RRB NTPC CBT-I Official Paper (Held On: 11 Mar 2021 Shift 1) (Previous Year Paper)

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

Take this paper as a timed mock test

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

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

Q1. If mode of a series is greater than its mean by 9, then find the difference between the mode and the median.

(a) 4
(b) 6
(c) 10
(d) 8

Q2. Manvi borrowed some money on simple interest, at the rate of 6% p.a. for the first three years, at the rate of 9% p.a. for the next five years and the rate of 13% p.a. for the period beyond eight years. If the total interest paid by him at the end of eleven years is Rs.8,160, how much money did he borrow?

(a) Rs. 11,000
(b) Rs. 12,000
(c) Rs. 8,000
(d) Rs. 10,000

Q3. The ten percent law of energy transfer was given by:

(a) Charles Darwin
(b) Thomas Morgan
(c) Raymond Lindeman
(d) Watson and Crick

Q4. Out of the four words listed, three are alike in some manner and one is differrent. Select the odd one.

(a) Ground
(b) Umpire
(c) Boundary
(d) Pitch

Q5. Where is Space Application Centre situated?

(a) Ahmedabad
(b) Bengaluru
(c) Thiruvananthapuram
(d) Sriharikota

Q6. Select the number that will come next in the following series.

2, 6, 14, 26, 42, ?

(a) 54
(b) 52
(c) 62
(d) 64

Q7. Which political party was founded by Kanshi Ram?

(a) Samajwadi party
(b) Bahujan Samaj Party
(c) Janata Dal (United)
(d) Janata Dal

Q8. The square root of $(7 + 3\sqrt{5})(7 - 3\sqrt{5})$ is:

(a) 4
(b) 2
(c) $3\sqrt{5}$
(d) $\sqrt{5}$

Q9. Calculate the HCF of 2/3, 8/9, 16/81, 10/27

(a) 5/81
(b) 4/81
(c) 2/81
(d) 3/81

Q10. Select the option that is different from the rest.

(a) Hanging Gardens, Mumbai
(b) Lodhi Gardens, Delhi
(c) Brindavan Garden, Mysore
(d) Eden Garden, Kolkata

Q11. If 33 is the sum of two numbers and 13 is their difference, then find the largest number.

(a) 18
(b) 15
(c) 23
(d) 12

Q12. Select the option that is related to the third term in the same way as the second term is related to the first term.

Book : Write : : Cricket : ?

(a) Enjoy
(b) Match
(c) Play
(d) Score

Q13. Padma purchased 80 kg of tomatoes for Rs. 320 and sold them at the rate of Rs. 4.50 per kg. Find the percentage of her gain.

(a) 121/2 %
(b) 41/6 %
(c) 61/4 %
(d) 81/3 %

Q14. Who was known as the father of civil services in British India?

(a) Dalhousie
(b) Wellesley
(c) Warren Hastings
(d) Charles Cornwallis

Q15. Which of the following is the excretory organ of cockroaches and other insects?

(a) Malpighian tubules
(b) Nephridia
(c) Antennary glands
(d) Trachea

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Q16. Which Bengali newspaper was founded and edited by Raja Rammohan Roy?

(a) Kesari
(b) Sambad Kaumudi
(c) Yugantar
(d) Maratha

Q17. Ravi and Rajesh wrote an entrance examination to join the M.Tech. programme. Ravi obtained 8 marks more than Rajesh and his marks were 52% of the sum of their marks. What are marks obtained by Ravi and Rajesh respectively.

(a) 100, 92
(b) 104, 96
(c) 108, 100
(d) 90, 98

Q18. In a code language, PLANT is written as RNCPV, and HERB is written as JGTD. How will FLOWER be written in that code language?

(a) EKNVGT
(b) DJMUGT
(c) GMPZGT
(d) HNQYGT

Q19. Read the given statement and courses of action carefully and decide which of the courses of action logically follow(s) from the statement.

Statement:

If Ritu studies effectively for 6 h daily from today, she will be able to pass the exam which is due after 10 days.

Courses of Action:

(i) Ritu must effectively study science for 6 h daily for 10 days to be able to prepare enough to pass her exam.

(ii) Ritu must plan her time ahead of preparation and give sufficient time to every subject.

(iii) Ritu must not play during these 10 days which are crucial for her for preparation for exams.

(a) All the action (i), (ii) and (iii) follow.
(b) Only action (ii) follows.
(c) Only action (i) and (ii) follow.
(d) Only action (ii) and (iii) follow.

Q20. The ages of A and B are in the ratio 3 : 1. Fifteen years hence, the ratio will be 2 :1. Their present ages are respectively:

(a) 45 years, 15 years
(b) 21 years, 7 years
(c) 60 years, 20 years
(d) 30 years, 10 years

Q21. Which one of the following channel separates Andaman and Nicobar Islands?

(a) Ten Degrees Channel
(b) Eight Degree Channel
(c) Nine Degree Channel
(d) Hindenberg Channel

Q22. tan 100^?+ tan 125^?+ tan 100^?tan 125^?is equal to :

(a) 1/2
(b) 0
(c) -1
(d) 1

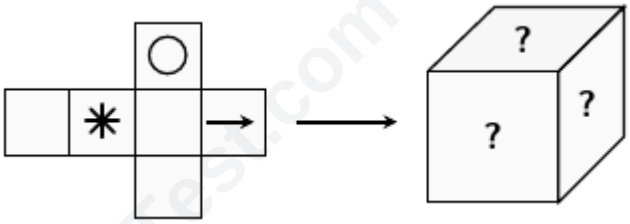
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Q23. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

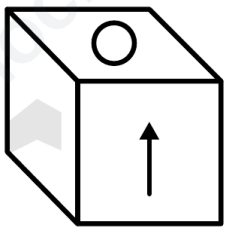


(a) 4
(b) 8
(c) 9
(d) 5

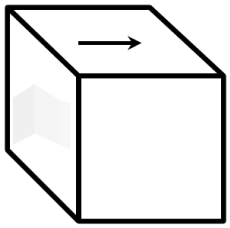
Q24. The following paper cutting is folded along the lines to make a cubical box. Select the correct image of the resulting box from among the options.



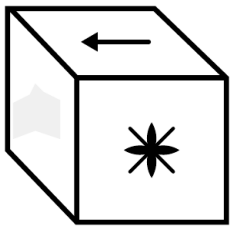
(a)



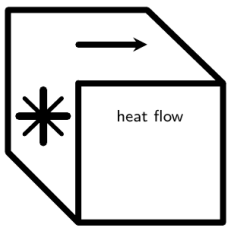
(b)



(c)



(d)



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Q25. Solve the given equation.

sin 21^?cos 9^? - cos 84^?cos 6^?= ?

(a) 1/8
(b) 1/4
(c) 1
(d) 1/2

Q26. Which place is linked by National Highway 1(old numbering)?

(a) Delhi-Chennai
(b) Delhi-Kolkata
(c) Delhi-Mumbai
(d) Delhi-Atari

Q27. In Financial field, FCCB stands for:

(a) Foreign Currency Commercial Bond
(b) Foreign Currency Convertible Bond
(c) Foreign Currency Corporate Bonds
(d) Foreign Currency Convertible Banks

Q28. The positive value of √(6 + √(6 + √(6 +))) -------- is:

(a) 2
(b) 3.5
(c) 4
(d) 3

Q29. A solid frustum of a cone is of height 8 cm. If the radii of its lower and upper ends are 3 cm and 9 cm respectively, then is slant height is:

(a) 9 cm
(b) 15 cm
(c) 10 cm
(d) 12 cm

Q30. Mahesh invested an amount of Rs. 8000 in a fixed deposit for 2 years at compound interest 5 p.c.p.a. how much amount will Mahesh get on maturity of the fixed deposit?

(a) Rs. 8800
(b) Rs. 8820
(c) Rs. 8900
(d) Rs. 8720

Q31. The value of (35.7 - (3 + 1/(3 + 1/3)) - (2 + 1/(2 + 1/2))) is:

(a) 30
(b) 34.8
(c) 41.4
(d) 36.6

Q32. Depending upon carbon and moisture content which is the highest and lowest quality of coal respectively?

(a) Bauxite, lignite
(b) Anthracite, lignite
(c) Lignite, bauxite
(d) Lignite, anthracite

Q33. Which of the following options is the fifth to the right of 20^(th) letter from the left in English alphabet?

(a) Z
(b) E
(c) V

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(d) Y

Q34. Which committee is constituted by the Government if population of a particular area exceeds 3 lakh?

(a) Nagar Committee
(b) Metropolitan Committee
(c) Ward Committee
(d) District Planning committee

Q35. How many banks were nationalised by the Union Government of India in the year 1980?

(a) Three
(b) Nine
(c) Ten
(d) Six

Q36. Which of the following solutions has the highest concentration of hydrogen ions?

(a) pH = 5
(b) pH = 10
(c) pH = 8
(d) pH = 4

Q37. A bus and a car start from points x and y respectively and travel towards each other at the speed of 60 km/h and 50 km/h respectively. By the time they meet, the bus has travelled 50 km more than the car. What is the distance between x and y?

(a) 500 km
(b) 600 km
(c) 550 km
(d) 450 km

Q38. If $\operatorname{cosec}\theta - \cot\theta = a$, then the value of $\operatorname{cosec}\theta$ is:

(a) $(a + 1/a)$
(b) $1/2(a + 1/a)$
(c) $1/2(a - 1/a)$
(d) $1/4(a - 1/a)$

Q39. Tomb of Sher Shah Suri is situated in _____.

(a) Sasaram
(b) Fatehpur Sikri
(c) Delhi
(d) Agra

Q40. What is the lowest frequency of sound that can be heard by human beings?

(a) 10 Hz
(b) 500 Hz
(c) 50 Hz
(d) 20 Hz

Q41. How many megabytes are equal to 1 gigabyte?

(a) 1048
(b) 1052
(c) 1042
(d) 1024

Q42. Ethanol is formed during:

(a) anaerobic respiration in yeasts
(b) aerobic respiration in yeasts
(c) aerobic respiration in muscles

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(d) anaerobic respiration in muscles

Q43. In the difference between a number and its two-fifth is 60, then the number is:

(a) 125
(b) 75
(c) 105
(d) 100

Q44. Name India's oldest nuclear reactor which was recommissioned in 2018.

(a) Bhaskar
(b) Dhanush
(c) Dhruva
(d) Apsara

Q45. Which of the following is an eco-friendly practice?

(a) Use of chemical fertilizers to increase crop productivity
(b) Disposing waste plastics by dumping in pits under soil
(c) Disposal of biodegradable wastes in ponds
(d) Disposing dry leaves in pits under soil

Q46. Which of the following is known as golden fiber?

(a) Mustard
(b) Sandalwood
(c) Wheat
(d) Jute

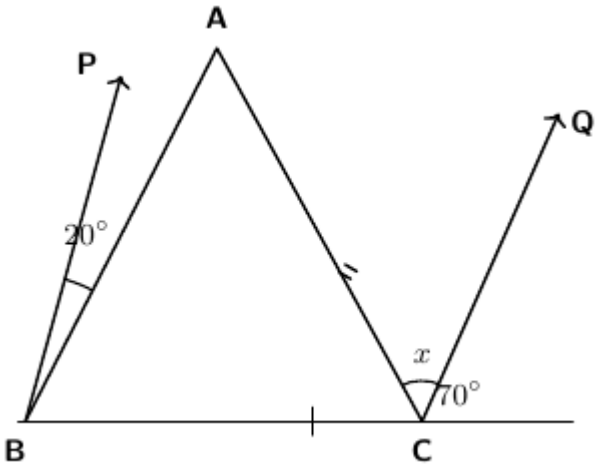
Q47. Swapna travels by car equal distances with the speeds of 10 km/h, 15 km/h and 20 km/h and takes a total of 65 min. The total distance travelled by her (in km) is:

(a) 12
(b) 20
(c) 15
(d) 10

Q48. Which of the following date is observed as World Clean Up Day?

(a) September 15
(b) March 14
(c) May 15
(d) September 14

Q49. In given figure, if BP II CQ and AC = BC, then the measure of x is



(a) 30^?

(b) 35^?
(c) 20^?
(d) 25^?

Q50. Ramu purchased a TV set with an additional 15% discount on the reduced price after deducting 25% discount on the labeled price. If the labeled price was Rs. 12,000, at what price did he purchase the TV set?
(a) Rs. 7,650
(b) Rs. 7,560
(c) Rs. 7,600
(d) Rs. 7,000

Q51. Who started the first newspaper in India?
(a) Derk Sauer
(b) John Campbell
(c) Edward Mallet
(d) James A Hickey

Q52. Find the value of $((0.2)^3 + (0.04)^3)/((0.1)^2 \times 0.1 + (0.02) \times (0.02)^2)$
(a) 8
(b) 9
(c) 6
(d) 7

Q53. Who among the following Spiritual leader has been awarded the "Padma Bhusan" in 2021?
(a) Gulfam Ahmad
(b) Ghulam Rasool Khan
(c) Kalbe Sadiq
(d) Maulana Wahiduddin Khan

Q54. Which country had topped the "World Happiness Index" report in the year 2020?
(a) Thailand
(b) Norway
(c) Switzerland
(d) Finland

Q55. Calculate the LCM of 22, 34 and 40.
(a) 7480
(b) 7840
(c) 7260
(d) 7420

Q56. Which one of the following country was the largest producer of Wine in year 2019?
(a) United Kingdom
(b) Italy
(c) Spain
(d) Switzerland

Q57. Which among the following is an amphoteric oxide?
(a) Sulphur dioxide
(b) Magnesium oxide
(c) Phosphorus pentoxide
(d) Zinc oxide

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Q58. A network of computers and other devices that are confined to a relatively small space is called:

(a) Global Network
(b) Peer-to-Peer Network
(c) Local Area Network
(d) Wide Area Network

Q59. Kalbelia folk songs and dances belong to which Indian state?

