5α) = 1

Step 3: Solve for α

tan 5α = 1 → 5α = 45°

α = 9° = π/20

Therefore The correct answer is option 3.

Q56. Answer: (d) Mohan Singh

The correct answer is Mohan Singh

Key Points

• Mohan Singh was not charged with waging war against the British India government.

• He founded the Indian National Army (INA) in 1942. but later fell out with Subhas Chandra Bose and was relieved of his command.

• He was not involved in the military operations of the INA.

Additional Information

• Gurbaksh Singh Dhillon:

• He was a key figure in the INA, serving as the Commander of the Nehru Brigade.

• He was actively involved in military operations against the British and was subsequently charged with waging war against the British Indian government.

• Prem Kumar Sehgal:

• As a Colonel in the INA, Prem Kumar Sehgal played a significant role in the military campaigns against the British.

• He was captured and tried for waging war against the British Indian government.

• Shah Nawaz Khan:

• A Major General in the INA, Shah Nawaz Khan was a prominent military leader who participated in battles against the British.

• Like Dhillon and Sehgal, he was charged with waging war against the British Indian government.

Q57. Answer: (d) Dr. S Unnikrishnan Nair

The correct answer is Dr S Unnikrishnan Nair

Key Points

• Dr. S. Unnikrishnan Nair is the founder and director of the Indian Space Research Organisation's (ISRO) Human Space Flight Centre (HSFC)

• The HSFC was established in 2019 to implement India's Human Space Flight Programme.

• The centre's primary role is to lead the Gaganyaan program, which aims to launch a crew of three into a 400 km orbit for a three-day mission.

• The crew will then land safely in Indian waters.

• The HSFC's responsibilities include Planning missions, Developing engineering systems for crew survival, Selecting and training crews, and Overseeing activities for sustained human space flight missions.

• The current director of the HSFC is Dinesh Kumar Singh, a Distinguished Scientist.

Additional Information

• R Hutton is the project director for the Gaganyaan project, which aims to send humans into space.

• Dr. K Sivan is the former chairman of the Indian Space Research Organisation (ISRO).

• Dr. K Kasturirangan is a renowned Indian astrophysicist and former chairman of ISRO.

Q58. Answer: (b) 7.5 km

Given:

Speed of the first man = 3 km/h.

Speed of the second man = 3.75 km/h.

The second man arrives half an hour before the first man.

Formula Used:

Time = Distance / Speed

Difference in time = 0.5 hours

Calculation:

Let the distance be d km.

Time taken by the first man = d / 3

Time taken by the second man = d / 3.75

Given that the second man arrives half an hour before the first man:

d / 3 - d / 3.75 = 0.5

Finding a common denominator (3 × 3.75):

d / 3 - d / 3.75 = 0.5

d / 3 - d / 3.75 = 0.5

d(1 / 3 - 1 / 3.75) = 0.5

d(1 / 3 - 1 / 3.75) = 0.5

d(0.25 / 3.75) = 0.5

d / 15 = 0.5

=> d = 0.5 × 15

=> d = 7.5

The distance is 7.5 km.

Q59. Answer: (a) Painter

The logic followed here is:

Logic: Relationship between an object and its user.

Here,

Canvas : Artist → Canvas is an object used by an Artist.

Similarly,

Wall : Painter → Wall is an object used by a Painter.

Hence, the correct answer is "Option 1".

Q60. Answer: (b) Maldives

The correct answer is Maldives

Key Points

• Maldives is not a member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

• The seven member countries of BIMSTEC are Bangladesh, Bhutan, India, Nepal, Sri Lanka, Myanmar, and Thailand.

• BIMSTEC is a regional organization that includes countries from the Bay of Bengal region, which is a bridge between South Asia and Southeast Asia.

• BIMSTEC is different from the South Asian Association for Regional Cooperation (SAARC), which focuses on South Asia.

• Pakistan and Afghanistan are members of SAARC but not BIMSTEC.

