RRB NTPC CBT-I Official Paper (Held On: 30 Jan 2021 Shift 1) (Previous Year Paper)

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

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Q1. If WIRE is coded as SENA, then REPORT will be coded as?

(a) TROPER
(b) NAKLNP
(c) MAKLNP
(d) NALKNP

Q2. The given data is arranged in ascending order and its median is 17. Find the value of x.

8, 10, 12, 15, x, x + 2, 20, 25, 30, 32

(a) 19
(b) 18
(c) 17
(d) 16

Q3. Select the letter from among the given options that can replace the question mark (?) in the following series.

Z, W, T, Q, N, ?

(a) M
(b) J
(c) L
(d) K

Q4. The world's largest reef system the 'Great Barrier Reef' is situated in which sea?

(a) Coral Sea
(b) Beaufort Sea
(c) Celtic Sea
(d) Caspian Sea

Q5. Which system has been adopted by the Reserve Bank of India for note issue?

(a) Proportional Reserve System
(b) Fixed Fiduciaiy System
(c) Gold Reserve System
(d) Minimum Reserve System

Q6. Which Indian Prime Minister translated the epic Telugu novel into Hindi which is named as 'Sahasra Phan'?

(a) I. K. Gujral
(b) Manmohan Singh
(c) V. P. Singh
(d) P. V. Narasimha Rao

Q7. Which of the following teams won the 86^(th) Ranji Trophy title in March 2020?

(a) Saurashtra
(b) Baroda
(c) Vidarbha

(d) Mumbai

Q8. In Africa, Kilimanjaro is:

(a) a volcanic mountain
(b) the biggest grassland
(c) a longest river
(d) the densest forest

Q9. Where is one of the lead centers of Indian Space Research Organization, Satish Dhawan Space Centre located?

(a) Andhra Pradesh
(b) Karnataka
(c) Maharashtra
(d) Rajasthan

Q10. If $a + b + c = 10$ and $ab + bc + ca = 31$, find the value of $a^2 + b^2 + c^2$

(a) 35
(b) 36
(c) 34
(d) 38

Q11. 5% more is gained by selling a cow for Rs. 1,010 than what is gained by selling it for Rs. 1,000. Find the cost price (in Rs.) of the cow.

(a) 400
(b) 200
(c) 280
(d) 300

Q12. Find the sum of the mean, median and mode of the given data.

9, 35, 20, 25, 25, 15, 25

(a) 72
(b) 47
(c) 75
(d) 50

Q13. Select the option that is related to the third term in the same way as the second term is related to the first term.

Daman and Diu : Daman :: Andaman and Nicobar : ?

(a) Garacharma
(b) Nicobar
(c) Indira Point
(d) Port Blair

Q14. Construction of the Hawa Mahal at Jaipur was inspired by the:

(a) Lake Palace at Udaipur
(b) City Palace at Jaipur
(c) Jal Mahal at Jaipur
(d) Khetri Mahal at Jhunjhunu

Q15. If the cost price of 15 notebooks is equal to the selling price of 12 notebooks, then the percentage gain or loss is _____.

(a) 25% loss
(b) 20% loss
(c) 20% gain
(d) 25% gain

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Q16. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Some flats are expensive.
2. Some expensive are villas.

Conclusions:

1. Some villas are expensive.
2. No flat is Villa.
3. Some villas are flats.
4. All villas are expensive.

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

Q17. In a triangle the ratio of angles is 2 : 3 : 4. Find the difference between the greatest and the smallest angle.

(a) 60°
(b) 40°
(c) 0°
(d) 20°

Q18. The numerator of a fraction is 5 less than its denominator. If 2 is subtracted from the numerator and 2 is added to the denominator, the fraction becomes 2/5. Find the original fraction.

(a) 8/13
(b) 5/7
(c) 11/13
(d) 9/11

Q19. Muscovite, pegmatite and biotite are ores of:

(a) copper
(b) mica
(c) zinc
(d) iron

Q20. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Some dogs are cats.
2. No cat is rat.
3. All rats are mosquitoes.

Conclusions:

1. All cats are dogs.
2. Some rats are dogs.
3. All mosquitoes are dogs.
4. No mosquito is a dog.

(a) Only conclusion 1 follows.
(b) Only conclusion 3 follows.
(c) Only conclusion 2 follows.
(d) Only conclusion 4 follows.

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Q21. There is a square park of size 18 m in length. A road of width 3 m is constructed outside the square around it. Find the area of the road.

(a) 352 m²
(b) 250 m²
(c) 350 m²
(d) 252 m²

Q22. Find the greatest possible length that can be used to measure exactly the lengths 31/2 m and 8 3/4 m.

(a) 3/4 m
(b) 9/4 m
(c) 11/4 m
(d) 7/4 m

Q23. If the height and the radius of a solid right circular cylinder are doubled, find the percentage increase in its volume.

(a) 700%
(b) 300%
(c) 400%
(d) 600%

Q24. The Indian Parliament had passed the State Banks (Repeal and Amendment) Bill, 2017 to merge _____ subsidiary banks with the State Bank of India.

(a) eight
(b) five
(c) two
(d) four

Q25. Find the time taken by a 450 m long train travelling at the speed of 80 km/h to cross a platform of length 150 m.

(a) 27 s
(b) 24 s
(c) 25 s
(d) 28 s

Q26. An inlet pipe can fill a tank in 4 h and an outlet pipe can empty the tank in 6 h. By mistake, both the pipes are kept open. Find the number of hours in which the tank will be half-full.

(a) 10 h
(b) 8 h
(c) 6 h
(d) 12 h

Q27. Saikhom Mirabai Chanu, who has been conferred with the Rajiv Gandhi Khel Ratna Award in 2018, is a/an:

(a) Weightlifter
(b) Boxer
(c) Wrestler
(d) Archer

Q28. Eight persons A, B, C, D, E, F, G and H are sitting a around a circular table facing towards the centre (not necessarily in the same order). B sits third to the right of A. A is second to the right of C. Only two persons sits between C and E. H sits second to the left of D. F is not the neighbour of C or E.

Who is sitting third to the left of G?