(a) Madhya Pradesh
(b) Rajasthan
(c) Himachal Pradesh
(d) Maharashtra

Q60. The value of ((3.6 × 0.48 × 2.50))/((0.12 × 0.09 × 0.5)) is:

(a) 80000
(b) 800
(c) 80
(d) 8000

Q61. Rakesh has coins in the denominations of only Rs. 2 and Rs. 5 with him. If the total number of coins that he has is 60 and the amount of money with him is Rs. 240, then find the number of Rs. 2 and Rs. 5 coins respectively.

(a) 10 and 50
(b) 25 and 35
(c) 15 and 45
(d) 20 and 40

Q62. Select the option that CANNOT be concluded from the given statements.

Statement 1: Some keys are boats.

Statement 2: Some boats are pipes.

Statement 3: All pipes are fish.

(a) Some fish are keys.
(b) Some fish are boats.
(c) Some pipes are boats.
(d) Some boats are keys.

Q63. Find the least number which is required to be added to 2495 so that the sum is exactly divisible by 3, 4, 5 and 6.

(a) 25
(b) 13
(c) 33
(d) 23

Q64. Which of the following bank launched 'YONO Cash Point', a cardless ATM service?

(a) Citi Bank
(b) UBS
(c) SBI
(d) HDFC

Q65. What is the full form of "NDC" a government agency?

(a) National Defence Council
(b) National Development Council
(c) National Development Centre
(d) National District Council

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Q66. Tony should get 40% of the total marks to pass. He obtained 120 marks and failed by 30 marks. What are the total marks?

(a) 400
(b) 500
(c) 375
(d) 300

Q67. The largest sphere is cut off from a solid cube of side 6 cm. The volume of the sphere will be:

(a) 36π cm^3
(b) 108π cm3
(c) 12π cm3
(d) 27π cm3

Q68. Where is the headquarters of the International Civil aviation Organisation (ICAO) situated?

(a) Montreal
(b) Madrid
(c) Ottawa
(d) Lisbon

Q69. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statement:

Increasing use of non-biodegradable plastic will pose a grave threat to plant and animal life in the long run.

Conclusions:

1. If non-biodegradable plastic is banned, humanity will not face extinction.
2. Humanity will not be impacted by extensive use of plastic.

(a) 1 and 2 follow.
(b) Neither 1 nor 2 follows.
(c) 1 follows but 2 does not follow.
(d) 2 follows but 1 does not follow.

Q70. Who among the following designed 7, Lok Kalyan Marg?

(a) Sir Edwin Lutyens
(b) Le Corbusier
(c) HK Mewada
(d) Francois Martin

Q71. Manvi and Darshan together can complete a project work in 40 days. They worked together for 25 days and then Darshan left. After another 24 days, Manvi completed the remaining project work. In how many days can Manvi alone complete the project?

(a) 50
(b) 64
(c) 40
(d) 54

Q72. Which of the following is INCORRECT in respect of geostationary satellite?

(a) Rotate with speed and direction of earth
(b) Orbits are used for IRS satellite
(c) Many of these satellite orbits are also sun-synchronous
(d) Altitude should be Approximately 36000 km

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Q73. Which fort is built on the bank of Chenab river?

(a) Hari Parbat fort
(b) Chiktan fort
(c) Akhnoor fort
(d) Bahu fort

Q74. Select the option that is related to the third term in the same way as the second term is related to the first term.

Predict : Future : : Recall : ?

(a) Forget
(b) Memory
(c) Dream
(d) Past

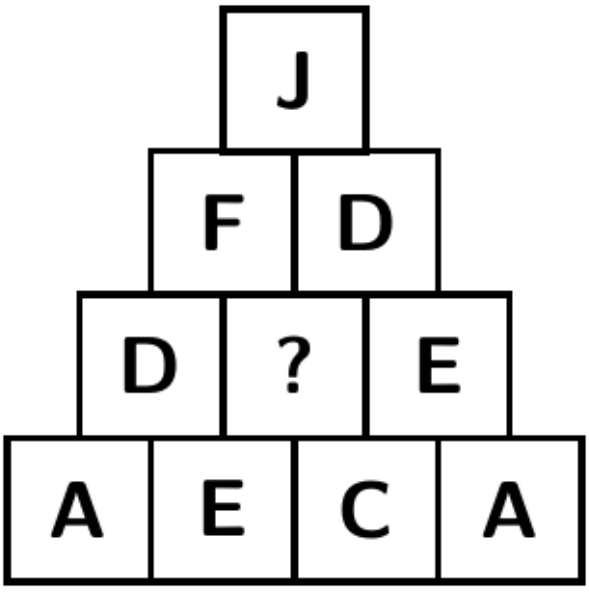
Q75. Out of the four letter-pairs listed, three are alike in some manner and one is different. Select the odd one.

(a) Yb
(b) Jh
(c) Pk
(d) Tg

Q76. Solve the given equation. $(3 + \sqrt{6})/(5\sqrt{3} - 2\sqrt{12} - \sqrt{32} + \sqrt{50}) = ?$

(a) 6
(b) 3
(c) $3\sqrt{2}$
(d) $\sqrt{3}$

Q77. Study the given pattern carefully and select the letter that can replace the question mark (?) in it.



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

Q78. What is the shortcut key to open 'Paste Special' dialogue box in Microsoft Word?

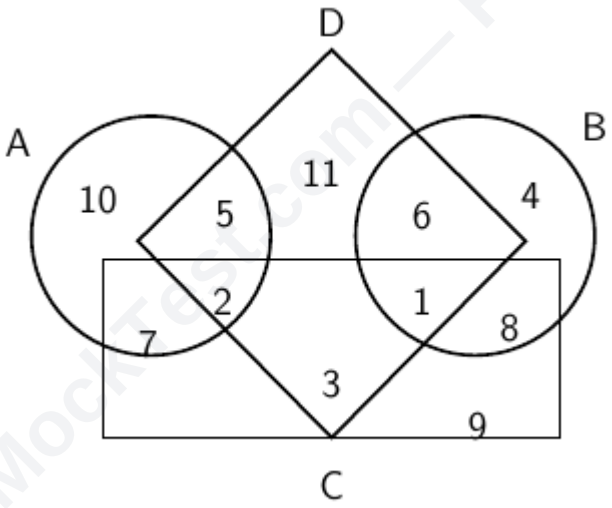
(a) Ctrl + Alt + P
(b) Ctrl + V
(c) Ctrl+Alt+ V
(d) Ctrl + Alt + C

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Q79. Which company became 2^(nd)Indian firm to cross Rs. 6 lakh crore market value in 2018?

(a) HDFC Bank
(b) Reliance Industries
(c) Wipro Limited
(d) TCS

Q80. The following figure is a combination of 4 figures, A, B, C and D. Figure A and B represent students who are enrolled in science club and debate club respectively. Figure C and D represent students who have joined drama club and sports club respectively. The numbers inside the figures represent the number of students in that particular region. How many students have joined more than two clubs?



(a) 6
(b) 2
(c) 4
(d) 3

Q81. The famous Buddhist structure, Dhamekh Stupa was originally constructed during _____ dynasty.

(a) Shunga
(b) Kanva
(c) Mauryan
(d) Nanda

Q82. The diagonals of a quadrilateral ABCD bisect each other. In this quadrilateral, if angle A = 45^?then angle B = ?

(a) 125^?
(b) 120^?
(c) 115^?
(d) 135^?

Q83. In which of the following continents Mount Vinson is located?

(a) Australia
(b) Asia
(c) Antarctica
(d) South America

Q84. Which state launched 7-Star Gram Panchayat Rainbow Scheme?

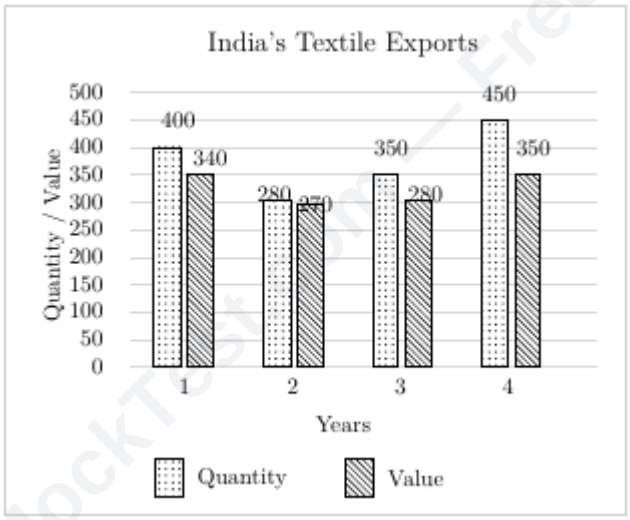
(a) Gujarat
(b) Haryana
(c) Punjab
(d) Himachal Pradesh

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Q85. Where was the world's first TV channel dedicated to human rights launched?

(a) UK
(b) Germany
(c) France
(d) Russia

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



In which year was the value per container the minimum?

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

Q87. Study the given table carefully and answer the question that follows.

Years	States				
Bihar	UP	MP	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

Number of candidates appeared in the interview for the post of PO in a bank from five different states of India. The number of candidates who appeared in 2015 from MP is approximately what percentage of the total number of candidates appeared from MP for all the years taken together?

(a) 12%
(b) 42%
(c) 23%
(d) 15%

Q88. Study the given table carefully and answer the question that follows.

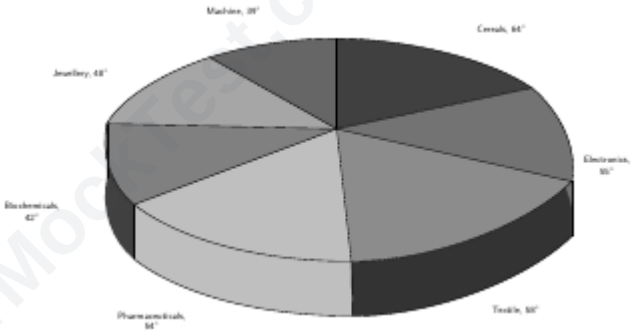
States	Production of Rice (in Hundred tonnes)	
Years		

2016	2017	
Bihar	250	230
UP	220	225
Kerela	180	200
Kashmir	210	220

What is the ratio of the production of rice in Bihar in 2016 to the production of rice in UP in 2017?

(a) 3 : 5
(b) 1 : 2
(c) 14 : 17
(d) 10 : 9

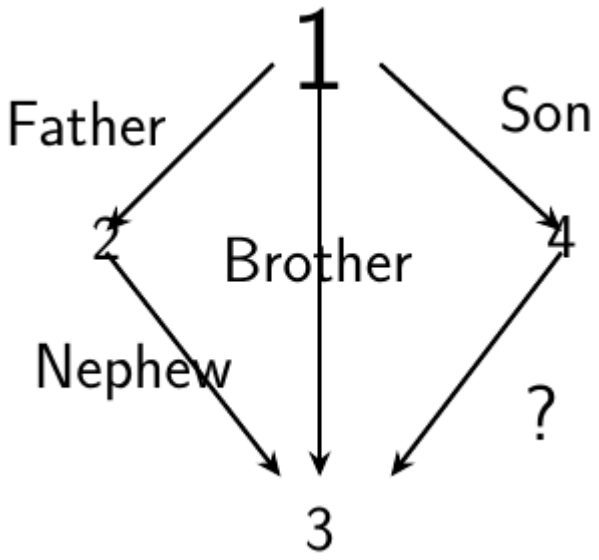
Q89. Study the following circle graph carefully that shows the spending of a country on various products imported from neighbouring country during a particular year and answer the question that follows.



If the amount spent on importing textiles and cereals during the year was Rs. 2 crore, then what was the total amount (approximately) spent on importing all the various products by the country in that year?

(a) Rs. 4.25 crore
(b) Rs. 6.5 crore
(c) Rs. 3 crore
(d) Rs. 5.9 crore

Q90. In the following relationship chart, A→B means A is the mother (or any other relationship) of B. Now using the chart, select the option that can replace the question mark (?) in it, if all the mentioned individuals, 1, 2, 3 and 4 are males.



(a) Son
(b) Uncle
(c) Grandfather

(d) Father

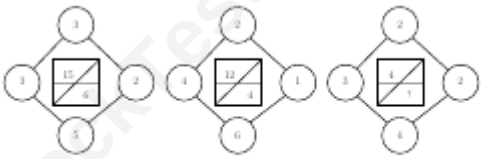
Q91. 5 students, A, B, C, D and E are standing in a queue during school assembly. C is standing behind D. E is not standing behind B. A is standing ahead of C but not ahead of B. If behind means 'being exactly next to someone's back' and ahead does not mean 'exactly in front of', who among the 5 students is standing at the third position?

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

Q92. I am the only daughter of X, and Y is my husband Z's sister's only daughter. If D is the maternal grandfather of Y, how am I related to D?

(a) Sister-in-law
(b) Paternal Aunt
(c) Husband's sister's daughter
(d) Daughter-in-law

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

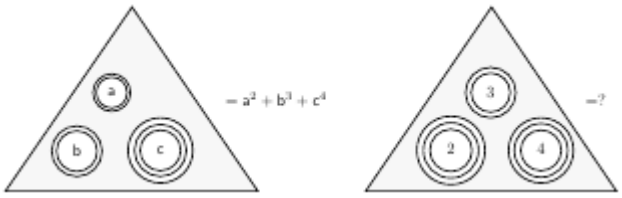


(a) 7
(b) 15
(c) 11
(d) 12

Q94. If different combinations are formed using the letters B, A, R, E and arranged in the order in which they would appear in an English dictionary, the combination 'BARE' will be at the _____ position.