Q61. Answer: (a) Seventh

The correct answer is Seventh

Key Points

• The Seventh Economic Census was conducted in India in 2019

• The Seventh Economic Census (7th EC) was conducted in 2019-2020.

• Fieldwork for the census began in Tripura on July 29, 2019, and in Puducherry soon after.

• Fieldwork in other states and union territories began in August and September 2019.

• The Ministry of Statistics and Programme Implementation (MoSPI) conducted the 7th EC.

• CSC e-Governance Services India Limited was engaged to complete the fieldwork and data collection.

• The 7th EC provided an updated sampling frame for follow-up enterprise surveys.

• These surveys are used for a detailed analysis of all establishments in the country.

• The eighth Economic Census is expected to cover the period between 2025-26.

Additional Information

• The Sixth Economic Census (EC) of India was conducted in 2013–2014.

• The EC is a complete count of all establishments in the country, and is a centrally sponsored scheme by the Ministry of Statistics and Program Implementation. Here are some highlights of the Sixth EC

• The first EC was conducted in 1977, and the other previous ECs were held in 1980, 1990, 1998, and 2005

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Q62. Answer: (d) Only conclusion II follow.

Statements:

Some toffies are candies.

Some candies are chocolates.

All chocolates are lollipops.

The least possible Venn diagram:

Conclusions:

I. No lollipop is toffy. - False (Because, there is no relation given between lollipop and toffy, so it can be possible but not definite)

II. Some lollipops are candies. - True (Because, Some candies are chocolates and All chocolates are lollipops, so, Some lollipops are also candies)

So, Only conclusion II follow.

Hence, the correct answer is "Only conclusion II follow.".

Q63. Answer: (c) Meghalaya

The correct answer is Meghalaya

Key Points

• Mizoram shares its borders with Assam, Tripura, Manipur, Myanmar, and Bangladesh. Meghalaya does not share a border with Mizoram.

• Mizoram, a state in Northeast India, shares its borders with several other states and countries.

• Indian States:

• Assam: Mizoram shares a significant border with Assam, particularly in the northern part.

• Tripura: Another neighbouring state, Tripura, borders Mizoram to the northwest.

• Manipur: Mizoram also shares a border with Manipur in the northeastern part.

• Mizoram shares a long international border with Myanmar to the east and south.

• To the west, Mizoram borders Bangladesh.

• Meghalaya, another state in Northeast India, is geographically separated from Mizoram.

Q64. Answer: (b) Bihar

The correct answer is Bihar.

Key Points

• Madhubani Painting:

• It originated from the Madhubani district of Bihar.

• It is characterized by line drawings filled in by bright colours and contrasts or patterns.

• The images of various Hindu Gods and Goddesses are depicted in these type of paintings.

• Mithila painting is popularly known as Madhubani art.

Additional Information

• Some folk paintings

• Odisha: Pattachitra, Saura

• West Bengal: Kalighat Paintings, Madhubani

• Jharkhand: Madhubani, Pithora

Q65. Answer: (a) Five

The correct answer is Five

Key Points

• Five Indian states share a border with Bangladesh: Assam, West Bengal, Mizoram, Meghalaya, and Tripura.

• The total length of the border between India and Bangladesh is 4,096.70 kilometres.

• The length of the border between each state and Bangladesh is:

• West Bengal: 2,217 kilometres, the longest border

• Tripura: 856 kilometers

• Meghalaya: 443 kilometers

• Mizoram: 180 kilometers

• Assam: 262 kilometers

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Q66. Answer: (d) 1539

The correct answer is 1539

Key Points

• The Battle of Chausa was a significant military engagement that took place on June 26, 1539,

• between the Mughal Emperor Humayun and the Afghan warlord Sher Shah Suri.

• The battle, fought near Chausa in Bihar, India, resulted in a decisive victory for Sher Shah Suri.

• This defeat forced Humayun to flee to Persia, marking a significant setback for the Mughal Empire.

• Sher Shah Suri, on the other hand, established the Sur Empire, which briefly ruled over much of North India.

• His administrative reforms and military prowess had a lasting impact on the region.