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

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Q29. The lens which is thin in the middle and thick at its periphery is called a:

(a) parallel lens
(b) convex lens
(c) cylindrical lens
(d) concave lens

Q30. If a + b + c = 0, then find the value of $((a^2 + b^2 + c^2)^2)/(a^2 b^2 + b^2 c^2 + c^2 a^2)$

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

Q31. 3 cubes each with side 16 cm are joined side by side in a line. Find the surface area of the cuboid so formed.

(a) 3600 cm^2
(b) 3588 cm^2
(c) 3564 cm^2
(d) 3584 cm^2

Q32. Find the greatest possible length that can be used to measure exactly the lengths 7 m, 3 m 85 cm and 12 m 95 cm.

(a) 35 cm
(b) 65 cm
(c) 85 cm
(d) 45 cm

Q33. Where is the Valmiki National Park is located?

(a) Madhya Pradesh
(b) Arunanchal Pradesh
(c) Bihar
(d) Uttrakhand

Q34. A seven digit number 67843A2 is divisible by 11 where A is a single digit whole number. Find the value of A.

(a) 6
(b) 8
(c) 7
(d) 0

Q35. How many numbers are there between 1000 and 3000 that are completely divisible by 7?

(a) 283
(b) 281
(c) 284
(d) 286

Q36. When was the Muslim League founded?

(a) 1906
(b) 1912
(c) 1914
(d) 1917

Q37. Find the value of tan 1°. tan 2°. tan 3° _____ tan 89°

(a) 0
(b) 1
(c) $1/(\sqrt{3})$
(d) $\sqrt{3}$

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Q38. Find the value of D if 1216 - 32D = DDD is divisible by 8.

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

Q39. The forms of oaths of office for a Minister for the Union in India is contained in the:

(a) Fifth Schedule
(b) Second Schedule
(c) Third Schedule
(d) First Schedule

Q40. If $(2\sqrt{2}+\sqrt{7})/(2\sqrt{2}-\sqrt{7}) = x + y\sqrt{14}$, find the value of y.

(a) 4
(b) 15
(c) 0
(d) 19

Q41. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the Ans statement.

Statement:

1. In the modern era, lack of water availability is a major problem especially in summer times.

Conclusions:

1. Shortage of water is the major cause for many animal deaths in summer.
2. There is no shortage of water in winters.

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

Q42. Mona was residing at a place 'X' from 17 February 2012 to 27 April 2012. If both days are included, then for how many days was she residing at place 'X'?

(a) 71
(b) 70
(c) 69
(d) 68

Q43. The highest point of the Aravalli Range is:

(a) Om Parvat
(b) Guru Shikhar
(c) Angle Peak
(d) Kamet

Q44. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. All birds are animals.
2. Some animals are men.

Conclusions:

1. No men is animal.
2. All animals are birds.
3. Some men are animals.
4. Some men are birds.

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(a) Only conclusion 2 follows.
(b) Only conclusion 4 follows.
(c) Only conclusion 1 follows.
(d) Only conclusion 3 follows.

Q45. Simplify the given expression using BODMAS.

$4/11 \times 121/16 \times 24 (75^2 - 55^2) \times 1/100$

(a) 1726
(b) 1746
(c) 1716
(d) 1736

Q46. Find the interest (in Rs.) on Rs. 8,000 at 10% per annum compounded half yearly for 11/2 years.

(a) 1,263
(b) 1,261
(c) 1,260
(d) 1,264

Q47. What percentage of seats in the Lok Sabha is required to be won by a political party from at least three different states, to be eligible to be recognised as a national party?

(a) 10 percent
(b) 6 percent
(c) 2 percent
(d) 5 percent

Q48. A and B can finish a task in 18 days, B and C can finish the same task in 27 days. A, B and C together can finish it in 12 days. How much time A and C will finish the task?

(a) 141/2 days
(b) 131/2 days
(c) 121/2 days
(d) 151/2 days

Q49. The Santhal Revolt in India in 1855-56 was led by:

(a) Nilamber and Pitamber
(b) Alha and Udal
(c) Sidhu and Kanhu
(d) Gora and Badal

Q50. A team of 5 members is to be selected from 5 men M1, M2, M3, M4 and M5 and 6 women W1, W2, W3, W4, W5 and W6. M5 cannot be selected with W4 or M4. M2 must be selected with M5. M1 cannot be selected with M3. W6 cannot be selected with M2 or W1 or W2. W5 cannot be selected with W6 or W2 or M2.

If there are atleast three women in the team, then which of the following is a correct selection of the team?

(a) M2, W2, W4, M5, W6
(b) M2, W3, M5, M3, W2
(c) M1, W5, W4, M4, W3
(d) M1, W2, W4, W6, M3

Q51. Out of the four letter-clusters listed, three are alike in some manner and one is different. Select the odd one.

CF, OR, VX, AD

(a) CF
(b) AD
(c) OR
(d) VX

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Q52. Which article of the Indian Constitution empowers joint sitting of Lok Sabha and Rajya Sabha under certain circumstances?

(a) Article 108
(b) Article 156
(c) Article 100
(d) Article 75

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

8, 24, 48, 120, 168, ?

(a) 189
(b) 288
(c) 248
(d) 287

Q54. In India, which of the following organisations is NOT exempted from RTI Act?

(a) Aviation Research Centre
(b) Research and Analysis Wing
(c) Intelligence Bureau
(d) Competition Commission of India

Q55. According to the Public Enterprises Survey 2018-19, how many Central Public Sector Enterprises (CPSEs) were in operation in India as of 31^(st) March 2019?

(a) 249
(b) 280
(c) 339
(d) 398

Q56. IBRD and IDA are a part of the:

(a) United Nations
(b) International Labour Organization
(c) International Monetary Fund
(d) World Bank

Q57. In a class of 130 students, 15 students like maths and history, 25 students like only Hindi, 30 students like only English, 20 students like English and Hindi both, 15 students like only history and 15 students like only maths. Some students like all 4 subjects. If the total number of students who like English is 60, Hindi is 55, Maths and History is 40. then how many students like all 4 subjects?

(a) 10
(b) 15
(c) 35
(d) 25

Q58. Where was Mahatma Gandhi on the day India got Independence?