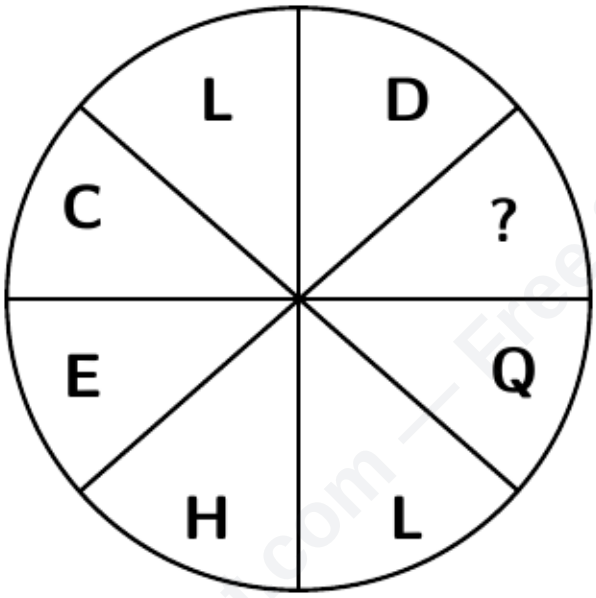
(a) 6^(th)
(b) 7^(th)
(c) 10^(th)
(d) 8^(th)

Q95. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 8
(b) 315
(c) 137
(d) 200

Q96. Study the given pattern carefully and select the letter that can replace the question mark (?) in it.

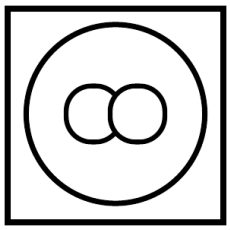


(a) U
(b) X
(c) W
(d) A

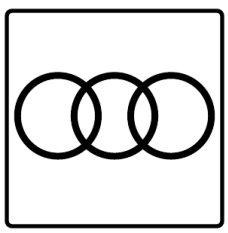
Q97. If in a code language, LIVE is written as OREV, then how will PRAY be written in that code language?
(a) RSBZ
(b) QSBN
(c) LIZB
(d) KIZB

Q98. Select the number that will come next in the following series.
3, 7, 16, 35, ?
(a) 57
(b) 64
(c) 73
(d) 74

Q99. Select the Venn diagram that best represents the relationship between the given set of classes.
Females, Wife, Mothers
(a)

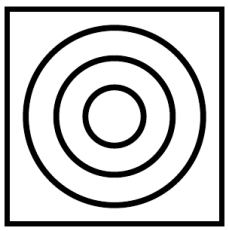


(b)

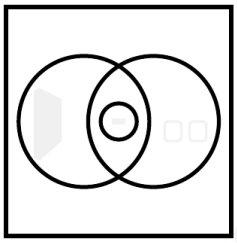


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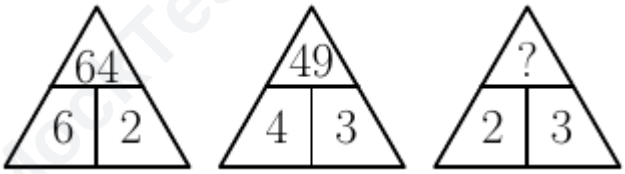
(c)



(d)



Q100. Study the given pattern carefully and select the number that can replace the question mark (?) in it.



(a) 25
(b) 5
(c) 23
(d) 6

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (b) 6

Given:

If mode of a series is greater than its mean by 9, then find the difference between the mode and the median.

Formula used:

Mode = 3(Median) - 2(Mean)

Calculation:

Let Mode = M_o, Median = M_e, and Mean = x

Given M_o = x + 9
Using the formula:
M_o = 3(M_e) - 2(x)
Substitute M_o and solve for M_e:
=> x + 9 = 3(M_e) - 2(x)
=> x + 9 + 2x = 3(M_e)
=> 3x + 9 = 3(M_e)
=> x + 3 = M_e
Now, find the difference between Mode and Median:
=> M_o - M_e = (x + 9) - (x + 3)
=> M_o - M_e = x + 9 - x - 3
=> M_o - M_e = 6
Therefore The correct answer is option 2.

Q2. Answer: (c) Rs. 8,000

Given:
Rate for first 3 years (R1) = 6% p.a.
Rate for next 5 years (R2) = 9% p.a.
Rate for period beyond 8 years (R3) = 13% p.a.
Total time = 11 years
Total interest (I) = Rs. 8,160
Formula used:
Simple Interest (SI) = (P × R × T)/100
Calculation:
Interest for first 3 years:
I1 = (P × 6 × 3)/100
=> I1 = 18P/100
=> I1 = 0.18P
Interest for next 5 years:
I2 = (P × 9 × 5)/100
=> I2 = 45P/100
=> I2 = 0.45P
Interest for last 3 years:
I3 = (P × 13 × 3)/100
=> I3 = 39P/100
=> I3 = 0.39P
Total interest:
I = I1 + I2 + I3
8,160 = 0.18P + 0.45P + 0.39P
8,160 = 1.02P
=> P = (8,160)/1.02
=> P = 8,000
Therefore The correct answer is option 3.

Q3. Answer: (c) Raymond Lindeman

The correct answer is Raymond Lindeman
Key Points
• The energy in an ecosystem flows from the Producer → Herbivore/Primary Consumer → Carnivore/Secondary consumer
• At each successive trophic level, there is only a 10% transfer of energy from lower to higher trophic levels.
• This is called the 10 percent law.
• The 10 percent law was given by Lindemann.
• The amount of energy available decreases as the food chain goes to higher levels.

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• Herbivores only consume 10% of all the energy captured by the producers.
• Carnivore consumes only 10% of energy captured by the herbivore.
• Of the total energy available at one trophic level, most of it is lost in metabolism or heat.
• The lost energy is 90% of all the energy consumed and only 10% is transferred to the next trophic level.
• This loss of energy limits the length of the chain or the number of trophic levels.

Q4. Answer: (b) Umpire

The logic followed here is:

Ground	Cricket Field Element
Umpire	Cricket Official
Boundary	Cricket Field Element
Pitch	Cricket Field Element

Ground, Boundary, Pitch all are elements of a Cricket Field,

Whereas,

Umpire is an official in the game of cricket.

Hence, the correct answer is "Umpire".

Q5. Answer: (a) Ahmedabad

The correct answer is Ahmedabad.

Key Points

• Space Application Center, SAC located in Ahmedabad, Gujarat, India.
• The Space Applications Centre is an institution of research in Ahmedabad under the aegis of the Indian Space Research Organisation.
• Indian Space Research Organization is founded by Dr.Vikram Sarabhai.
• Indians Space Research Organization's current chairman is Dr.K Sivan.
• Space Applications Centre (SAC) is one of the major centers of the Indian Space Research Organisation (ISRO).
• SAC focuses on the design of space-borne instruments for ISRO missions and the development and operationalization of applications of space technology for societal benefits.

Additional Information

• The Indian Space Research Organisation or is the national space agency of the Republic of India, headquartered in Bengaluru.
• It operates under Department of Space which is directly overseen by the prime minister of India while chairman of ISRO acts as executive of DOS as well.

Important Points

• Top 5 Spacer agencies in the world are:
• National Aeronautics and Space Administration (NASA).
• China National Space Administration (CNSA).
• European Space Agency (ESA).
• Russian Federal Space Agency (Roscosmos).
• Indian Space Research Organisation (ISRO).

Q6. Answer: (c) 62

The logic followed here is:

Hence, "Option 3" is the correct answer.

Q7. Answer: (b) Bahujan Samaj Party

The correct answer is Bahujan Samaj Party

Key Points

• Kanshi Ram was the founder of the Bahujan Samaj Party(BSP) political party.
• BSP was founded in 1984.
• It is symbolic to the 'Majority of People' and represents the oppressed sections of the society such as the Scheduled Castes, the Scheduled Tribes, Other Backward Classes as well as religious minorities.
• In 1993, Kanshi Ram was succeeded by Mayawati as President of the BSP.

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Additional Information

• Samajwadi Party:

• The Samajwadi Party was founded by Mulayam Singh Yadav in 1992.

• It is a socialist party that has a strong base in Uttar Pradesh and is known for its advocacy for the rights of the lower castes and minorities.

• Janata Dal (United):

• The Janata Dal (United) was formed in 2003 by the merger of the Janata Dal and Lok Shakti Party.

• Its founder is Nitish Kumar, who has been the Chief Minister of Bihar multiple times.

• It is a regional party with a significant presence in Bihar and is known for its emphasis on development and good governance.

Q8. Answer: (b) 2

Given:

The expression to find the square root of: (7 + 3√{5})(7 - 3√{5}).

Formula Used:

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

Calculation:

Let a = 7 and b = 3√{5}.

Using the formula:

$(7 + 3\sqrt{5})(7 - 3\sqrt{5}) = 7^2 - (3\sqrt{5})^2$

=> 49 - 9 × 5

=> 49 - 45

=> 4

Taking the square root:

√4 = 2

The correct answer is option 2.

Q9. Answer: (c) 2/81

Given:

Calculate the HCF of 2/3, 8/9, 16/81, 10/27

Formula Used:

HCF of fractions = (HCF of numerators)/(LCM of denominators)

Calculation:

Numerators: 2, 8, 16, 10

Denominators: 3, 9, 81, 27

Finding HCF of numerators:

HCF(2, 8, 16, 10)

Prime factors:

$2 = 2^1$

$8 = 2^3$

16 = 2^4

10 = 2 × 5

Common factor with the lowest power: 2^1

HCF = 2

Finding LCM of denominators:

LCM(3, 9, 81, 27)

Prime factors:

$3 = 3^1$

$9 = 3^2$

81 = 3^4

$27 = 3^3$

LCM = 3^4 = 81

Thus, HCF of the fractions:

HCF = 2/81

The correct answer is option 3.

Q10. Answer: (d) Eden Garden, Kolkata

The logic followed here is:

Hanging Gardens, Mumbai	Garden
Lodhi Gardens, Delhi	Garden
Brindavan Garden, Mysore	Garden
Eden Garden, Kolkata	Cricket stadium

Hanging Gardens, Mumbai, Lodhi Gardens, Delhi, Brindavan Garden, Mysore all are Gardens,

Whereas,

Eden Garden, Kolkata is a Cricket stadium.

Hence, the correct answer is "Eden Garden, Kolkata".

Q11. Answer: (c) 23

Given:

Sum of two numbers = 33

Difference of two numbers = 13

Formula used:

Let the two numbers be x and y.

x + y = 33

x - y = 13

Calculation:

Adding the two equations:

x + y + x - y = 33 + 13

=> 2x = 46

=> x = 46 ÷ 2

=> x = 23

Therefore, the largest number is 23. The correct answer is option 3.

Q12. Answer: (c) Play

The logic followed here is:

Logic: Activity related to the given object.

Here,

Book : Write → Write is an activity related to using a Book.

Similarly,

Cricket : Play → Play is an activity related to playing Cricket.

Hence, the correct answer is "Option 3".

Q13. Answer: (a) 121/2 %

Given:

Quantity of tomatoes purchased (Q) = 80 kg

Cost Price (CP) = Rs. 320

Selling Price per kg (SP per kg) = Rs. 4.50

Formula used:

1. Total Selling Price (SP) = SP per kg × Q

2. Gain = SP - CP

3. Percentage Gain = (Gain / CP) × 100

Calculations:

1. Total Selling Price (SP) = 4.50 × 80

=> SP = Rs. 360

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2. Gain = SP - CP

=> Gain = 360 - 320

=> Gain = Rs. 40

3. Percentage Gain = (Gain / CP) × 100

=> Percentage Gain = (40 / 320) × 100

=> Percentage Gain = 12.5%

Therefore The correct answer is option 1.

Q14. Answer: (d) Charles Cornwallis

The correct answer is Charles Cornwallis

Key Points

• Charles Cornwallis is known as the "Father of Civil Services in India" because he reformed and modernized the civil service during the British Raj.

• Warren Hastings is credited with laying the foundation for the civil service

• Cornwallis's contributions to the civil service:

• Divisions: He introduced two divisions of the civil service:

• Covenanted: Only Europeans held higher government positions

• Uncovenanted: Indians could enter the lower levels of administration

• Modernization: He modernized and rationalized the civil service

• The current civil services of India are based on the pattern of the former Indian Civil Service of British India

Additional Information

• Warren Hastings (1773-1785)

• He was the first Governor-General of India.

• He is known for establishing the Dual System, which divided the administration of Bengal between the Company and the Nawab.

• He also introduced judicial reforms by establishing the Supreme Court at Calcutta.

• Lord Wellesley (1798-1805)

• He was a Governor-General with an aggressive expansionist policy.

• He introduced the Subsidiary Alliance System, which required Indian rulers to accept British protection in exchange for military support.

• This led to the annexation of several Indian states and the Third Anglo-Maratha War.

• Lord Dalhousie (1848-1856)

• He was another Governor-General who expanded British territory in India.

• He introduced the Doctrine of Lapse, which allowed the British to annex Indian states if their rulers died without a natural heir.

• He also initiated the construction of railways and telegraph lines, which improved communication and transportation but also contributed to the unification of India under British rule.

Q15. Answer: (a) Malpighian tubules

The correct answer is Malpighian tubules

Key Points

• The excretory organ of cockroaches and other insects is the Malpighian tubule

• Malpighian tubules are unbranched tubules that float freely in the haemocoel and open into the alimentary canal.

• Malpighian tubules absorb nitrogenous waste products from the haemolymph and convert them into uric acid.

• They also function as osmoregulatory organs

Additional Information

• Excretion

• It is the process of removal of nitrogenous wastes from the body of an organism.

• Excretion is performed by a specialized group of cells or organs called excretory organs.