Additional Information

• Humayun:

• He was the second Mughal emperor, succeeding his father, Babur.

• He suffered a significant defeat at the Battle of Chausa against Sher Shah Suri, leading to his exile.

• Despite setbacks, he eventually regained power and re-established the Mughal Empire.

• Sher Shah Suri:

• He was an Afghan ruler who established the Sur Empire in India.

• He was a skilled military leader and administrator, known for his strategic abilities.

• He introduced several administrative reforms, including the standardization of currency and the construction of a network of roads.

Q67. Answer: (b) X

The logic followed here is:

Hence, the correct answer is "X".

Q68. Answer: (a) 16800

Given:

Percentage of voters who cast their votes = 75%

Percentage of invalid votes = 2%

Votes received by the candidate = 9261

Votes received by the candidate as a percentage of total valid votes = 75%

Formula Used:

Total voters enrolled = Total votes cast / Percentage of voters who cast their votes

Total valid votes = Total votes cast × (1 - Percentage of invalid votes)

Votes received by the candidate = 75% of Total valid votes

Calculation:

Let the total number of voters enrolled be V.

Total votes cast = 0.75V

Total valid votes = 0.75V × (1 - 0.02)

Total valid votes = 0.75V × 0.98

Votes received by the candidate = 0.75 × 0.75V × 0.98

Given that the candidate received 9261 votes:

=> 0.75 × 0.75V × 0.98 = 9261

=> V = 16800

The total number of voters enrolled in that election is 16800.

Q69. Answer: (c) Mizoram

The correct answer is Mizoram

Key Points

• Bamboo dances are traditional dances that involve bamboo in some way, including:

• Cheraw

• A traditional dance from Mizoram, India, where six to eight people hold bamboo staves in pairs and clap them rhythmically.

• Female dancers step in and out of the bamboo formations while the male dancers move the bamboo.

• The Cheraw is considered one of the oldest dances in Mizoram and is often performed during festive occasions.

• Tinikling

• A traditional folk dance from the Philippines where at least two people beat, tap, and slide bamboo poles on the ground and against each other.

• Dancers step over and in between the poles.

Additional Information

• Some dances of some states

• Jharkhand: Chhau, Jhumar, Paika

• Uttarakhand: Chholiya, Chakri, Natti

• Manipur: Lai Haraoba, Manipuri Classical Dance, Thang-ta

Q70. Answer: (c) Rs. 8,111

Given:

Principal (P) = Rs. 73,000

Rate of Interest (R) = 13⅓% per annum

Time (T) = 10 months

Formula Used:

Simple Interest (SI) = (P × R × T)/100

Calculation:

Convert the rate to a fraction:

13⅓% = 40/3%

Convert the time to years:

10 months = 10/12 years = 5/6 years

Simple Interest (SI) = (73,000 × 40/3 × 5/6)/100

=> SI = (73,000 × 200/18)/100

=> SI = (73,000 × 200)/(18 × 100)

=> SI = 14,600,000/1,800

=> SI ≈ 8,111.11

The approximate simple interest is Rs. 8,111.

Q71. Answer: (c) x [figure]

The relationship between the sets of "States," "Districts," "Tehsils," and "Villages".

A state consists of multiple districts.

Each district is made up of multiple tehsils.

Each tehsil includes multiple villages.

The possible Venn diagram is as follows:

Hence, the correct answer is "Option 3".

Q72. Answer: (c) 9

The logic followed here is:

(2 × 3) ÷ 2 - 1 = 3 - 1 = 2

(3 × 4) ÷ 2 - 1 = 6 - 1 = 5

(5 × 8) ÷ 2 - 1 = 20 - 1 = 19

Similarly, (4 × 5) ÷ 2 - 1 = 10 - 1 = 9

Hence, the correct answer is "9".

Q73. Answer: (b) 30,000

Given:

Cost ratio of car and bike = 3 : 2

Cost of car is Rs.15000 more than the bike.

Formula Used:

Let the cost of the bike be 2x and the cost of the car be 3x.