(a) Pune
(b) New Delhi
(c) Calcutta
(d) Rawalpindi

Q59. Simplify the given expression.

$9 \times 0.9 \times 0.09 \times 0.009 \times 1/0.3 \times 1/0.03 \times 1/0.003$

(a) 2.43
(b) 0.243
(c) 24.3
(d) 243

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Q60. A kite is flying with a thread of length 296 m, making an angle of elevation measuring 30° at a point of hand of a person of height 2 m from the ground. Find the height of the kite from the ground.

(a) 300 m
(b) 250 m
(c) 150 m
(d) 200 m

Q61. GUI in the context of computers stands for:

(a) Gopher Used Investigation
(b) Group User Interface
(c) Graphical User Interface
(d) Gigabyte Used in Internet

Q62. Most of the chromite deposits in India are found in:

(a) Bihar
(b) Odisha
(c) Karnataka
(d) Kerala

Q63. Select the letter from among the given options that can replace the question mark (?) in the following series.

D, I, N, S, ?

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

Q64. In 2019, who was selected as the President of the World Bank for a five-year term?

(a) Fahmeeda Amin
(b) Raghuram Rajan
(c) Jim Yong Kim
(d) David Malpass

Q65. Zinc sulphate heptahydrate (ZnSO4.7H2O) is commonly known as:

(a) white vitriol
(b) blue vitriol
(c) Gypsum
(d) Epsom salt

Q66. What least number should be added to 3500 to make it exactly divisible by 42, 49, 56 and 63?

(a) 22
(b) 28
(c) 24
(d) 26

Q67. Which is the oldest of the four Vedas?

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

Q68. What type of forests are found in the Sunderbans Delta in India?

(a) Alpine
(b) Thorny bushes
(c) Mangrove
(d) Tropical deciduous

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Q69. Which one among the following is NOT listed under 'Maharatna' companies?

(a) Shipping Corporation of India
(b) Coal India Limited
(c) Indian Oil Corporation
(d) National Thermal Power Corporation

Q70. Which of the following is NOT a Colour created from a combination of two primary Colours?

(a) Violet
(b) Green
(c) Orange
(d) Blue

Q71. A dealer sells a table for Rs. 400, making a profit of 25%. He sells another table at a loss of 10% and on the whole he makes neither profit nor loss. How much (in Rs.) did the second table cost him?

(a) 850
(b) 750
(c) 700
(d) 800

Q72. If Charger = 60, then Topper = ?

(a) 40
(b) 26
(c) 52
(d) 90

Q73. A certain sum of money amounts to Rs. 2,613 in 6 years at 5% simple interest per annum. In how many years will it amount to Rs. 3,015 at the same rate?

(a) 10 years
(b) 18 years
(c) 12 years
(d) 15 years

Q74. 1024 megabytes is equal to:

(a) 1 bite
(b) 1 kilobyte
(c) 1 gigabyte
(d) 1 decabyte

Q75. Chandrayaan I was launched using:

(a) PSLV-C46
(b) GSLV Mk-III
(c) PSLV-C11
(d) PSLV-C42

Q76. Which of the following states does NOT share its border with Bangladesh?

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

Q77. A certain sum of money is divided among A, B and C. A gets one-third of the amount. B gets thrice as much as what C gets and C gets Rs. 1,200 less than what A gets. Find the share (in Rs.) of A.

(a) 3,600
(b) 1,200
(c) 4,800

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(d) 2,400

Q78. An integrated circuit is commonly known as a:

(a) chip
(b) transistor
(c) resistor
(d) plate

Q79. How many contained nuclear explosions were conducted by India at Pokhran in May 1998?

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

Q80. Which of the following is NOT a wind musical instrument?

(a) Trumpet
(b) Shehnai
(c) Khol
(d) Saxophone

Q81. Mahatma Gandhi came to Champaran in:

(a) 1922
(b) 1917
(c) 1916
(d) 1919

Q82. Which of the following State Governments launched the plantation drive through 'Green Mahanadi Mission'?

(a) Telangana
(b) Andhra Pradesh
(c) Karnataka
(d) Odisha

Q83. Which political party was in power in England when the Cabinet Mission came to India?

(a) Liberal Party
(b) Democratic Party
(c) Conservative Party
(d) Labour Party

Q84. The headquarters of the World Bank is situated at:

(a) Paris, France
(b) The Hague, Netherland
(c) Washington DC, USA
(d) London, UK

Q85. Simplify the given expression.

(5 + 5 × 5)/(5 × 5 + 5)× (1/5÷ (1/5× 1/5))/((1/5× 1/5)÷ 1/5)-(5-1/5)× 10/2

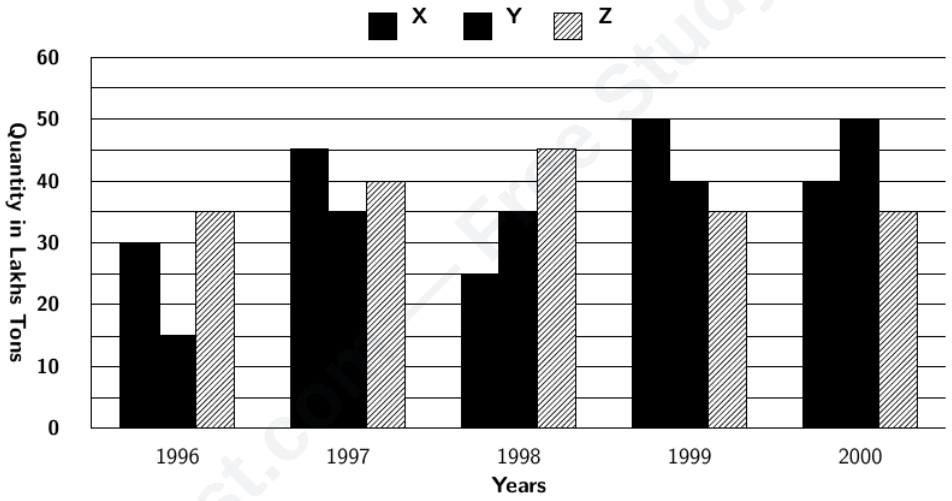
(a) 2
(b) 0
(c) 3
(d) 1

Directions

In the given graph, data is given for paper production in different years by 3 companies X, Y and Z.