• Different organisms have different types of excretory organs

• Eg. Flatworms – Protonephridia & flame cells, Earthworms – Nephridia, Insects – Malpighian tubules, Crustaceans – green glands, All chordates - Kidneys

Important Points

• Different organisms use different types of organs to remove excreta

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Organisms	Excretory Organs
Unicellular Animals / Amoeba	Surface of the body
Platyhelminthes/ Flatworms	Flame cells
Roundworms/Earthworms	Nephridia
Arthropods/ Cockroaches	Malpighian tubules
Crustaceans / Prawns	Antennal glands / Green Glands
Vertebrates	Kidney

Q16. Answer: (b) Sambad Kaumudi

The correct answer is Sambad kaunmudi

Key Points

• Raja Rammohan Roy was one of the founders of the Brahmo Sabha, the precursor of the Brahmo Samaj, which was a social-religious reform movement in the Indian subcontinent.

• He had started two newspapers- one in Bangali, which was known as the Sambad kumudi, and another in Persian, which was called the Mirat-ul-Akbar.

• Given below refers to a brief description of the two newspapers:

• Sambad Kumudi:

• It referred to a Bengali weekly newspaper that was published in Kolkata during the first half of the 19th century by Ram Mohan Roy.

• It mentioned a noted pro-reformist publication that had actively campaigned for the abolition (stop) of the Sati Pratha.

• Mirat-ul-Akhbar (Mirror of News):

• It referred to a Persian language journal rant that was founded as well as edited by Raja Rammohan Roy

Additional Information

• Marathi

• It is the newspaper that was started by Bal Gangadhar Tilak in 1881.

• Kesari

• It was written by Lokmanya Tilak during the Indian National Movement

• The newspaper was initially founded in 1881

• The Kesari newspaper was originally started as a co-operative effort by Agarkar (the paper's first editor), Chiplunkar, and Tilak, and was published along with Tilak's English newspaper, the Mahratta, to encourage people to rise against the oppressive regime of the time, instead of being submissive.

Q17. Answer: (b) 104, 96

Given:

Ravi obtained 8 marks more than Rajesh and his marks were 52% of the sum of their marks.

Formula Used:

Let the marks obtained by Rajesh be x and the marks obtained by Ravi be x + 8.

Ravi's marks = 52% of (Ravi's marks + Rajesh's marks)

$x + 8 = 0.52 \times (x + (x + 8))$

Calculation:

We start by solving the equation:

Ravi's marks = 52% of the sum of their marks

$\Rightarrow x + 8 = 0.52 \times (2x + 8)$

$\Rightarrow x + 8 = 1.04x + 4.16$

$\Rightarrow x - 1.04x = 4.16 - 8$

$\Rightarrow -0.04x = -3.84$

$\Rightarrow x = (-3.84)/(-0.04)$

$\Rightarrow x = 96$

Marks obtained by Rajesh = x = 96

Marks obtained by Ravi = x + 8 = 96 + 8 = 104

The marks obtained by Ravi and Rajesh respectively are 104 and 96.

The correct answer is option 2.

Q18. Answer: (d) HNQYGT

The logic followed here is:

PLANT is written as RNCPV

And,

HERB is written as JGTD

Similarly,

FLOWER will be written as

Hence, "Option 4" is the correct answer.

Q19. Answer: (b) Only action (ii) follows.

Given:

Statement: If Ritu studies effectively for 6 h daily from today, she will be able to pass the exam which is due after 10 days.

Course of Action:

I. Ritu must effectively study science for 6 h daily for 10 days to be able to prepare enough to pass her exam - False (Because the statement does not specify that she needs to study only science for 6 hours daily. It could be any subject.)

II. Ritu must plan her time ahead of preparation and give sufficient time to every subject - True (Because effective studying often involves planning and allocating time to different subjects.)

III. Ritu must not play during these 10 days which are crucial for her for preparation for exams - False (Because the statement does not mention that she should completely avoid playing; balance and breaks are important for effective studying.)

So, Only II follows.

Hence, the correct answer is "Option 2".

Q20. Answer: (a) 45 years, 15 years

Given:

The ages of A and B are in the ratio 3:1. Fifteen years hence, the ratio will be 2:1.

Formula used:

Let the present ages of A and B be 3x and x respectively.

According to the problem:

(3x + 15) / (x + 15) = 2 / 1

Calculations:

(3x + 15) / (x + 15) = 2 / 1

=> 3x + 15 = 2(x + 15)

=> 3x + 15 = 2x + 30

=> 3x - 2x = 30 - 15

=> x = 15

Therefore, the present ages of A and B are:

A = 3x = 3 × 15 = 45 years

B = x = 15 years

Therefore The correct answer is option (1).

Q21. Answer: (a) Ten Degrees Channel

The correct answer is Ten Degrees Channel

Key Points

- The Ten Degree Channel separates the Andaman and Nicobar Islands in the Bay of Bengal
- The ten-degree channel is 150 km wide from north to south and 10 km long from east to west.
- Andaman and Nicobar Islands is a union territory of India consisting of 572 islands.
- It was earlier known as Emerald Island.
- Barren Island, located in the Nicobar Islands, is the only active volcano in India.
- The important mountain peaks in Andaman and Nicobar Islands are:
- Saddle Peak (North Andaman)
- Mount Diavolo (Middle Andaman)

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• Mount Koyob (South Andaman)
• Mount Thuyler (Great Nicobar)
• Andaman and Nicobar Islands come under the jurisdiction of the Kolkata High Court.
Additional Information
• Nine Degree Channel separates the island of Minicoy from the main Lakshadweep archipelago.
• Eight Degree Channel separates the islands of Minicoy and Maldives.
• Hudson strait separates Gulf of Hudson & Atlantic Ocean.
• Palk Strait separates Palk Bay & the Bay of Bengal.
• Duncan Passage separates Rutland Island (part of Great Andaman) and Little Andaman.

Q22. Answer: (d) 1

Given:
tan 100° + tan 125° + tan 100° tan 125°
Formula used:
tan(A + B) = (tan A + tan B) / (1 - tan A tan B)
Calculation:
Let A = 100° and B = 125°
A + B = 225°
tan 225° = tan(180° + 45°) = tan 45°
=> tan 225° = 1
Using the formula for tan(A + B):
tan(A + B) = (tan A + tan B) / (1 - tan A tan B)
=> 1 = (tan 100° + tan 125°) / (1 - tan 100° tan 125°)
=> 1 - tan 100° tan 125° = tan 100° + tan 125°
=> tan 100° + tan 125° + tan 100° tan 125° = 1
Therefore The correct answer is option (4).

Q23. Answer: (b) 8

The logic followed here is:
5 × 6 = 12 + 18
30 = 30 (LHS = RHS)
And,
6 × 8 = 20 + 28
48 = 48 (LHS = RHS)
Similarly,
7 × 2 = ? + 6
14 - 6 = ?
8 = ?
Hence, "Option 2" is the correct answer.

Q24. Answer: (b) [figure]

The folding the paper cutting along the lines to make a cubical box is shown below:
=> As the alternate positions become opposite to each other, the remaining two faces become opposite to each other.
So, opposite pairs are:
So, each option one by one:
Option 1)
=> Cannot be made because
is adjacent to
.
Option 2)
=> Can be made because all are the opposite sides.
Option 3)
=> Cannot be made because

is adjacent to

.

Option 4)

=> Cannot be made because is adjacent to

.

Hence, "Option 2" is the correct answer.

Q25. Answer: (b) 1/4

Given:

sin 21° cos 9° - cos 84° cos 6° = ?

Formula used:

sin x cos y = 1/2 [sin (x + y) + sin (x - y)]

cos x cos y = 1/2 [cos (x + y) + cos (x - y)]

Calculation:

sin 21° cos 9° = 1/2 [sin (21° + 9°) + sin (21° - 9°)]

cos 84° cos 6° = 1/2 [cos (84° + 6°) + cos (84° - 6°)]

=> sin 21° cos 9° = 1/2 [sin 30° + sin 12°]

=> cos 84° cos 6° = 1/2 [cos 90° + cos 78°]

=> sin 21° cos 9° - cos 84° cos 6° = 1/2 [sin 30° + sin 12°] - 1/2 [cos 90° + cos 78°]

=> 1/2 [1/2 + sin 12°] - 1/2 [0 + cos 78°]

=> 1/2 [1/2 + sin 12°] - 1/2 cos 78°

=> 1/2 [1/2 + sin 12° - cos 78°]

=> 1/2 [1/2 + sin 12° - sin 12°]

=> 1/2 × 1/2 = 1/4

Therefore The correct answer is option (2).

Q26. Answer: (d) Delhi-Atari

The correct answer is Delhi-Atari

Key Points

• National Highway 1 (NH 1) connects New Delhi to the town of Attari in Punjab, near the India-Pakistan border.

• It is one of the oldest and most prominent national highways in India.

• The NH1 starts from Delhi, passes through places like Panipat, Ambala, Ludhiana, Jalandhar and goes up to Attari near Amritsar.

• The NH1 is amongst the oldest national highways and hold its importance for two reasons:

• It connects Delhi with the India-Pakistan border (Attari).

• In the Medieval times, it was part of the Grand Trunk road built by Sher Shah Suri.

• The National Highway 1 covers a total distance of 456 km.

• The National Highways Authority of India is an agency under the Ministry of Road Transport and Highways. It constructs and maintains the highways in India.

• It was formed in 1988 and is headquartered in New Delhi.

• It was created through the National Highways Authority of India Act, 1988.

Q27. Answer: (b) Foreign Currency Convertible Bond

The correct answer is Foreign Currency Convertible Bond

Key Points

• FCCB stands for Foreign Currency Convertible Bond.

• It is a type of bond issued by a company in a currency other than the issuer's domestic currency.

• The bond can be converted into the issuer's domestic currency or into equity shares of the issuer at a predetermined conversion price.

• FCCBs are often used by companies as a way to raise capital from international investors.

• They can be attractive to investors because they offer the potential for capital appreciation if the issuer's domestic currency appreciates relative to the currency

• in which the FCCB is issued, as well as the potential for income from the bond's coupon payments.

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• However, FCCBs also carry some additional risks compared to regular bonds,
• such as the risk of currency exchange rate fluctuations and the risk of dilution if the bond is converted into equity.

Q28. Answer: (d) 3

Given:
√(6 + √(6 + √(6 +)))
Formula Used:
x = (-b ± √(b²-4ac))/2a
Solution:
Let x = √(6 + √(6 + √(6 +))) ..
Square both sides:
=> x = √(6 + x)
=> x² = 6 + x
Rearrange:
=> x² - x - 6 = 0
Solve the quadratic equation:
x = (1 ± √(1 + 24))/2
x = (1 ± 5)/2
Select the positive root:
=> x = (1 + 5)/2 = 3
Therefore The positive value is 3.

Q29. Answer: (c) 10 cm

Given:
Height (h) = 8 cm
Radius of lower end (R) = 9 cm
Radius of upper end (r) = 3 cm
Formula used:
Slant height (l) = √(h² + (R - r)²)
Calculation:
l = √(8² + (9 - 3)²)
=> l = √(64 + 6²)
=> l = √(64 + 36)
=> l = √100
=> l = 10 cm
Therefore The correct answer is option 3.

Q30. Answer: (b) Rs. 8820

Given:
Principal (P) = Rs. 8000
Rate (r) = 5% p.a.
Time (t) = 2 years
Formula used:
A = P (1+r/100)^t
Calculation:
A = 8000 (1+5/100)²
=> A = 8000 (1+5/100)²
=> A = 8000 (1+0.05)²
=> A = 8000 (1.05)²
=> A = 8000 (1.1025)
=> A = 8000 × 1.1025
=> A = 8820
Therefore The correct answer is option (2).

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Q31. Answer: (a) 30

Given:

Expression: 35.7 - (3 + 1/(3 + 1/3)) - (2 + 1/(2 + 1/2))

Formula Used:

Order of operations (PEMDAS/BODMAS)

Calculation:

First, solve the innermost fractions:

1/3 = 0.333

3 + 0.333 = 3.333

1/3.333 ≈ 0.3

3 + 0.3 = 3.3

Second, solve the second fraction:

1/2 = 0.5

2 + 0.5 = 2.5

1/2.5 = 0.4

2 + 0.4 = 2.4

Now substitute these values back into the original expression:

35.7 - 3.3 - 2.4

Finally, perform the subtraction:

=> 35.7 - 3.3 = 32.4

=> 32.4 - 2.4 = 30

The value of the given expression is 30.

Q32. Answer: (b) Anthracite, lignite

The correct answer is Anthracite, lignite

Key Points

• Anthracite is the highest quality coal, and lignite is the lowest quality coal, based on their carbon and moisture content

• The highest quality coal with the highest carbon content (90–98%) and low moisture content (7–10%).

• It's a hard, brittle, black, and lustrous coat

• Anthracite

• Anthracite contains 86%–97% carbon and generally has the highest heating value of all ranks of coal.

• Lignite

• It contains 25%–35% carbon and has the lowest energy content of all coal ranks.

• Lignite coal deposits tend to be relatively young and were not subjected to extreme heat or pressure.

• Lignite is crumbly and has a high moisture content, which contributes to its low heating value.

Additional Information

• Here are the carbon contents of other types of coal:

Material	Carbon content	Energy content (kcal/kg)	Description
Bituminous	85	6500	• It is intermediate in rank and sometimes called soft coal. - It has a high heating value, but it also has a high sulfur content. - Major coal users are the cement, food, paper, automobile, textile, and plastic industries. - Bituminous coal derivatives or by-products can be changed into many different chemicals form which we can make paint, nylon, aspirin, and many other items.