Difference in cost = 3x - 2x = Rs.15000

Calculation:

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Let the cost of the bike be 2x.
Let the cost of the car be 3x.
Difference in cost = 3x - 2x
=> x = 15000
Cost of the bike = 2x = 2 × 15000
=> Cost of the bike = 30000
The correct answer is option 2.

Q74. Answer: (a) 7.5

Given:
The average marks of 45 students = 16.2
One student left, new average of 44 students = 16.5
Another student joined, new average of 45 students = 16.4
Formula Used:
Sum of the marks = Average × Number of students
Calculation:
Initial total marks of 45 students = 45 × 16.2
Initial total marks = 729
New total marks of 44 students after one student left = 44 × 16.5
New total marks = 726
Marks of the student who left = 729 - 726
=> Marks of the student who left = 3
New total marks of 45 students after another student joined = 45 × 16.4
New total marks = 738
Marks of the student who joined = 738 - 726
=> Marks of the student who joined = 12
Marks of the student who left = 3
Marks of the student who joined = 12
Their Average = (3 + 12)/2 = 15/2 = 7.5
Therefore The correct answer is option 1 (7.5).

Q75. Answer: (d) 2

Given:
We need to find the least positive integer x such that x^2 is greater than 5 times the integer by -6.
Formula Used:
$x^2 = 5x - 6$
Calculation:
Rearrange the equation:
$x^2 - 5x + 6 = 0$
Factoring the quadratic equation:
$(x - 2)(x - 3) = 0$
So, the solutions are:
x = 2 or x = 3
We need the least positive integer, so:
The least positive integer is 2.

Q76. Answer: (d) 5%

Given:
Principal (P) = Rs. 12,000
Amount (A) = Rs. 15,000
Time (T) = 5 years
Formula Used:
Simple Interest (SI) = A - P

Rate of Interest (R) = (SI × 100) / (P × T)

Calculation:

Simple Interest (SI) = Rs. 15,000 - Rs. 12,000

SI = Rs. 3,000

Rate of Interest (R) = (3,000 × 100) / (12,000 × 5)

=> R = 300,000 / 60,000

=> R = 5%

The rate of interest per annum is 5%.

Q77. Answer: (d) NTA

The correct answer is NTA

Key Points

• The National Testing Agency (NTA) is responsible for conducting the National Eligibility cum Entrance Test (NEET) for admission to undergraduate medical and dental courses in India.

• In 2020, the NTA successfully conducted the NEET examination amidst the COVID-19 pandemic, implementing strict safety protocols to ensure the health and safety of all participants.

• It was formed in November 2017 to reduce the burden on CBSE and conduct various entrance exams in a fair, transparent, and efficient manner.

Additional Information

• Medical Council of India (MCI):

• The MCI is responsible for setting standards for medical education in India.

• It regulates medical colleges and universities, ensuring adherence to quality standards.

• The MCI grants licenses to medical practitioners, ensuring they meet the necessary qualifications and ethical standards.

• The MCI establishes ethical guidelines for medical practice in India.

• It promotes ethical conduct among medical professionals and investigates complaints against them.

• University Grants Commission (UGC):

• The UGC coordinates and determines standards in higher education.

• It ensures the quality of teaching, research, and examination standards in universities and colleges.

• The UGC provides financial assistance to universities and colleges for various academic and research activities.

• It supports infrastructure development, faculty recruitment, and research projects.

• The UGC recognizes universities and colleges, granting them the authority to award degrees.

• It also accredits institutions based on their performance and adherence to quality standards.

• Central Board of Secondary Education (CBSE):

• The CBSE is responsible for developing and implementing the curriculum for secondary and senior secondary education in affiliated schools.

• It sets the standards for academic content and pedagogy.

• The CBSE conducts board examinations for Class 10 and Class 12, which are crucial for students' academic progression and higher education opportunities.

• The CBSE grants affiliation to schools, ensuring they meet the required standards in terms of infrastructure, faculty, and academic practices.

• It also provides support and guidance to affiliated schools.