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Production of Paper (in lakh tonnes) by Three Companies X, Y and Z over the Years.



Q86. Find total production by company X in all the years (in lakh tonnes).

(a) 195
(b) 190
(c) 185
(d) 180

Q87. Which company has recorded lowest range in production figures between 1996 and 2000?

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

Q88. Which company's total production is less than the average production of all the three companies put together for the given period?

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

Q89. If in the year 2000, the production increased by 5% in company X and company Y, then what would be the % increase in total production as compared to the total production reported in the graph above for the same year?

(a) 4.00%
(b) 3.40%
(c) 3.60%
(d) 4.60%

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

Saudi Arabia : Monarchy :: India : ?

(a) Monarchy
(b) Aristocracy
(c) Autocracy
(d) Democracy

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Q91. Select the combination of letters that when sequentially placed in the blanks will create a repetitive pattern.

abb-a-b--bbb

(a) babb
(b) abbb
(c) bbbb
(d) bbba

Q92. Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

1. Some dogs are cats.
2. No cat is rat.
3. All rats are mosquitoes.

Conclusions:

1. Some cats are mosquitoes.
2. No rat is dog.
3. Some mosquitoes are dogs.
4. Some cats are dogs.

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

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

Darkness : Light :: Thirst : ?

(a) Water
(b) Food
(c) Bread
(d) Well

Q94. Seven persons P, Q, R, S, T, U and W live on different floors in a building having seven floors (first floor is the lowermost floor, then second floor is above it and then so on). Only one person lives on one floor. P lives on one of the floor above S and S does not live on an odd numbered floor. Only two persons live between S and T. U lives immediately above W. Only four persons live between T and P.

Who are the neighbours of P?

(a) S and U
(b) S and R
(c) S and Q
(d) Q and R

Q95. Read the given statement and conclusions carefully and decide which of the conclusions logically follow(s) from the statement.

Statement:

In these times water pollution is a major cause of diseases.

Conclusions:

1. Water borne diseases are very deadly.
2. Generally water shortage is reported in pre-monsoon time.

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

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Q96. Nisha is the daughter of Ramkishan who is the husband of Urmila. Manisha is the sister of Urmila and the mother of Suman. Jitender is the father of Jatin who is the son of Suman. Jatin is related to Urmila as:

(a) Daughter's son
(b) Daughter's husband
(c) Sister's daughter's son
(d) Sister's husband

Q97. Each of the six persons A, B, C, D, E and F like one of six different colours, viz. red, green, blue, black, orange and white, but not necessarily in that order. Each of them also own a home in one of six different cities, viz. Delhi, Mumbai, Hyderabad, Chennai, Bangalore and Kolkata, but not necessarily in the same order.

A has a home in Delhi but he does not like orange and white colours. B does not like blue and black colours and does not live in Mumbai. F has a home in Bangalore and likes red colour. D has a home in Hyderabad and likes either blue or black colour. C likes green colour and lives in Chennai. E likes orange colour.

Who lives in Kolkata and likes white colour?

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

Q98. Select the number from among the given options that can replace the question mark (?) in the following series.

0, 24, 120, 336, ?

(a) 720
(b) 744
(c) 820
(d) 729

Q99. Six persons A, B, C, D, E and F are sitting in a row facing towards north (not necessarily in the same order). Their ages are in successive multiple of 3 from left to right end. B is second to the right of A. A is to the immediate left of E. Only three persons sit between C and F. The age of D is 18 years and the maximum. C sits to the left of E. What is the total age of A and B?

(a) 12 years
(b) 18 years

×

duplicate options found. English Question 1 options 1,2

(c) 24 years
(d) 15 years

Q100. In a class, 25 students like maths and history, 25 students like only Hindi, 30 students like only English, 20 students like English and Hindi both, 15 students like only history and 15 students like only maths. 15 students like all 4 subjects. How many total students are there in the class?

(a) 130
(b) 125
(c) 145
(d) 140

ANSWER KEY

1	d	2	d	3	d	4	a	5	d	6	d	7	a	8	a	9	a	10	d
11	b	12	a	13	d	14	d	15	d	16	c	17	b	18	a	19	b	20	d
21	d	22	d	23	a	24	b	25	a	26	c	27	a	28	b	29	d	30	c
31	d	32	a	33	c	34	b	35	d	36	a	37	b	38	b	39	c	40	a
41	c	42	a	43	b	44	d	45	c	46	b	47	c	48	b	49	c	50	c
51	d	52	a	53	b	54	d	55	a	56	d	57	a	58	c	59	d	60	c

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

SOLUTIONS

Q1. Answer: (d) NALKNP

The alphabets and their positions are:

The logic here is:

So, the WIRE is coded as SENA.

Similarly, the word REPORT is coded as NALKNP

Hence, the correct answer is 'option 4'.

Q2. Answer: (d) 16

Given:

Data arranged in ascending order 8, 10, 12, 15, x, x + 2, 20, 25, 30, 32 and its median is 17.

Formula used:

Median for arranged even number of terms = (sum of the middle two numbers)/2

Calculation:

median = 17 = (x+x+2)/2

Solving for x,

x = 17 - 1 = 16

Therefore The value of x is 16.

Q3. Answer: (d) K

The alphabets and their positions are:

The logic here is:

Hence, the correct answer is 'option 4'.

Q4. Answer: (a) Coral Sea

The correct answer is the Coral Sea.

Key Points

• The Great Barrier Reef is a site of remarkable variety and beauty.

• The reef is located off the coast of Queensland, Australia, in the Coral Sea.

• It contains the world’s largest collection of coral reefs, with 400 types of coral, 1,500 species of fish, and 4,000 types of mollusc.

• It also holds great scientific interest as the habitat of species such as the dugong (‘sea cow’) and the large green turtle, which are threatened with extinction.

Additional Information

• The Beaufort Sea- It is a marginal sea of the Arctic Ocean, located north of the Northwest Territories, the Yukon, and Alaska, and west of Canada's Arctic islands.