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Lignite	70	3500	• It is the lowest rank of coal - which means that it has the lowest heating value and low carbon content. - Although lignite is more solid than peat it crumbles when shipped long distances. Lignite is used to generate electricity. Other uses include generating synthetic natural gas and producing fertilizer products.
Peat	50	1500	• It is organic sediment. Burial, compaction, and coalification will transform it into coal, a rock.

Q33. Answer: (d) Y

Given: Fifth to the right of 20th letter from the left in English alphabet

This implies, 20 + 5 = 25th letter of English alphabet from the Left end,

So, 'Y' is the 25th letter of English alphabet from the Left end.

Hence, the correct answer is "Option 4".

Q34. Answer: (c) Ward Committee

The correct answer is Ward Committee

Key Points

• Under Article 243S of the Constitution of India, a Ward Committee must be constituted in municipalities with a population exceeding 3 lakh.

• Constitution (Seventy Fourth Amendment) Act, 1992 has introduced a new Part IXA in the Constitution, which deals with Municipalities in an article 243 P to 243 ZG.

• This amendment, also known as Nagarpalika Act, came into force on 1st June 1993.

• It has given constitutional status to the municipalities and brought them under the justifiable part of the constitution.

• States were put under constitutional obligation to adopt municipalities as per the system enshrined in the constitution.

• Under clause (1) of article 243S, it has been provided that there shall be constituted Wards Committees, consisting of one or more wards, within the territorial area of a Municipality having a population of three lacs or more.

• A ward is an area in a metro or local municipality, which has clearly defined boundaries.

• A ward committee is a democratically elected body that represents a wide variety of community interests and meets regularly under the chairperson who is the ward councilor.

• Thus, we can say that the minimum population of a municipality to constitute ward committees should be 3 lakhs or above.

Additional Information

• Nagar Committee

• A Nagar Committee, often referred to as a Nagar Panchayat, is a local government body for a transitional area—an area in transition from rural to urban.

• It governs smaller towns with a population typically between 20,000 and 100,000.

• Nagar Panchayats are part of the three-tier structure of local governance under the 74th Amendment,

• Metropolitan Committee

• The Metropolitan Planning Committee (MPC) is constituted for planning and coordinating development in metropolitan areas, which are defined as areas having a population of over 10 lakhs.

• This committee ensures regional planning and resource management across a larger urban expanse, involving multiple municipalities.

• It’s primarily focused on the metropolitan regions rather than smaller urban areas with just 3 lakh population.

• District Planning Committee

• The District Planning Committee (DPC) is constituted under Article 243ZD of the Constitution.

• It consolidates plans from Panchayats and municipalities at the district level and integrates them into a comprehensive development plan for the entire district.

• The focus is on overall district-level development, not just urban areas.

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Q35. Answer: (d) Six

The correct answer is Six

Key Points

• Six banks were nationalised by the Union Government of India in 15th April 1980.
• Nationalization is the transfer of ownership and management of an undertaking from private hands to the states.
• Banks were nationalized in India through an ordinance passed in the year 1969.
• Indira Gandhi was the prime minister who nationalized banks in India.
• The first nationalization of banks took place on 19th July 1969.
• 14 banks were nationalized in 1969.
• It was based on the banks whose deposit exceeds Rs. 50 crores.
• The second time the government nationalized banks on 15th April 1980.
• 6 banks were nationalized in 1980.
• It was based on the banks whose deposit exceeds Rs. 200 crores
• Six banks in are:
• Andhra Bank: Now part of Union Bank of India
• Corporation Bank: Now part of Union Bank of India
• New Bank of India: Now part of Punjab National Bank
• Oriental Bank of Commerce: Now part of Punjab National Bank
• Punjab and Sind Bank: Nationalized in 1980
• Vijaya Bank: Now Bank of Baroda.

Mistake Points

• Most of the nationalized banks in India are also referred to as 'public sector banks'.
• After the merger of many banks, currently there are a total of 12 public sector banks in India including the State Bank of India (based on the RBI official website).

Q36. Answer: (d) pH = 4

The correct answer is pH = 4

Key Points

• The pH scale is a logarithmic scale that measures the acidity or basicity of a solution.
• It ranges from 0 to 14, with 7 being neutral.
• A pH less than 7 indicates an acidic solution, meaning it has a higher concentration of hydrogen ions (H+).
• A pH greater than 7 indicates a basic solution, meaning it has a higher concentration of hydroxide ions (OH-).
• The concentration of hydrogen ions in a solution is related to the pH by the following equation
• pH = -log[H+]
• Where:
• pH is the pH of the solution
• [H+] is the concentration of hydrogen ions in moles per liter (M)
• From this equation, we can see that a lower pH corresponds to a higher concentration of hydrogen ions.
• Among the acidic solutions, pH = 4 is the lowest, meaning it has the highest concentration of hydrogen ions.
• Therefore, the solution with pH = 4 has the highest concentration of hydrogen ions.

Q37. Answer: (c) 550 km

Given:

A bus and a car start from points x and y respectively and travel towards each other at the speed of 60 km/h and 50 km/h respectively.

By the time they meet, the bus has travelled 50 km more than the car.

Formula used:

Distance = Speed × Time

Calculation:

Let the distance travelled by the car be d km.

Then, the distance travelled by the bus is (d + 50) km.

Time taken to meet is the same for both:

=> (d+50)/60 = d/50

Cross-multiplying to solve for d:

=> 50(d + 50) = 60d

=> 50d + 2500 = 60d

=> 2500 = 60d - 50d

=> 2500 = 10d

=> d = 250 km

Therefore, the total distance between x and y:

=> d + (d + 50)

=> 250 + 300

=> 550 km

Therefore The correct answer is option (3).

Q38. Answer: (b) 1/2(a + 1/a)

Given:

cosec θ - cot θ = a

Formula used:

$\text{cosec}^2\theta - \cot^2\theta = 1$

Calculation:

=> Let cosec θ = x and cot θ = y

=> x - y = a ----- (i)

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

=> a(x + y) = 1 => x + y = 1/a ----- (ii)

From (i) and (ii),

=> 2x = a + 1/a

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

=> cosec θ = (a + 1/a) / 2

Therefore The value of cosec θ is (a + 1/a) / 2.

Q39. Answer: (a) Sasaram

The Correct Answer is Sasaram.

Key Points

• The tomb of Sher Shah Suri is in Sasaram, Bihar State.

• The tomb was built in memory of Emperor Sher Shah Suri, a Pathan of Bihar who defeated the Mughal Empire and founded the Suri Empire in northern India,

• On 13 May 1545 AD, he died in an accidental gunpowder explosion at the Fort of Kalinjar.

• This tomb is an example of Indo-Islamic architecture, designed by the architect Mir Muhammad Aliwal Khan and constructed between 1540 and 1545, this red mausoleum of sandstone is known as the second Taj Mahal of India, standing in the middle of an artificial lake, which is almost square.

• On the octagonal plan, the main tomb is constructed, topped by a dome, spanning 22 meters and is surrounded by ornamental domed kiosks that were once covered in colourful glazed tile work.

• The tomb was built during the life of Sher Shah and during the reign of his son, Islam Shah.

• Three months after the death of Sher Shah, an inscription dates its completion to 16 August 1545.

Additional Information

• Sher Shah Suri referred to as Sher Khan was the founder of the Suri Empire in India, with its capital in modern-day Bihar in Sasaram.

• He introduced the Rupee currency.

• In 1537, when Babur's son Humayun was on an expedition elsewhere,

• He established a new economic and military administration during his seven-year rule from 1538 to 1545,

• issued the first Rupiya of 'Tanka' and organized the Indian Subcontinent's postal system.

Q40. Answer: (d) 20 Hz

The correct answer is 20 Hz

Key Points

• The human ear is designed to detect sound waves within a specific range of frequencies.

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• These sound waves are vibrations in the air that cause our eardrums to vibrate, which then sends signals to the brain.
• Infrasound: Sounds with frequencies below 20 Hz are known as infrasound.
• These are too low for humans to hear.
• Audible Sound: Sounds with frequencies between 20 Hz and 20,000 Hz are audible to humans.
• This is the range of frequencies that our ears are most sensitive to.
• Ultrasound: Sounds with frequencies above 20,000 Hz are known as ultrasound.
• These are also inaudible to humans but can be detected by certain animals and used in medical imaging techniques.
• Therefore, the lowest frequency that humans can typically hear is 20 Hz.

Q41. Answer: (d) 1024

The correct answer is 1024

Key Points

• 1 gigabyte (GB) is equal to 1024 megabytes (MB).
• This conversion is based on the binary system, where each unit is 2^10 times larger than the previous unit.
• It is written as 109 in SI units, which are the most commonly used storage unit in modern times.

Additional Information

Unit Conversion Table:

• 4 bit = 1 Nibble
• 8 bit = 1 byte
• 1 KB (kilobyte) = 1024 byte
• 1 MB (megabyte) = 1024 KB
• 1 GB (gigabyte) = 1024 MB
• 1 TB (terabyte) = 1024 GB
• 1 PB (petabyte) = 1024 TB
• 1 XB (Exabyte) = 1024 PB
• 1 ZB (zettabyte) = 1024 XB
• 1 YB (yottabyte) = 1024 ZB

Q42. Answer: (a) anaerobic respiration in yeasts

The correct answer is anaerobic respiration in yeasts

Key Points

• Ethanol is produced during anaerobic respiration in yeasts
• Anaerobic respiration is a process that occurs when oxygen is not available, and it produces ethanol and carbon dioxide as byproducts.
• This process is also known as alcoholic fermentation.
• In yeast, glucose is used to produce ethanol and carbon dioxide.
• In contrast, aerobic respiration occurs in muscle fibres during everyday activities and light exercise.
• Aerobic respiration requires oxygen to break down food energy and generate ATP for muscle contractions.

Additional Information

• Aerobic respiration in muscles:
• Like yeasts, muscles can also undergo aerobic respiration in the presence of oxygen.
• This process breaks down glucose to produce carbon dioxide and water.
• It is the primary source of energy for muscles during moderate activity.
• Anaerobic respiration in muscles:
• This process occurs in muscles when oxygen supply is limited, such as during intense exercise.
• In the absence of oxygen, muscles break down glucose to produce lactic acid.
• Lactic acid buildup can cause muscle fatigue and soreness

Q43. Answer: (d) 100

Given:

Difference between a number and its two-fifth = 60

Formula Used:

Let the number be x.

Then, x - 2x/5 = 60

Calculation:

x - 2x/5 = 60

=> (5x - 2x)/5 = 60

=> 3x/5 = 60

=> 3x = 60 × 5

=> 3x = 300

=> x = 300/3

=> x = 100

The number is 100.

Q44. Answer: (d) Apsara

The correct answer is Apsara

Key Points

• India's oldest nuclear reactor, Apsara, was recommissioned in 2018 as an upgraded version called Apsara-Upgraded

• Apsara

• The first research reactor in Asia, Apsara was operational in 1956 at the Bhabha Atomic Research Centre (BARC) in Trombay.

• It was a pool-type reactor that used highly enriched uranium as fuel and light water as both a moderator and coolant.

• After providing service for over five decades, it was shut down in 2009.

Additional Information

• Bhaskar

• It refers to India’s Bhaskara satellites, launched in the late 1970s and early 1980s by ISRO for Earth observation.

• These satellites focused on remote sensing applications, including forestry, hydrology, and geology.

• It is Designed primarily for remote sensing applications.

• Dhanush

• Dhanush is a ship-based, short-range ballistic missile system developed by India’s Defence Research and Development Organisation (DRDO).

• It is a naval variant of the Prithvi missile and is capable of launching nuclear and conventional payloads.

• Dhruva

• Dhruva is a nuclear research reactor, also located at the Bhabha Atomic Research Centre (BARC), Mumbai.

• It was commissioned in 1985, making it much newer than Apsara.

• Dhruva is India's largest research reactor, mainly used for producing radioisotopes for medical and industrial purposes and for conducting research in nuclear physics and material science.

Q45. Answer: (d) Disposing dry leaves in pits under soil

The correct answer is Disposing of dry leaves in pits under the soil

Key Points

• Eco-friendly practices are actions that minimize harm to the environment.

• They aim to preserve natural resources, reduce pollution, and protect ecosystems.

• It has a positive impact.

• Dry leaves are biodegradable and can decompose naturally into organic matter.

• This organic matter can improve soil quality by increasing its nutrient content and water-holding capacity.

• Burying them in pits allows for a slower decomposition process, which can provide nutrients to the soil over a longer period.

Additional Information

• Use of chemical fertilizers to increase crop productivity

• Chemical fertilizers can pollute water sources, harm soil microorganisms, and contribute to air pollution.

• They can also lead to eutrophication, which is the excessive growth of algae in water bodies.

• Disposing of waste plastics by dumping in pits under the soil

• Plastics are not biodegradable and can take hundreds of years to decompose.

• Burying them in pits can contaminate the soil and harm wildlife that may mistake them for food.

• Disposal of biodegradable wastes in ponds

• While biodegradable wastes will eventually decompose, they can still pollute water bodies.

• As they decompose, they can consume oxygen, leading to the death of aquatic organisms.

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Q46. Answer: (d) Jute

The correct answer is Jute.

Key Points

• Jute is known as the "Golden fibre" because of its golden color and its importance as a cash crop for many countries.
• Jute is primarily grown in India, Bangladesh, and China, and is used for making products such as bags, carpets, and ropes.
• Sugarcane is an important crop in many tropical countries, particularly in South America and Asia.
• It is used for making sugar, molasses, and ethanol.
• Wheat is a major crop in many countries, particularly in Europe and North America.
• It is used for making flour, which is used to make bread, pasta, and other food products.
• Rice is a staple food in many countries, particularly in Asia.
• It is used for making rice dishes, such as sushi and risotto.