Q78. Answer: (d) Micro, Small and Medium Enterprises

The correct answer is Micro, Small and Medium Enterprises

Key Points

• As of December 2020, Pratap Chandra Sarangi was serving as a Minister of State in the Ministry of Micro, Small and Medium Enterprises (MSME) and the Ministry of Animal Husbandry, Dairying and Fisheries in the central government of India.

• Pratap Chandra Sarangi is an Indian politician who has been serving as a Member of Parliament in the Lok Sabha, representing the Balasore constituency in Odisha.

• In the Narendra Modi-led government, which came to power in May 2019,

• Pratap Chandra Sarangi was appointed as Minister of State (MoS) with responsibilities in two specific ministries:

• Ministry of Micro, Small and Medium Enterprises (MSME):

• This ministry is focused on promoting and developing small businesses and enterprises in India, which are crucial to the country's economic growth and employment.

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• Ministry of Animal Husbandry, Dairying and Fisheries:

• This ministry is dedicated to improving the sectors related to livestock, dairy production, and fisheries, which play a vital role in rural livelihoods and the overall food security of India.

Additional Information

• Ministry of Textiles:

• This ministry is responsible for overseeing the textile industry in India, which includes cotton, jute, silk, wool, and synthetic fibre.

• It formulates policies and initiatives to promote the growth and modernization of the textile sector, aiming to enhance India's competitiveness in the global textile market.

• This ministry also addresses the welfare of workers in the textile industry and encourages investments in the sector.

• Ministry of Parliamentary Affairs:

• This ministry plays a key role in coordinating between the government and Parliament.

• It is responsible for the management of legislative and other business in both Houses of Parliament.

• The ministry ensures the smooth functioning of parliamentary procedures, organizes parliamentary sessions and liaises with various parliamentary committees.

• It also facilitates the passage of government bills and issues related to parliamentary privileges and practices.

• Ministry of Education:

• Known earlier as the Ministry of Human Resource Development (MHRD), this ministry is responsible for the implementation and formulation of national policies on education.

• It oversees various educational institutions, ensures quality standards in education, and works on improving access to education at all levels—primary, secondary, and higher education.

• The ministry also manages programs related to literacy, teacher training, and the promotion of educational researc

Q79. Answer: (c) Bihar

The correct answer is Bihar

Key Points

• Bihar is an Indian state that has no coastline.

• It is a landlocked state, meaning it is surrounded by other states and does not border any sea or ocean.

• It is entirely surrounded by other Indian states, namely:

• West Bengal to the east

• Jharkhand to the south

• Uttar Pradesh to the north

• Madhya Pradesh to the west

• Therefore, Bihar doesn't have access to any coastal waters.

Additional Information

• Andhra Pradesh: This state is located on the southeastern coast of India and has a long coastline along the Bay of Bengal.

• Gujarat: Situated in the western part of India, Gujarat has an extensive coastline along the Arabian Sea.

• West Bengal: Located in the eastern part of India, West Bengal has a coastline along the Bay of Bengal.

Q80. Answer: (d) South Indian Bank

The correct answer is South Indian Bank

Key Points

• South Indian Bank is a private-sector bank, which means it is not owned by the government.

• It is headquartered in Thrissur, Kerala, and operates primarily in the southern states of India.

• Unlike public sector banks, which are owned by the government, private sector banks are owned by private individuals or corporations.

• They operate independently and are not directly controlled by the government.

Additional Information

• Corporation Bank, Indian Overseas Bank, and UCO Bank are all public sector banks in India.

• This means they are owned by the Government of India.

• They are part of the Indian banking system and offer a range of banking services to individuals and businesses.

• Public sector banks are often seen as more stable and reliable due to their government backing.

• They play a crucial role in the Indian economy, particularly in areas like rural banking and financial inclusion.

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Q81. Answer: (c) 125

Given:

We need to find the least number which gives the same remainder 5, when divided by 6, 10, 15, and 24.