• The Celtic Sea- It is the area of the Atlantic Ocean off the south coast of Ireland.

• The Caspian Sea- It is the world's largest water body that is enclosed or bordered by land on all sides. Russia, Iran, Azerbaijan, Kazakhstan, and Turkmenistan touch the border of the sea.

Q5. Answer: (d) Minimum Reserve System

The correct answer is Minimum Reserve System.

Key Points

• The Minimum Reserve System is the currency issue system followed by the RBI to issue currency notes at present.

• It was adopted in 1956. The Proportional Reserve system was used to issue notes before 1956.

• The Minimum Reserve System requires the RBI to keep a minimum reserve of Rs 200 crores comprising foreign currencies, gold coins, and gold bullion.

• Out of this 200 crore, a minimum of 115 crores rupee should be in the form of Gold or gold bullion, and the rest should be in the

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form of foreign currencies.

• There is no limit for the RBI to issue currencies by keeping this minimum reserve.

Q6. Answer: (d) P. V. Narasimha Rao

The correct answer is P. V. Narasimha Rao.

Key Points

• A Telugu Novel was translated into Hindi by India's 9th Prime minister Sri PV Narasimha Rao, with the name Sahasra Phan.

• The original novel, Veyi Padagal, was written by Viswanath Satyanarayana.

• The Hindi translation, Sahasra Phan, was done in the year 1968.

Additional Information

• The novel was also translated from Hindi into Sanskrit with the same name by Prabhavati Devi.

• In 1976, Chandrakant Mehta and Mahendra Dhave translated this novel into Gujarati.

• Later, R.V.S. Sundaram translated the work into Kannada.

• In 1998, it was published in a Kannada newspaper as Nootana.

Q7. Answer: (a) Saurashtra

The correct answer is Saurashtra.

Key Points

• Saurashtra won the 86th Ranji Trophy Title by defeating Bengal.

• It was played between 9 to 13 March 2020 in Saurashtra Cricket Association Stadium, Rajkot.

• The 2019–20 Ranji Trophy was the 86th season of the Ranji Trophy, which took place between December 2019 and March 2020.

Additional Information

• The Ranji Trophy is a domestic first-class cricket championship played in India.

• The competition currently consists of 38 teams, with all 28 states in India and four of the eight union territories having at least one representation.

• The competition is named after the first Indian cricketer who played international cricket, Ranjitsinhji, who was also known as Ranji.

• The very first match of the competition was held on 4 November 1934 between Madras and Mysore at the Chepauk ground in Madras.

Q8. Answer: (a) a volcanic mountain

The correct answer is a volcanic mountain.

Key Points

• Mount Kilimanjaro is a dormant volcano in Tanzania, Africa.

• It has three volcanic cones: Kibo, Mawenzi, and Shira.

• It is the highest mountain in Africa.

Additional Information

Important volcanoes around the world

Volcano	Country/Continent
Ojos del Salado	Argentina/Chile (Highest active volcano on Earth)
Cayambe	Ecuador
Mount Elbrus	Russia
Mount Sidley	Antarctica
Mount Fuji	Japan
Semeru	Indonesia (Java)

Q9. Answer: (a) Andhra Pradesh

The correct answer is Andhra Pradesh.

Key Points

• Indian Space Research Organization's Satish Dhawan Space Centre is located at Nellore District, Andhra Pradesh.

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• Satish Dhawan Space Centre (SDSC), Sriharikota, the Spaceport of India, is responsible for providing Launch Base Infrastructure for the Indian Space Programme.

Additional Information

ISRO Centers	Location
Vikram Sarabhai Space Centre (VSSC)	Trivandrum
Liquid Propulsion Systems Centre (LPSC)	Thiruvananthapuram
Space Applications Centre (SAC)	Ahmedabad
National Remote Sensing Centre (NRSC)	Hyderabad
Department of Space and ISRO HQ	Bengaluru
Indian Institute of Remote Sensing (IIRS)	Dehradun

Q10. Answer: (d) 38

Given:

a + b + c = 10

ab + bc + ca = 31

Identity used:

(a + b + c)2 = a2 + b2 + c2 + 2(ab + bc + ca)

Calculation:

Using the mentioned identity

10^2 = a2 + b2 + c2 +2(31)

a2 + b2 + c2 = 100 - 62 = 38

Therefore The value of a2 + b2 + c^2 is 38

Q11. Answer: (b) 200

Given:

5% more is gained by selling a cow for Rs. 1,010 than what is gained by selling it for Rs. 1,000.

Formula used:

Profit = (selling price - cost price)/(cost price)× 100

Calculation:

Let the cost price be x.

Then,

(1010-x)/x-(1000-x)/x=5/100

Solving for x,

10/x=0.05

x=10/0.05=200

Therefore The cost price (in Rs.) of the cow is 200.

Q12. Answer: (a) 72

Formula used:

Mean = (sum of observations)/(no. of observations)

Calculation:

Mean = (9+35+20+25+25+15+25)/7=22

Arranging the data in ascending order - 9, 15, 20, 25, 25, 25, 35.

Therefore, the median is 25.

Mode is the observation with highest frequency. Hence the mode of the given data is 25.

Therefore The sum of the mean, median and mode of the given data is 22 + 25 + 25 = 72.

Q13. Answer: (d) Port Blair

Given: Daman and Diu : Daman :: Andaman and Nicobar : ?

Logic = Islands : Capital city

As we know that, Daman is the capital city of the Daman and Diu islands.

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Similarly the capital city of Andaman and Nicobar islands (a union territory of India in the Bay of Bengal) is 'Port Blair'.

Hence, the correct answer is 'option 4'.

Q14. Answer: (d) Khetri Mahal at Jhunjhunu

The correct answer is Khetri Mahal at Jhunjhunu.

Key Points

• Hawa Mahal at Jaipur was inspired by Khetri Mahal or the Wind Palace in Jhunjhunu, Rajasthan.

• It was built by Maharaja Sawai Pratap Singh, the grandson of Maharaja Sawai Jai Singh, who was the founder of the city of Jaipur.

• It was built from red and pink sandstone.