Additional Information

• Jute
• It is a long, soft, shiny vegetable fiber that is spun into coarse, strong threads.
• It is one of the cheapest natural fibres and is second only to cotton in terms of usage.
• Mustard
• It is Often referred to as "Yellow Gold" due to its valuable oilseed and condiment properties.
• The Scientific Name is Brassica species (primarily Brassica juncea in India).
• A widely grown Rabi crop in India, particularly in Rajasthan, Haryana, Uttar Pradesh, and Punjab.
• Sandalwood
• It is known as "Green Gold" because of its high economic and cultural value in the perfumery and religious industries.
• The Scientific Name is Santalum album (Indian sandalwood).
• Sandalwood has cooling, antiseptic, and calming properties and is used in Ayurvedic treatments.
• Grown mainly in Karnataka, Tamil Nadu, and Kerala, it is a protected resource in India.
• Wheat
• It is called "Golden Grain" due to its golden appearance and significance as a staple food crop globally.
• The Scientific Name is Triticum aestivum
• India is one of the largest producers of wheat in the world, primarily grown in Uttar Pradesh, Punjab, and Madhya Pradesh.

Q47. Answer: (c) 15

Given:

Swapna travels equal distances with speeds of 10 km/h, 15 km/h, and 20 km/h and takes a total of 65 minutes.

Formula used:

Time = Distance / Speed

Total Time = Time1 + Time2 + Time3

Calculations:

Let the equal distance be d km.

Time1 = d / 10

Time2 = d / 15

Time3 = d / 20

Total time = (d / 10) + (d / 15) + (d / 20) = 65 / 60 hours

=> (d / 10) + (d / 15) + (d / 20) = 65 / 60

=> d(1/10 + 1/15 + 1/20) = 65 / 60

=> d(6/60 + 4/60 + 3/60) = 65 / 60

=> d(13/60) = 65 / 60

=> d = 65 / 13

=> d = 5 km

Total distance = 3 × d = 3 × 5 = 15 km

Therefore The correct answer is option (3).

Q48. Answer: (a) September 15

The correct answer is September 15.

Key Points

• World Clean Up Day is observed annually on the third Saturday of September.

• In 2024, the third Saturday of September falls on September 15.

• World Clean Up Day aims to bring together people worldwide to combat the global waste problem.

• The initiative involves millions of volunteers from different countries participating in clean-up activities.

Additional Information

• World Clean Up Day

• World Clean Up Day was initiated by the Let's Do It Foundation, based in Estonia.

• The first World Clean Up Day took place in 2008 in Estonia, where 50,000 people came together to clean up the entire country in just five hours.

• It has grown into a global movement, with millions of volunteers from over 150 countries participating annually.

• The primary goal of World Clean Up Day is to raise awareness about the global waste problem and motivate people to take action in their communities.

• Environmental Impact of Waste

• Improper waste disposal can lead to various environmental issues, including soil and water pollution.

• Plastic waste, in particular, poses a significant threat to marine life and ecosystems.

• Reducing, reusing, and recycling are essential practices to minimize waste and its environmental impact.

• Participating in clean-up activities helps in reducing the amount of waste in the environment and promotes a cleaner and healthier planet.

• Global Participation

• World Clean Up Day witnesses participation from volunteers, organizations, and governments worldwide.

• Various events and activities are organized, including community clean-ups, waste audits, and educational programs.

• The movement encourages collaboration and collective action to tackle the global waste problem.

• It also emphasizes the importance of sustainable practices and responsible waste management.

Q49. Answer: (a) 30^?

Given:

angle PBA = 20°

angle C_(ext) = 70°

BP || CQ

AC = BC

Formula used:

Exterior Angle Theorem: The exterior angle is equal to the sum of the opposite interior angles.

Calculation:

=> angle PBC = angle C_(ext)= 70°

=> angle PBC = angle PBA + angle ABC

=> 70° = 20° + angle ABC

=> angle ABC = 70 - 20 = 50°

Since, AC = BC, angle ABC = angle BAC

angle BAC = 50°

=> angle C_(ext)+ X = angle ABC + angle BAC, External Angle theorm

=> 70° + X = 50° + 50°

=> X = 100° - 70°

=> x = 30°

Therefore The measure of x is 30°.

Q50. Answer: (a) Rs. 7,650

Given:

Labelled Price (L) = Rs. 12,000

First Discount = 25%

Second Discount = 15%

Formula used:

Discounted Price after First Discount = L - (L × First Discount%)

Final Price = Discounted Price after First Discount - (Discounted Price after First Discount × Second Discount%)

Calculation:

Discounted Price after First Discount = 12000 - (12000 × 25/100)

=> Discounted Price after First Discount = 12000 - 3000

=> Discounted Price after First Discount = 9000

Final Price = 9000 - (9000 × 15/100)

=> Final Price = 9000 - 1350

=> Final Price = 7650

Therefore The correct answer is option 1.

Q51. Answer: (d) James A Hickey

The correct answer is James A Hickey

Key Points

• The First Newspaper of India Hickey's Bengal Gazette was published in Calcutta in 1780.

• Hicky's Bengal Gazette or the Original Calcutta General Advertiser was an English-language weekly newspaper published in Kolkata (then Calcutta), the capital of British India.

• It was the first newspaper printed in Asia and was published for two years, between 1780 and 1782, before the East India Company seized the newspaper's types and printing press.

• Founded by James Augustus Hicky, a highly eccentric Irishman who had previously spent two years in jail for debt, the newspaper was a strong critic of the administration of Governor-General Warren Hastings.

• The newspaper was important for its provocative journalism and its fight for free expression in India.

Additional Information

Some important newspapers and journals are-

Newspaper	Editor/Founder
Hindoo Patriot	Madhusudan
Rast Goftar	Dadabhai Naroji
Indian Mirror	Devendranath Tagore
Amrita Bazar Patrika	Sisir Kumar Ghosh and Motilal Ghosh
Sudharak	GG Agarkar

Q52. Answer: (a) 8

Given:

$((0.2)^3 + (0.04)^3)/((0.1)^2 \times 0.1 + (0.02) \times (0.02)^2)$

Formula Used:

$(a^3 + b^3)/(c^2 \times c + d \times d^2)$

Calculation:

Given values:

a = 0.2, b = 0.04, c = 0.1, d = 0.02

Calculate numerator:

Numerator = $(0.2)^3 + (0.04)^3$

=> 0.008 + 0.000064

=> 0.008064

Calculate denominator:

Denominator = (0.1)2 × 0.1 + (0.02) × (0.02)2

=> 0.01 × 0.1 + 0.02 × 0.0004

=> 0.001 + 0.000008

=> 0.001008

Now, calculate the value:

Value = 0.0080640.0010080.0080640.0010080.0080640.0010080.0080640.0010080.0080640.0010080.0080640.0010080.00806 40.001008

=> 8

The correct answer is option 1.

Q53. Answer: (c) Kalbe Sadiq

The correct answer is Maulana Wahiduddin Khan.

Key Points

• Maulana Wahiduddin Khan was a renowned Islamic scholar and peace activist.

• He was awarded the Padma Bhushan in 2021 for his contributions to spiritualism and peace.

• He was the author of over 200 books on Islam, prophetic wisdom, and spirituality.

• His work emphasized non-violence and coexistence among different religious communities.

Additional Information

• Padma Bhushan

• The Padma Bhushan is the third-highest civilian award in the Republic of India.

• It is awarded to recognize distinguished service of a high order to the nation, in any field.

• The award was instituted on 2 January 1954 and is announced every year on Republic Day.

• The awardees receive a Sanad (certificate) signed by the President of India and a medallion.

• Islamic Scholar

• An Islamic scholar is an individual who is educated in the teachings of Islam and Islamic jurisprudence (Fiqh).

• They play a crucial role in interpreting the Quran and Hadith, and in providing guidance to the Muslim community.

• Scholars often write extensively on religious, social, and ethical issues, and contribute to the intellectual and spiritual growth of the community.

• Non-violence

• Non-violence is a principle that advocates for resolving conflicts and achieving social or political change without the use of physical force.

• It is a fundamental tenet in many religious and philosophical traditions, including those of Mahatma Gandhi and Martin Luther King Jr.

• Non-violence promotes peace, tolerance, and understanding among individuals and communities.

• Interfaith Dialogue

• Interfaith dialogue refers to cooperative, constructive, and positive interaction between people of different religious traditions.

• It aims to promote understanding, respect, and collaboration among various faith communities.

• Such dialogues are essential for fostering peace and coexistence in a multicultural and multi-religious society.

Q54. Answer: (d) Finland

The correct answer is Finland

Key Points

• Finland was the happiest country in the world in 2020, according to the World Happiness Report:

• Top 10 countries: Finland, Denmark, Switzerland, Iceland, Netherlands, Norway, Sweden, Luxembourg, New Zealand, and Austria

• Bottom 3 countries: Rwanda, Zimbabwe, and Afghanistan

• India's rank: 144

• The World Happiness Report is based on survey scores and answers to a main life evaluation question.

• The report measures the happiness and well-being of individuals in nations worldwide.

• Factors that contribute to happiness include:

• A high quality of life

• Strong social support systems

• Low corruption

• A healthy work-life balance

• A strong sense of community

• A propensity for helping others

• A clear sense of purpose

• The rule of law

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• Reduced inequality
• Public institution confidence

Q55. Answer: (a) 7480

Given:
Numbers: 22, 34, 40
Formula used:
LCM of given numbers is calculated by finding the highest power of all prime factors present in the numbers.
Calculation:
Prime factorization:
$22 = 2 \times 11$
$34 = 2 \times 17$
$40 = 2^3 \times 5$
LCM = Highest powers of all prime factors
$LCM = 2^3 \times 5 \times 11 \times 17$
$\Rightarrow LCM = 8 \times 5 \times 11 \times 17$
$\Rightarrow LCM = 40 \times 11 \times 17$
$\Rightarrow LCM = 440 \times 17$
$\Rightarrow LCM = 7480$
Therefore The correct answer is option 1.

Q56. Answer: (b) Italy

The correct answer is Italy
Key Points
• Italy has consistently been one of the world's largest wine producers.
• While the specific rankings can fluctuate slightly from year to year, Italy often holds the top position.
• Other major wine-producing countries include France, Spain, and the United States
Additional Information
• Italy was the world's largest producer of wine in 2019, producing 47.5 million hectoliters (Mhl):
• Italy: 47.5 Mhl
• France: 42.1 Mhl
• Spain: 33.5 Mhl
• These three countries accounted for 48% of the world's wine production in 2019.
• However, production in the top three countries declined sharply compared to 2018 due to bad weather conditions, including spring frost, hail, drought, and excess heat.
• Other top wine-producing countries in 2019 included: the United States: 23.6 Mhl, Argentina: 13 Mhl, Australia: 12.5 Mhl, Chile: 11.9 Mhl, and South Africa: 9.7 Mhl.

Q57. Answer: (d) Zinc oxide

The correct answer is Zinc oxide
Key Points
• Zinc oxide is an amphoteric oxide
• Amphoteric oxide:
• ZnO can react with both acids and bases.
• Reaction with acid:
• ZnO reacts with hydrochloric acid (HCl) to produce zinc chloride ($ZnCl_2$) and water.
• Reaction with base:
• ZnO reacts with sodium hydroxide (NaOH) to produce sodium zincate (Na_2ZnO_2) and water.
Additional Information
• Sulphur dioxide (SO_2)
• Acidic oxide: SO_2 reacts with bases to form sulfites.
• For example, it reacts with sodium hydroxide (NaOH) to produce sodium sulfite (Na_2SO_3) and water.
• Magnesium oxide (MgO)

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• Basic oxide: MgO reacts with acids to form magnesium salts.
• For example, it reacts with hydrochloric acid (HCl) to produce magnesium chloride ($MgCl_2$) and water.
• Phosphorus pentoxide (P_2O_5)
• Acidic oxide: P_2O_5 reacts with bases to form phosphates.
• For example, it reacts with potassium hydroxide (KOH) to produce potassium phosphate (K_3PO_4) and water.

Q58. Answer: (c) Local Area Network

The correct answer is Local Area Network

Key Points

• A local area network is a network of computers and other devices confined to a relatively small area.
• Local Area Network is used for connecting different devices in a small geographical area for sharing different resources like printers, plotters etc. or some files need to be accessed by more than one device.
• A topology for a Local Area Network in which all nodes are individually connected to a central connection point like a hub or switch is called Star Topology.

Additional Information

• Wide Area Network:
• A wide area network (WAN) is a data network, usually used for connecting computers, that spans a wide geographical area.
• WANs can be used to connect cities, states, or even countries.
• P2P Stands for the "Peer to Peer" network, the "peers" are computer systems that are interconnected to each other via the Interne

Q59. Answer: (b) Rajasthan

The correct answer is Rajasthan

Key Points

• Kalbelia is a folk dance mainly performed by the Kalbelia Community in Rajasthan.
• It is also known by other names like 'Sapera Dance' or 'Snake Charmer Dance'.
• It was included in UNESCO's representative list of the Intangible Cultural Heritage of Humanity from the year 2010.
• In Kalbelia dance, males play generally various traditional instruments and females of the Kalbelia Community perform the dance.
• Kalbelia dance is one of the most sensuous dances among all Rajasthani dances.

Additional Information

State	Folk Dances
Madhya Pradesh	Thandai,Matki Dance,Gondla
Maharashtra	Lavani, Nakata, Koli, Lezim, Gafa, Dahikala Dasavtar
Himachal Pradesh	Himachali Ras,Jhumar,Chhari Dance,Giddi, Kullu Nach
Rajasthan	Ghumar, Chakri, Ganagor, Jhulan Leela, Jhuma, Suisini, Ghapal

Q60. Answer: (b) 800

Given:

Value to be calculated: $((3.6 \times 0.48 \times 2.50))/((0.12 \times 0.09 \times 0.5))$

Formula Used:

Division of the product of numbers in the numerator by the product of numbers in the denominator.