Formula Used:

Let the least number be N. Then,

N ≡ 5 (mod 6)

N ≡ 5 (mod 10)

N ≡ 5 (mod 15)

N ≡ 5 (mod 24)

We need to find the Least Common Multiple (LCM) of the divisors and add 5 to it.

Calculation:

LCM of 6, 10, 15, and 24:

Prime factorization of each number:

6 = 2 × 3

10 = 2 × 5

15 = 3 × 5

24 = 2^3 × 3

LCM = 2^3 × 3 × 5

LCM = 8 × 3 × 5

LCM = 120

The least number N that satisfies the given conditions:

N = LCM + Remainder

N = 120 + 5 = 125

Therefore The correct answer is 125.

Q82. Answer: (c) 0.09

Given:

(0.2 × 0.2 + 0.02 × 0.02 - 0.4 × 0.02)/0.36

Formula Used:

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

Calculation:

We are given the expression:

(0.2 × 0.2 + 0.02 × 0.02 - 0.4 × 0.02)/0.36

Use the algebraic identity $a^2 + b^2 - 2ab = (a - b)^2$

Let a = 0.2 and b = 0.02.

The expression becomes $(0.2 - 0.02)^2$.

Simplify the square

$(0.2 - 0.02)^2 = (0.18)^2$

Divide by the denominator

0.18 × 0.18/0.36 = 0.09

Therefore The value of the expression is 0.09.

Q83. Answer: (a) HQZ

The logic followed here is:

'TIGER' is written as 'VKIGT'

'LION' is written as 'NKQP'.

Similarly, 'FOX' will be written:

Hence, the correct answer is "HQZ".

Q84. Answer: (d) Kathak

The correct answer is Kathak.

Key Points

• Kathak:

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• Birju Maharaj is associated with Kathak.

• Kathak is a dance form of Uttar Pradesh.

• It is from the word 'Katha, meaning 'the art of storytelling.

• The Kathak dance form originated in north India and is very similar to the Bharatnatyam dance form.

• In ancient India, there were Kathakars who used to recite religious and mythological tales to the accompaniment of music, mime, and dance.

• Vaishnavite cult which swept North India in the 15th century and the resultant bhakti movement contributed to a whole new range of lyrics and musical forms.

• Pandit Birju Maharaj is associated with Kathak.

• He belongs to Lucknow Kalka-Bindadin Gharana of Kathak.

Q85. Answer: (b) 8/11

Given:

The denominator of a fraction is 3 more than the numerator.

If the numerator as well as the denominator are increased by 4, the fraction becomes 4/5

Calculation::

Let the numerator be x.

Then the denominator = x + 3 .According to the problem, (x + 4)/((x + 3) + 4) = 4/5

(x + 4)/((x + 3) + 4) = 4/5

Cross-multiplying, we get:

=> 5(x + 4) = 4(x + 7)

=> 5x + 20 = 4x + 28

=> 5x - 4x = 28 - 20

=> x = 8

Numerator = x = 8

Denominator = x + 3 = 8 + 3 = 11

The original fraction is 8/11.

Therefore The correct answer is option 2

Q86. Answer: (a) 382.5

Given:

Textile exports in 2004: 400 containers, Rs. 340 crore

Textile exports in 2007: 450 containers

Formula used:

Rate per container = Value / Quantity

Value in 2007 = Rate per container in 2004 × Quantity in 2007

Calculations:

Rate per container in 2004 = Rs. 340 / 400 = Rs. 0.85 crore

Value in 2007 = 450 × 0.85 = Rs. 382.5 crore

Therefore The approximate value of textile exports in 2007 is Rs. 382.5 crore.

Q87. Answer: (d) Bihar

Given:

The number of candidates from five states for an interview from 2012 to 2016.

Formula used:

Percentage Increase = (Value in 2016 - Value in 2012)/(Value in 2012) × 100

Calculations:

Bihar: (500 - 410)/410 × 100 ≈ 21.95%

U.P.: (430 - 300)/300 × 100 ≈ 43.33%

M.P.: (540 - 250)/250 × 100 = 116%

Punjab: (350 - 280)/280 × 100 = 25%

Kerala: (420 - 440)/440 × 100 = -4.55% (decrease)

Kerala has a percentage decrease.