Additional Information

Famous places in Rajasthan

Amber Fort	Jaipur
Jal Mahal	Jaipur
Umed Bhawan Palace	Jodhpur
Mehrangarh Fort	Jodhpur
Lake Pichola	Udaipur

Q15. Answer: (d) 25% gain

Given:

Cost price of 15 notebooks = Selling price of 12 notebooks.

Formula used:

percentage change = (selling price - cost price)/(cost price)× 100=25%

Calculation:

Let the cost price of one notebook be Rs. 100.

Then, the cost price for 15 notebooks is 15 × 100 = Rs. 1500.

This means that the 12 notebooks are sold at Rs. 1500 when the cost price for 12 notebooks is Rs. 1200.

percentage change = (1500-1200)/1200× 100=25%

Therefore There is a gain of 25%.

Q16. Answer: (c) Only conclusion 1 follows.

From given statements, we have the Venn diagram as:

Thus, combining both the statements, we get,

Next, we will check the conclusions as:

1. Some villas are expensive: Since, we have some expensive are villas and so some villas are expensive. This is true.

2. No flat is Villa: Since some flats are expensive and some expensive are villas. So, some flats are villas is possible. This is not true.

3. Some villas are flats: Since some flats are expensive and some expensive are villas. So, this is not true.

4. All villas are expensive: Since some expensive are villas and some villas are expensive but not all. This is not true.

Hence, only 'conclusion I' is true.

Q17. Answer: (b) 40°

Given:

In a triangle the ratio of angles is 2 : 3 : 4.

Concept used:

The sum of all three angles of a triangle is 180°.

Calculation:

Let the three angles be 2x, 3x and 4x.

Then, 2x + 3x + 4x = 180

Solving for x,

x=180/9=20°

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Therefore The difference between the greatest and the smallest angle is (4×20 - 2×20) = 40°.

Q18. Answer: (a) 8/13

Calculation:

Let the numerator of the original fraction be x.

Then, the denominator is 'x+5'

Then, (x-2)/(x+5+2)=2/5

Solving for x,

5x -10 = 2x +14

x=24/3=8

Therefore The original fraction is 8/13.

Q19. Answer: (b) mica

The correct answer is mica.

Key Points

• Muscovite, pegmatite and biotite are ores of mica.

• Muscovite is a hydrated phyllosilicate mineral of aluminium and potassium with formula KAl2(AlSi3O10)(FOH)2, or (KF)2(Al2O3)3(SiO2)6(H2O).

• Pegmatite is an igneous rock and is composed of quartz, feldspar, and mica, having a similar silicic composition as granite.

• Biotite is a common group of phyllosilicate minerals with the approximate chemical formula K2AlSi3O10.

Additional Information

• Minerals and their ores

Copper	**chalcocite, covellite, chalcopyrite**
Zinc	sphalerite, zincite, franklinite, calamine
Iron	hematite, magnetite, limonite, siderite

Q20. Answer: (d) Only conclusion 4 follows.

From the given statements, we draw the Venn diagram as:

Thus, combining the statements, we get,

Next, we will check all the conclusions as:

1. All cats are dogs: Since some dogs are cats and so some cats are dogs but not all. This is not true.

2. Some rats are dogs: Since no cat is rat and some dogs are cats. So, no dog is a rat. This is not true.

3. All mosquitoes are dogs: Since all rats are mosquitoes and and no cat is a rat. This is not true.

4. No mosquito is a dog: Since no cat is rat and all rats are mosquitoes. So no mosquito is a cat and also no mosquito is a dog. This is true.

Hence, only 'conclusion 4' is true.

Q21. Answer: (d) 252 m²

Given:

Length = 18 m

A road of width 3 m is constructed outside the square around it.

Formula used:

Area of a square = length × length

Calculation:

Area of the park = 18 × 18 = 324 m2

If the width of the road is 3 m then the length of the outer boundary of the road is 18 + 3 + 3 = 24 m.

Area within the outer boundary of the road = 24 × 24 = 576 m²

Therefore The area of the road is 576 - 324 = 252 m2

Q22. Answer: (d) 7/4 m

Given:

Lengths 31/2 m and 8 3/4 m.

Formula used:

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

Calculation:

Here, 31/2 =7/2 m and 8 3/4 = 35/4 m

HCF of the numerators = HCF(7,35) = 7

LCM pf the denominators = LCM(2,4) = 4

HCF of the two fractions = 7/4

Therefore The greatest possible length that can be used to exactly measure the lengths is 7/4 m.

Q23. Answer: (a) 700%

The correct answer is 700%.

Key Points

• The formula for the volume of a right circular cylinder πr^2h;

• where π= 22/7,

• r= radius of the cylinder, and

• h= height.

• The volume of the original cylinder is πr^2h.

• The volume of the new cylinder will be $\pi(2r)^2(2h)= \pi 4r^2 2h= 8\pi r2h$.

• Increment in volume = $8\pi r^2h- \pi r2h= 7\pi r2h$.

• Percentage increase= $(7\pi r2h/\pi r2h)x100 = 700$ %

Q24. Answer: (b) five

The correct answer is five.

Key Points

• The State Banks (Repeal and Amendment) Bill, 2017 seeks to repeal the State Bank of India (Subsidiary Banks) Act, 1959, the State Bank of Hyderabad Act, 1956.

• These Acts merged the following subsidiary banks of SBI-

• State Bank of Bikaner

• State Bank of Mysore

• State Bank of Patiala

• State Bank of Travancore

• State Bank of Hyderabad

• Source- https://prsindia.org/billtrack/the-state-banks-repeal-and-amendment-bill-2017

Additional Information

• About SBI-

• Established- 1 July 1955

• Headquarters- Mumbai, Maharashtra

• Chairperson- Dinesh Kumar Khara (Feb 2022)

Q25. Answer: (a) 27 s

Given:

A 450 m long train travelling at the speed of 80 km/h crosses a platform of length 150 m.

Formula used:

Time taken = (distance traveled)/speed

Calculation:

Time taken = ((450+150)×60×60)/80×1000=27s

Therefore The time taken by a 450 m long train travelling at the speed of 80 km/h to cross a platform of length 150 m is 72 seconds.