Calculation:

Numerator: $3.6 \times 0.48 \times 2.50$

Denominator: $0.12 \times 0.09 \times 0.5$

Numerator:

$3.6 \times 0.48 = 1.728$

$1.728 \times 2.50 = 4.32$

Denominator:

$0.12 \times 0.09 = 0.0108$

$0.0108 \times 0.5 = 0.0054$

Final Calculation:

4.32/0.0054

=> 4.32 / 0.0054 = 800

The correct answer is option 2 (800).

Alternate Method

Calculation:

=> ((3.6 × 0.48 × 2.50))/((0.12 × 0.09 × 0.5))

Multiply the numerator and denominator by 100000 to remove the decimals,

=> ((36 × 48 × 250))/((12 × 9 × 5))

=> 4 × 4 × 50

=> 800

Therefore The correct answer is 800.

Q61. Answer: (d) 20 and 40

Given:

Total number of coins = 60

Total amount = Rs. 240

Formula used:

Let the number of Rs. 2 coins be x and the number of Rs. 5 coins be y.

We have two equations:

1) x + y = 60

2) 2x + 5y = 240

Calculations:

From equation 1):

y = 60 - x

Substitute y in equation 2):

2x + 5(60 - x) = 240

=> 2x + 300 - 5x = 240

=> -3x + 300 = 240

=> -3x = 240 - 300

=> -3x = -60

=> x = 20

Therefore, y = 60 - x

=> y = 60 - 20

=> y = 40

Therefore The correct answer is option (4): 20 and 40.

Q62. Answer: (a) Some fish are keys.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

Option 1) Some fish are keys → Does not follow (As some keys are boats, some boats are pipes and all pipes are fish. So it is possible but not definite.)

Option 2) Some fish are boats → Follow (As some boats are pipes and all pipes are fish. As whole pipes comes in fish and has some part common with boats, therefore it is true.)

Option 3) Some pipes are boats → Follow (As some boats are pipes. As boats has some part common with pipes, therefore it is true.)

Option 4) Some boats are keys → Follow (As some keys are boats. As keys has some part common with keys, therefore it is true.)

Therefore Here, Conclusion 'Some fish are keys' follow.

Hence, "Option 1" is the correct answer.

Q63. Answer: (a) 25

Given:

Find the least number which is required to be added to 2495 so that the sum is exactly divisible by 3, 4, 5, and 6.

Formula used:

LCM of 3, 4, 5, and 6

Number to be added = LCM - (Remainder of 2495/LCM)

Calculations:

LCM of 3, 4, 5, and 6

Prime Factorization:

3 = 3

4 = 2^2

5 = 5

6 = 2 × 3

LCM = $2^2 \times 3 \times 5$

=> LCM = 4 × 3 × 5

=> LCM = 60

The remainder when 2495 is divided by 60.

=> 2495 / 60 = 41 remainder 35

Number to be added = 60 - 35 = 25

Therefore The least number that must be added is 25. The correct answer is option 1.

Q64. Answer: (c) SBI

The correct answer is SBI

Key Points

• SBI Bank has introduced YONO Cash Point', a cardless ATM service

• Customers will have to raise a request in their mobile banking application 'iMobile'.

• The bank has set a daily transaction limit of Rs.20,000.

• ICICI Bank, one of the leading private sector banks has introduced a cardless cash withdrawals facility from its ATMs.

• Banks have been trying to reduce the usage of debit cards to withdraw cash.

Additional Information

• Reserve Bank of India on 8 April 2022 announced that it has proposed to make a cardless cash withdrawal facility available at all ATMs across all banks in India.

• The cardless cash withdrawal facility can be used for the self-withdrawal of money.

• However, not many banks have this facility yet and there is a daily transaction limit.

• This ranges from Rs 10,000 to Rs 20,000, as per the facilities offered by the particular bank (SBI, ICICI Bank, Axis Bank and Bank of Baroda).

Q65. Answer: (b) National Development Council

The correct answer is the National Development Council

Key Points

• The full form of "NDC" is National Development Council (NDC)

• This is a government agency in India that plays a crucial role in formulating and coordinating national development policies.

• It is chaired by the Prime Minister and includes representatives from various states and central ministries.

• National Development Council (NDC) is an executive body established by the Government of India in August 1952.

• It is also known as Rashtriya Vikas Parishad.

• It is neither a constitutional nor a statutory body.

• NDC is the apex body to take decisions on matters related to the approval of five-year plans of the country.

• The Chairman of NDC is the Prime Minister of India.

• The secretary of the Planning Commission is also the secretary of the NDC.

• The administrative assistance is also provided by the Planning Commission.

• Objectives of NDC

• NDC is an advisory body to the Planning Commission.

• To strengthen and mobilize the effort and resources of the nation in support of the Plan.

• To ensure the balanced and rapid development of all parts of the country.

• Provides a platform to all the states to discuss their problems and issues related to development.

Additional Information

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• National Defense Council (NDC)

• The National Defense Council (NDC) is a high-level government body responsible for overseeing and coordinating national defence policies.

• It is often chaired by the head of state or government and includes representatives from the military, intelligence agencies, and other relevant government departments.

• The NDC's primary function is to provide strategic guidance and ensure that the nation's defence capabilities are aligned with its national security objectives.

• National Development Council (NDC)

• The National Development Council (NDC) is a government body that plays a crucial role in formulating and coordinating national development policies in India.

• It is chaired by the Prime Minister and includes representatives from various states and central ministries.

• The NDC's primary function is to ensure that development efforts are aligned with the nation's overall goals and priorities and to address regional disparities in development.

• National District Council (NDC)

• The National District Council (NDC) is a term that can have different meanings depending on the context.

• In some countries, it may refer to a local government body responsible for administering a district or region.

• In other contexts, it might refer to a council or organization that focuses on development issues at the district level.

• The specific functions and responsibilities of an NDC can vary widely depending on the country and its political system.

Q66. Answer: (c) 375

Given:

Tony should get 40% of the total marks to pass. He obtained 120 marks and failed by 30 marks.

Formula used:

Let the total marks be T.

To pass, Tony needs 40% of T marks, which is 0.4T.

Since he failed by 30 marks, he obtained 0.4T - 30 marks.

Given that he obtained 120 marks:

0.4T - 30 = 120

Calculation:

0.4T - 30 = 120

=> 0.4T = 120 + 30

=> 0.4T = 150

=> T = 150 ÷ 0.4

=> T = 375

Therefore The correct answer is option 3.

Q67. Answer: (a) 36π cm^3

Given:

The largest sphere is cut off from a solid cube of side 6 cm.

Side of the cube = 6 cm

Formula used:

Volume of sphere = 4/3π r^3

Where, r = radius of the sphere

Calculation:

Since the largest sphere is cut off from the cube, the diameter of the sphere = side of the cube = 6 cm

Radius (r) = 6/2 = 3 cm

Volume of the sphere = 4/3π r^3

=> Volume = 4/3π $(3)^3$

=> Volume = 4/3π × 27

=> Volume = 36π cm^3

Therefore The correct answer is option (1).

Q68. Answer: (a) Montreal

The correct answer is Montreal

Key Points

• The headquarters of the International Civil Aviation Organization (ICAO) is located in Montreal, Quebec, Canada.

• ICAO is a specialized agency of the United Nations that coordinates international air navigation and air transport.

• The organization also has regional and sub-regional offices in other cities, including:

• Bangkok, Cairo, Dakar, Lima, Mexico City, Nairobi, and Paris.

• ICAO was established in Montreal in 1946 after a vote by delegates at the first PICAO Interim Assembly.

• The city was chosen for its strategic location and potential for economic, scientific, technical, and aeronautical expansion

Q69. Answer: (b) Neither 1 nor 2 follows.

Given,

Statement:

Increasing use of non-biodegradable plastic will pose a grave threat to plant and animal life in the long run.

Conclusions:

I. If non-biodegradable plastic is banned, humanity will not face extinction - False (Because the statement does not provide any information about the direct correlation between banning non-biodegradable plastic and preventing human extinction).

II. Humanity will not be impacted by extensive use of plastic - False (Because the statement explicitly mentions that increasing use of non-biodegradable plastic will pose a grave threat to plant and animal life, which indirectly affects humanity).

So, neither conclusion I nor II follows.

Hence, the correct answer is "Option 2".

Q70. Answer: (a) Sir Edwin Lutyens

The correct answer is Sir Edwin Lutyens.

Key Points

• Sir Edwin Lutyens was a renowned British architect who played a significant role in designing New Delhi, the new capital of India during British rule.

• He is famous for his distinctive architectural style that blends traditional motifs with classical elements, often referred to as "Lutyens' Delhi."

• 7, Lok Kalyan Marg (previously known as 7, Race Course Road) is the official residence of the Prime Minister of India and was designed by Sir Edwin Lutyens.

• Lutyens' work in India includes several key government buildings and landmarks, including the India Gate and the Rashtrapati Bhavan.

Additional Information

• Le Corbusier

• Le Corbusier was a Swiss-French architect, designer, and urban planner known for his contributions to modern architecture.

• He designed the city of Chandigarh in India, serving as the master planner and the architect of several key buildings.

• His architectural style emphasized functionality and simplicity, often using geometric forms and open spaces.

• HK Mewada

• HK Mewada was an Indian architect who worked closely with Le Corbusier on the Chandigarh project.

• He played a crucial role in implementing Le Corbusier's vision and design principles in the construction of Chandigarh.

• Francois Martin

• Francois Martin is not a widely recognized architect in the context of Indian architecture.

• He might be confused with other notable architects; however, he does not have a significant association with prominent Indian landmarks.

Q71. Answer: (b) 64

Given:

Manvi and Darshan together complete the project in 40 days.

They worked together for 25 days, then Darshan left.

Manvi took 24 more days to complete the remaining work.

Calculation:

Work rate of Manvi and Darshan together:

=> M + D = 1/40

Work done in 25 days together:

=> 25 × (M + D) = 25/40 = 5/8

Remaining work after 25 days:

=> Remaining work = 1 - 5/8 = 3/8

Manvi completes (3/8) of the work in 24 days:

=> M = (3/8) / 24 = 1/64

Time taken by Manvi alone to complete the project:

=> 1/M = 64 days

Therefore Manvi alone can complete the project in 64 days.

Q72. Answer: (c) Many of these satellite orbits are also sun-synchronous

The correct answer is Many of these satellite orbits are also sun-synchronous

Key Points

• Geostationary satellites orbit the Earth in such a way that they remain fixed over one point on the equator.

• They are not sun-synchronous, which refers to satellites that maintain a constant angle with the Sun, typically in lower orbits, like those used for Earth observation.

• Geostationary satellites must orbit the Earth at an altitude of about 35,786 km (approximately 36,000 km) above the equator.

• This specific altitude allows them to match the Earth's rotational period and stay fixed over one spot.

• Geostationary satellites orbit the Earth at the same rotational speed as the Earth (once every 24 hours) and in the same direction, allowing them to remain fixed over a specific point on the Earth's equator.

Q73. Answer: (c) Akhnoor fort

The correct answer is Akhnoor fort

Key Points

• Akhnoor Fort is on Chenab River's right bank (formerly named Asikni).

• Construction was initiated in 1762 CE by Raja Tegh Singh and completed in 1802 by his successor, Raja Alam Singh.

• Maharaja Ranjeet Singh crowned Maharaja Gulab Singh on Jia Pota ghat at the fort on Chenab's riverbank on 17th June 1822.

Additional Information

Forts	States
Hari Parbat fort, Bahu Fort	Jammu & Kashmir

Q74. Answer: (d) Past

The logic followed here is:

Logic: Temporal relationships.

Here,

Predict : Future → Predict is an action related to anticipating the Future.

Similarly,

Recall : Past → Recall is an action related to remembering the Past.

Hence, the correct answer is "Option 4".

Q75. Answer: (b) Jh

The logic followed here is:

Option 1) Yb

Option 2) Jh

Option 3) Pk

Option 4) Tg

Thus, out of all the options 'Jh' is the odd one out.

Hence, "Option 2" is the correct answer.

Q76. Answer: (d) √3

Given:

Solve the given equation: (3 + √6)/(5√3 - 2√12 - √32 + √50) = ?

Formula Used:

Rationalize the denominator and simplify.

Calculation:

First, simplify the terms in the denominator:

√{12} = √{4 × 3} = 2√{3}

√{32} = √{16 × 2} = 4√{2}

√{50} = √{25 × 2} = 5√{2}

So the denominator becomes:

5√{3} - 2(2√{3}) - 4√{2} + 5√{2}

5√{3} - 4√{3} + 1√{2}

√{3} + √{2}

Now, the expression is:

(3 + √6)/(√3 + √2)

To rationalize the denominator, multiply by the conjugate:

(3 + √6)(√3 - √2)/(√3 + √2)(√3 - √2)

The denominator becomes:

(√{3} + √{2})(√{3} - √{2}) = (√{3})² - (√{2})²

= 3 - 2

= 1

The numerator becomes:

(3 + √{6})(√{3} - √{2})

= 3√{3} - 3√{2} + √{6}√{3} - √{6}√{2}

= 3√{3} - 3√{2} + √{18} - √{12}

= 3√{3} - 3√{2} + 3√{2} - 2√{3}

= 3√{3} - 2√{3}

= √3

Therefore, the expression simplifies to: √3

The correct answer is option 4.

Q77. Answer: (d) A

The logic followed here is:

=> 10

=> 6 + 4 = 10

=> 1 + 5 + 3 + 1 = 10

Similarly,

=> 4 + ? + 5 = 10 => ? = 10 - 9 => ? = 1, 1 is the position value of A, so "? = A*".*

Hence, "Option 4" is the correct answer.