The lowest percentage increase of candidates from 2012 to 2016 is Bihar.

Therefore The correct answer is option 4.

Q88. Answer: (d) Rs. 600 crores

Given:

Amount spent on Interest on Debt = Rs. 90 crores

Angle for Interest on Debt = 54°

Formula used:

Total expenditure = (Amount on Interest on Debt × 360)/(Angle for Interest on Debt)

Calculation:

Total expenditure = (90 × 360)/54 = 600 crores

Therefore The total amount spent on all sectors is Rs. 600 crores.

Q89. Answer: (c) Z

Given:

The production (in thousand tons) by three branches X, Y, and Z for 5 years.

Calculations:

Branch X:

Total production = 40 + 50 + 35 + 55 + 50 = 230

Average production = 230 ÷ 5 = 46 thousand tons

Branch Y:

Total production = 30 + 35 + 45 + 45 + 55 = 210

Average production = 210 ÷ 5 = 42 thousand tons

Branch Z:

Total production = 50 + 45 + 40 + 50 + 60 = 245

Average production = 245 ÷ 5 = 49 thousand tons

Therefore Branch Z had the maximum average production over the 5 years.

Q90. Answer: (d) 170

The logic followed here is:

Given series: 98, 116, 134, 152, ?

98 + 18 = 116;

116 + 18 = 134;

134 + 18 = 152;

152 + 18 = 170.

Hence, the correct answer is "170".

Q91. Answer: (a) 55 metres, South

According to the given information:

Distance between Kabir's house and flower shop = 30 + 25 = 55m

Thus, Kabir Singh's house is 55 metres, in South from the flower shop.

Hence, the correct answer is "".

Q92. Answer: (d) NRHG

The logic followed here is:

'SNOW' is written as 'HMLD'

Similarly,

'MIST' will be written:

Hence, the correct answer is "NRHG".

Q93. Answer: (c) R

The logic followed here is: Sum of place value of 1st and 3rd letter = 2nd letter.

Hence, the correct answer is 'R".

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Q94. Answer: (a) [figure]

According to the given information:

From the dice:

is opposite to

is opposite to

is opposite to

We know that Opposite surface can not be adjacent together.

Option 1)

→ Can be fold because all surface are not opposite surface to each other.

Option 2)

→ Cannot be fold because

is opposite to

.

Option 3)

→ Cannot be fold because

is opposite to

.

Option 4)

→ Cannot be fold because

is opposite to

.

Hence, the correct answer is "Option 1".

Q95. Answer: (b) Husband

Family Chart:

Given: Ramesh told Jameela, "My grandfather's only son has an only child and you are the wife of that child."

So, Ramesh is the 'husband' of Jameela.

Hence, the correct answer is "Husband".

Q96. Answer: (c) au

The logic followed here is:

Given series: pj, mg, jd, ga, dx, ?

p - 3 = m; m - 3 = j; j - 3 = g; g - 3 = d; d - 3 = a;

j - 3 = g; g - 3 = d; d - 3 = a; a - 3 = x; x - 3 = u.

Hence, the correct answer is "au".

Q97. Answer: (b) 28

The logic followed here is:

Figure 1) $8^2 - 2^2 = 64 - 4 = 60$

Figure 2) 32 - 22 = 9 - 4 = 5

Figure 3) 82 - 62 = 64 - 36 = 28.

Hence, the correct answer is "28".

Q98. Answer: (b) Father

Family Chart:

Given:

Faheema is Jitesh's sister and Faheema's mother Aziza has only one brother, Muneer.

Asma is the mother of Aziza and Suresh is the son-in-law of Asma.

So, Suresh is the 'Father' of Faheema.

Hence, the correct answer is "Father".

Q99. Answer: (b) 8

The logic followed here is: Product of left numbers = product of right numbers.

Hence, the correct answer is "8".

Q100. Answer: (d) BFWT

The logic followed here is:

Hence, the correct answer is "BFWT".

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