Q26. Answer: (c) 6 h

Given:

An inlet pipe can fill a tank in 4 h and an outlet pipe can empty the tank in 6 h.

Formula used:

If a task is finished in x hours, the in an hour 1/x of the task is finished.

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Calculation:

The inlet pipe can filled 1/4 of the volume of the tank in an hour and the outlet pipe can empty 1/6 the tank in an hour.

Therefore, if both the pipes are open, then in one hour the tank filled upto 1/4-1/6=1/12 of the total volume.

Therefore The number of hours in which the tank will be half-full is 12/2=6 hours.

Q27. Answer: (a) Weightlifter

The correct answer is Weightlifter.

Key Points

• Saikhom Mirabai Chanu is an Indian weightlifter.

• She is the winner of the silver medal at the 2020 Tokyo Olympics in the Women's 49 kg category.

• She belongs to Nongpok Kakching village in Manipur's Imphal East district.

Additional Information

Sports	Men	Women
Boxer	Amit Panghal, Shiva Thapa, Vijendra Singh, Satish Kumar	Mary Kom, Lovlina Borgohain, Simranjeet Kaur
Wrestler	Ravi Dahiya, Sushil Kumar, Yogeshwar Dutt	Vinesh Phogat, Sakshi Malik, Babita Kumari
Archer	Atanu Das, Pravin Jadhav	Deepika Kumari, Dola Banerjee

Q28. Answer: (b) D

Given: Eight persons A, B, C, D, E, F, G and H are sitting a around a circular table facing towards the centre.

According to the given statement, we have:

1) B sits third to the right of A.

2) A is second to the right of C.

3) Only two persons sits between C and E.

4) F is not the neighbour of C or E.

5) H sits second to the left of D.

Thus, the final sitting arrangement is:

Hence, 'D' is sitting third to the left of G.

Q29. Answer: (d) concave lens

The correct answer is a concave lens.

Key Points

• The concave lens is a type of lens that is thin in the middle but thick at its periphery.

• A concave lens is also called diverging lens meaning that it spreads out light rays that have been refracted through it.

• A concave lens is used to correct short-sightedness (myopia) and is also used in binoculars, telescopes, cameras, flashlights.

Additional Information

• Convex lens-

• It is thick in the middle and thin at its periphery.

• It is also called converging lens meaning that it will focus all the rays of lights (coming from infinity) at its focus.

• A convex lens is used to correct farsightedness. It is also used as a simple reading lens.

Q30. Answer: (c) 4

Shortcut Trick

let a = 1, b = 1, c = -2

So,

$((a^2 + b^2 + c^2)^2)/(a^2 b^2 + b^2 c^2+c^2a^2)$

Numerator:

$(a^2 + b^2 + c^2)^2 = (1^2 + 1^2 + (-2)^2)^2 = (1 + 1 + 4)^2 = 6^2 = 36$

Denominator:

$a^2b^2 + b^2c^2 + c^2a^2$

$= 1^2.1^2 + 1^2.(-2)^2 + (-2)^2.1^2$

= 1 × 1 + 1 × 4 + 4 × 1 = 1 + 4 + 4 = 9

So, required answer = 36/9 = 4

Therefore The correct answer is option (3).

Alternate Method

Given:

a + b + c = 0

Concept Used:

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$

Calculation:

=> We have, a + b + c = 0

=> Squaring both the sides, we get

=> a2 + b2 + c2 + 2(ab + bc + ca) = 0

=> a2 + b2 + c2 = –2(ab + bc + ca) → (1)

=> Now to find the value, $((a^2 + b^2 + c^2)^2)/(a^2 b^2 + b^2 c^2+c^2a^2)$

=> Putting the value of (1), we get

=> $((-2(ab+bc+ca))^2)/(a^2b^2+b^2c^2+c^2a^2)$

=> $(4(a^2b^2+b^2c^2+c^2a^2))/(a^2b^2+b^2c^2+c^2a^2)=4$

Therefore, the required value of $((a^2 + b^2 + c^2)^2)/(a^2 b^2 + b^2 c^2+c^2a^2)$ is 4

Q31. Answer: (d) 3584 cm²

Formula used:

Surface area of a cuboid = 2(l × b + b × h + l × h), where l, b and h are the length, breadth and height, respectively.

Calculation:

Length, breadth and height of the cuboid formed are 16×3=48cm, 16cm and 16cm, respectively.

Surface area of the cuboid = 2(48 × 16 + 48 × 16 + 16 × 16) = 3584 cm2

Therefore The surface area of the cuboid so formed is 3584 cm2

Q32. Answer: (a) 35 cm

Given:

Lengths 7 m, 3 m 85 cm and 12 m 95 cm.

Concept used:

Highest common factor

Calculation:

Here, 7 m = 700 cm, 3 m 85 cm = 385 cm and 12 m 95 cm = 1295 cm

HCF of 700, 385 and 1295 = 35

Therefore The greatest possible length that can be used to measure exactly the lengths 7 m, 3 m 85 cm and 12 m 95 cm is 35 cm.

Q33. Answer: (c) Bihar

The correct answer is Bihar.

Key Points

• Valmiki National Park is a Tiger Reserve in the West Champaran District of Bihar, India.

• It is the only national park in Bihar.

• The national park is spread across Nepal as well and in Nepal, it is called Chitwan National Park.

Additional Information

State	National Park
Madhya Pradesh	Kanha, Bandhavgarh, Panna, Satpura
Arunachal Pradesh	Namdapha, Mouling
Uttarakhand	Corbett, Nanda Devi, Valley of Flowers, Rajaji, Gangotri

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Q34. Answer: (b) 8

Concept used:

For a given number to be divisible by 11, the difference between the sums of the first alternative digits and the second alternative digits must be divisible by 11.

Calculation:

Sum of first alternative digits = 6+8+3+2 = 19

Sum of second alternative digits = 7+4+A = 11 + A

Difference = 19 - (11 + A) = 8 - A

Since difference must be divisible by 11 and A is a single digit whole number, A = 8.

Therefore The value of A is 8.