Q78. Answer: (c) Ctrl+Alt+ V

The Correct Answer is Ctrl + Alt + V

Key Points

• In Microsoft applications, you can invoke the "Paste Special" dialog box by using the combination of Ctrl + Alt + V keys.

• Paste Special: The Paste Special command is used when you want to specify how the data you paste into a cell or range is formatted, or if you want to paste only specific aspects of the data you are copying. For example, you might only want to paste the formatting from a copied cell, or perhaps only the formula.

• Key combination: You can access this feature by pressing Ctrl + Alt + V after copying or cutting the data you want to paste. This opens the "Paste Special" dialog box which gives you a variety of options for how you wish to paste your data.

• Diverse Options: The options available in the Paste Special dialog box vary depending on the application you are using. Typically, these options include choices like paste values only, paste formatting only, transpose (which switches rows to columns and vice versa), multiply (which multiplies copied data by data in the pasted location), and more.

• Common across MS Applications: The Paste Special feature, including its keyboard shortcut, is common across multiple Microsoft Office Applications including Word, Excel, PowerPoint, etc.

• Difference between Paste and Paste Special: The difference between the regular paste function and the Paste Special function is in the customization. While a regular paste (Ctrl + V) will simply duplicate all of the data as it is, Paste Special allows you to control what aspects of the data you want to duplicate.

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Additional Information

• The keyboard shortcut Ctrl + Alt + P closes all open documents in Adobe Photoshop, except for the current document

• Ctrl+V is a keyboard shortcut that pastes the contents of the clipboard into a computer document

• Ctrl+Alt+C is a keyboard shortcut that inserts the copyright symbol

Q79. Answer: (d) TCS

The correct answer is TCS

Key Points

• Tata Consultancy Services (TCS) was the second most valued firm on the stock exchanges in 2018 with a market cap of Rs 7.81 lakh crore.

• The company's consistent growth and strong financial performance were driven by its leadership in the information technology (IT) services sector.

• TCS's global presence, diversified client base, and focus on innovation helped it maintain its position as a leading player in the IT industry.

Additional Information

• Reliance Industries (RIL)

• RIL became the first Indian company to cross the Rs. 10 lakh crore mark in market capitalization.

• This milestone highlighted the company's rapid growth and expansion in various sectors, including energy, petrochemicals, retail, and technology.

• The company's strong financial performance, coupled with its strategic investments and innovative initiatives, contributed to its meteoric rise in market value.

Q80. Answer: (d) 3

According to the given Venn diagram:

The shaded area shows the "total number of students who have joined more than two clubs".

Region 2 => Science club + Sports club + Drama club → 3 clubs

Region 1 => Debate club + Sports club + Drama club → 3 clubs

So, the total number of 'students who have joined more than two clubs' = (2 + 1) → 3.

Hence, the correct answer is "Option 4".

Important PointsRegion 6 => Sports club + Debate club → 2 clubs

Region 4 => Debate club → 1 clubs

Region 3 => Sports club + Drama club → 2 clubs

Here, Region 6, 4 and 3 are incorrect because as the question more than two clubs are required, so the number of the clubs should be either 3 or 4.

Q81. Answer: (c) Mauryan

The correct answer Mauryan

Key Points

• The famous Buddhist structure, Dhamekh Stupa was originally constructed during the Mauryan dynasty.

• The Mauryan emperor Ashoka, a devout Buddhist, is credited with building the stupa over the site where Buddha preached his first sermon.

• The Mauryan dynasty ruled India from the 4th to the 2nd centuries BCE.

• It was under the reign of Emperor Ashoka that Buddhism flourished and spread throughout the Indian subcontinent.

• Ashoka was a devout Buddhist and undertook a series of religious pilgrimages.

• One of these pilgrimages led him to Sarnath, near Varanasi, where Buddha had delivered his first sermon.

• To commemorate this significant event, Ashoka ordered the construction of the Dhamekh Stupa.

• The stupa is a large, bell-shaped structure that is believed to house a portion of Buddha's relics.

• The Dhamekh Stupa is a magnificent example of Mauryan architecture and is considered one of the most important Buddhist sites in India.

• It is a UNESCO World Heritage Site and attracts thousands of pilgrims and tourists every year.

Q82. Answer: (d) 135^?

Given:

The diagonals of a quadrilateral ABCD bisect each other. In this quadrilateral, if angle A = 45^? then angle B = ?

Formula used:

If the diagonals of a quadrilateral bisect each other, the quadrilateral is a parallelogram.

In a parallelogram, opposite angles are equal and adjacent angles sum up to 180?.

Calculation:

Given angle A = 45^?

angle A + angle B = 180^?

=> 45^? + angle B = 180^?

=> angle B = 180^? - 45^?

=> angle B = 135^?

Therefore The correct answer is option (4).

Q83. Answer: (c) Antarctica

The correct answer is Antarctica

Key Points

• Mount Vinson is located in Antarctica:

• Mount Vinson is the highest peak in Antarctica and is part of the Vinson Massif in the Ellsworth Mountains.

• The Vinson Massif is in the Sentinel Range, about 1,200 kilometres from the South Pole.

• Height: Mount Vinson is 4,892 meters tall.

• The Vinson Massif was discovered in 1958 by U.S. Navy aircraft.

• The Vinson Massif was named after Carl G. Vinson, a U.S. congressman from Georgia who supported Antarctic exploration.

• The first recorded ascent of Mount Vinson was in 1966 by an American team led by Nicholas Clinch

Additional Information

• The Highest Mountain on every continent are-:

S NO	Mountain	Height	Location	Continent
1	Mt Elbrus	5642	Russia near Georgia	Europe
2	Aconcagua	6960	Argentina	South America
3	Kilimanjaro	5895	Tanzania	Africa
4	Mt. Everest	8850	Nepal near China border	Asia
5	Mount McKinley	6168	Alaska, USA	North America
6	Mount Kosciuszko	2228	South Wales	Australia
7	Vinson Massif	4897	Antarctica	Antarctica

Q84. Answer: (b) Haryana

The correct answer is Haryana

Key Points

• The Haryana Government has launched 7-Star Gram Panchayat Rainbow scheme to give star rankings to its panchayats based on 7 social parameters.

• The 7-Star Rainbow Scheme was launched by the Hon'ble Chief Minister, Haryana on 26th January 2018 with a focus on improving the working of Gram Panchayats in Haryana.

• In Haryana, there are 6204 Gram Panchayats, 140 Panchayat Samitis, and 21 Zila Parishads.

• Gram Panchayats works under various constraints and limitations, still, there are many outstanding performers among Panchayats all over Haryana.

• To build models and to nurture Gram Panchayats, such panchayats need to be identified and encouraged.

• Gram Panchayats will be assessed on their performance in the following parameters which would be recognized with the “Star”.

I. Sex Ratio

II. Education and No Dropouts

III. Hygiene and Sanitation

IV. Peace and Harmony

V. Environment Preservation

VI. Good Governance

VII. Social Participation

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• | Parameter | Colour |

Sex Ratio	Pink Colour
Education and No Dropouts	Sky Blue Colour
Hygiene and Sanitation	White Colour
Peace and Harmony	Saffron Colour
Environment Preservation	Green Colour
Good Governance	Golden Colour
Social Participation	Silver Colour

Q85. Answer: (a) UK

The correct answer is the UK

Key Points

• The world's first TV channel dedicated to human rights was launched in London(UK) in mid-January 2019.

• The channel is run by the International Observatory of Human Rights (IOHR), a non-governmental organization based in London.

• The IOHR uses the netgem.tv interactive platform to run the channel.

• The IOHR's focus is on exposing human rights violations.

Q86. Answer: (b) Year 4

Given:

Year 1: Quantity = 400 containers, Value = Rs. 340 crore

Year 2: Quantity = 280 containers, Value = Rs. 270 crore

Year 3: Quantity = 350 containers, Value = Rs. 280 crore

Year 4: Quantity = 450 containers, Value = Rs. 350 crore

Formula used:

Value per container = Value / Quantity

Calculation:

=> Year 1: Rs. 340 crore / 400 containers = Rs. 0.85 crore per container

=> Year 2: Rs. 270 crore / 280 containers = Rs. 0.964 crore per container

=> Year 3: Rs. 280 crore / 350 containers = Rs. 0.8 crore per container

=> Year 4: Rs. 350 crore / 450 containers = Rs. 0.778 crore per container

Therefore The value per container was the minimum in Year 4.

Q87. Answer: (c) 23%

Given:

Number of candidates from MP in 2015 = 400

Total number of candidates from MP for all years (2012-2016) = 250 + 280 + 240 + 400 + 540 = 1710

Formula used:

Percentage = (Candidates from MP in 2015 / Total candidates from MP) × 100

Calculation:

=> Percentage = (400 / 1710) × 100

=> Percentage ≈ 23.39%

Therefore The percentage is approximately 23%.

Q88. Answer: (d) 10 : 9

Given:

Production of rice in Bihar in 2016 = 250 hundred tonnes

Production of rice in UP in 2017 = 225 hundred tonnes

Formula used:

Ratio = Production in Bihar (2016) / Production in UP (2017)

Calculation:

=> Ratio = 250 / 225

=> Ratio = 50 / 45

=> Ratio = 10 / 9

Therefore The required ratio is 10:9.

Q89. Answer: (d) Rs. 5.9 crore

Given:

Angle for Textiles = 58°

Angle for Cereals = 64°

Total angle for importing Textiles and Cereals = 58° + 64° = 122°

Amount spent on Textiles and Cereals = Rs. 2 crore

Total angle in a circle = 360°

Formula used:

Total amount spent on all imports = (Amount spent on Textiles and Cereals / Angle for Textiles and Cereals) × Total angle in a circle

Calculation:

=> Total amount = (2 crore / 122) × 360

=> Total amount ≈ (2 / 122) × 360

=> Total amount ≈ 5.90 crore

Therefore The total amount spent on importing all the various products by the country is approximately Rs. 5.90 crore.

Q90. Answer: (d) Father

Decoding symbols:

A → (is to any relationship) with B					
Symbol	1 → 2	1 → 3	1 → 4	2 → 3	4 → 3
Meaning	Father	Brother	Son	Nephew	?

Given:

So, 4 can be either father or mother of 3.

As out of all the options, father is given therefore, 4 is the father of 3.

Hence, the correct answer is "Option 4"

Q91. Answer: (c) A

Given: 5 students, A, B, C, D and E are standing in a queue during school assembly.

Behind means 'being exactly next to someone's back' and ahead does not mean 'exactly in front of'.

1) A is standing ahead of C but not ahead of B.

Here, A is standing somewhere ahead of C but not immediately ahead.

Here, B can be standing immediate ahead or somewhere ahead of A.

Students				
	Case 1	Case 2	Case 3	Case 4
1	B		B	B
2		B	A	A
3	A	A		
4				C
5	C	C	C	

2) C is standing behind D.

Here, C is standing immediate behind D.

Students				

	Case 1	Case 2	Case 3	Case 4
1	B		B	B
2		B	A	A
3	A	A		D
4	D	D	D	C
5	C	C	C	

3) E is not standing behind B.

Here, E is standing somewhere ahead of B.

As there is no possible position for E in case 1, 3, and 4, therefore are eliminated.

Students	
	Case 2
1	E
2	B
3	A
4	D
5	C

Thus, according to the final arrangement A is standing at the third position.

Hence, "Option 3" is the correct answer.

Q92. Answer: (d) Daughter-in-law

Given:

1) I am the only daughter of X, and Y is my husband Z's sister's only daughter.

2) D is the maternal grandfather of Y.

Thus, I am the daughter-in-law of D.

Hence, the correct answer is "Option 4".

Q93. Answer: (d) 12

The logic followed here is:

3 × 3 × 5 × 2 = 15 × 6

90 = 90 (LHS = RHS)

And,

2 × 4 × 6 × 1 = 12 × 4

48 = 48 (LHS = RHS)

Similarly,

2 × 3 × 4 × 2 = 4 × ?

48 ÷ 4 = ?

12 = ?

Hence, "Option 4" is the correct answer.

Q94. Answer: (d) 8^(th)

Given letters: B, A, R, and E

The words that can be formed using the given letters arranged in the order in which they would appear in an English dictionary:

1) A B E R

2) A B R E

3) A E B R

4) A E R B

5) A R B E

6) A R E B

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7) B A E R
8) B A R E
Thus, the combination 'BARE' will be at the 8th position.
Hence, "Option 4" is the correct answer.

Q95. Answer: (b) 315

The logic followed here is: Power = Number of circles + 1
=> a^((1+1)) + b(2+1) + c(3+1)
=> a2 + b3 + c4
Similarly,
=> 3(2+1) + 4(3+1) + 2(4+1)
=> 33 + 44 + 25
=> 27 + 256 + 32
=> 315
Hence, "Option 2" is the correct answer.

Q96. Answer: (c) W

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

Q97. Answer: (d) KIZB

The logic followed here is:
LIVE is written as OREV
Similarly,
PRAY will be written as
Hence, "Option 4" is the correct answer.

Q98. Answer: (d) 74

The logic followed here is:
Hence, "Option 4" is the correct answer.
Alternate Method

Q99. Answer: (a) [figure]

The diagram that best represents the relationship between Females, Wife, and Mothers is shown below :
Mothers and wife are the subset of the female's category.
Some wife can be mothers.
Hence, "Option 1" is the correct answer.

Q100. Answer: (a) 25

The logic followed here is:
=> (6 + 2)2 = 64
=> 8^2 = 64
=> 64 = 64 (LHS = RHS)
And,
=> (4 + 3)2 = 49
=> 72 = 49
=> 49 = 49 (LHS = RHS)
Similarly,
=> (2 + 3)2 = ?
=> 52 = ?
=> 25 = ?
Hence, "Option 1" is the correct answer.

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