Q35. Answer: (d) 286

Formula used:

n^(th) term of an A.P. with common difference d and first term a = a+(n-1)d

Calculation:

First number between 1000 and 3000 that is divisible by 7 is 1001 and the last number in the same range, divisible by 7 is 2996.

The numbers divisible by 7, from 1001 to 2996 are in an arithmetic progression with common difference as 7.

Therefore, the last nth term can be written as 2996=1001+(n-1)7

Solving for n,

2996=1001+7n-7

n=2002/7=286

Therefore The number of numbers between 1000 and 3000 that are completely divisible by 7 is 286

Q36. Answer: (a) 1906

The correct answer is 1906.

Key Points

• The All-India Muslim League was a political party established in 1906 in British India.

• The All-India Muslim League is popularly called the Muslim League.

• It was founded by Nawab Khwaja Salimullah on 30 December 1906 at Dacca, British India (now Dhaka, Bangladesh)

• The party was primarily formed due to the need for the political representation of Muslims in British India.

Q37. Answer: (b) 1

Formula used:

tan θ = cot (90 - θ)

tan θ × cot θ = 1

Calculation:

tan 1°. tan 2°. tan 3° ..... tan 89°

=> tan 1° × tan 2° ..... tan 45° .....tan 88° × tan 89°

=> tan (90 - 89) × tan (90 - 88).....tan 45°.....tan 88° × tan 89°

=> cot 89° × cot 88°.....tan 45°.....tan 88° × tan 89°

=> 1

Therefore The correct answer is option (2).

Q38. Answer: (b) 8

Given:

1216 - 32D

Concept used:

For a number to be divisible by 8, the last three digits must be divisible by 8.

Calculation:

If DDD is divisible by 8, then D = 8.

Therefore The value of D is 8.

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Q39. Answer: (c) Third Schedule

The correct answer is the Third Schedule.

Key Points

• Forms of Oaths or Affirmations for Ministers, Ministers of State, Members of Parliament, and Candidates and other important officeholders of the country are contained in the Third Schedule.

Additional Information

• There are a total of twelve schedules in the Indian constitution that deals with different subjects as given below-

First Schedule	States and union territories
Second Schedule	Provision of - the President, Governors of States, - Speaker and the Deputy Speaker of the House of the People - Chairman and the Deputy Chairman of the Council of States - Speaker and the Deputy Speaker of the Legislative Assembly - Chairman and the Deputy Chairman of the Legislative Council of a State - Judges of the Supreme Court and of the High Courts - Comptroller and Auditor-General of India
Fourth Schedule	The allocation of seats in the Council of States.
Fifth Schedule	Administration and Control of Scheduled Areas and Scheduled Tribes.
Sixth Schedule	Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura, and Mizoram.
Seventh Schedule	Union list, State list, and the concurrent list.
Eighth Schedule	list of recognized languages.
Ninth Schedule	validation of certain Acts and Regulations.
Tenth Schedule	disqualification on the ground of defection.
Eleventh Schedule	powers, authority, and responsibilities of Panchayats.
Twelfth Schedule	powers, authority, and responsibilities of Municipalities.

Q40. Answer: (a) 4

Given:

$(2\sqrt{2}+\sqrt{7})/(2\sqrt{2}-\sqrt{7}) = x+ y\sqrt{14}$

Concept used:

Rationalizing the denominator

Calculation:

Rationalizing the left hand side of the equation,

$(2\sqrt{2}+\sqrt{7})\times(2\sqrt{2}+\sqrt{7})/(2\sqrt{2}-\sqrt{7}) \times (2\sqrt{2}+\sqrt{7}) = (8+7+4\sqrt{14})/(8-7)=15+4\sqrt{14}$

Therefore The value of y is 4.

Q41. Answer: (c) Neither conclusion 1 nor conclusion 2 follows.

Given statement: In the modern era, lack of water availability is a major problem especially in summer times.

According to the statement, there is lack of water availability in major problem, but they not mentioned that the animal death is the main cause. So, conclusion I does not follow. Also, there is shortage of water in summer times, but not mentioned anything about winter. So, conclusion II does not follow.

Thus, 'neither conclusion I nor II' follows.

Hence, the correct answer is 'option 3'.

Q42. Answer: (a) 71

Given:

Mona was residing at a place 'X' from 17 February 2012 to 27 April 2012.

Concept used:

In a leap year, February consists of 29 days.

Calculation:

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2012 is a leap year, so February will have 29 days. Therefore, number of days she stayed in February is 29 -17 + 1 = 13

In March, 31 days.

In April, 27 days.

Therefore The number of days Mona was residing at place 'X' is 13 + 31 + 27 = 71.

Q43. Answer: (b) Guru Shikhar

The correct answer is Guru Shikhar.

Key Points

• Guru Shikhar is the highest peak in the Aravalli Range at 5650 feet (1722 meters) in Mount Abu of Rajasthan.

• It is lies near the south-western extremity of the Central Aravalli range, close to the border with Gujarat state.

• About Aravalli:

• The Aravalli's of Northwestern India, one of the oldest fold mountains of the world, now form residual mountains with an elevation of 300m to 900m.

• They stretch for a distance of 800 km. from Himmatnagar in Gujarat to Delhi, spanning Haryana, Rajasthan, Gujarat, and Delhi, the 692 kilometers (km).

• The mountains are divided into two main ranges, the Sambhar Sirohi Range and the Sambhar Khetri Range in Rajasthan, where their extension is about 560 km.

• These are fold mountains of which rocks are formed primarily of the folded crust when two convergent plates move towards each other by the process called orogenic movement.

• The Aravallis act as a barrier between the fertile plains in the east and the sandy desert in the west.

• Historically, it is said that the Aravalli range checked the spread of the Thar desert towards the Indo-Gangetic plains, serving as a catchment of rivers and plains.

Additional Information

• Om Parvat:

• The ancient peak Om Parvat is situated in the Himalayan Mountain Range that is located in western Nepal's Darchula District.

• It is clipped on the border of India and Nepal.

• The massively fascinating impression of Om Parvat is that it is witnessed as the one being formed naturally as soon as the deposition of the snow commences with the backdrop of the mountain that is black in color.

• Om Parvat is situated nearby Nabhi Dhang camp (Nepal) and this majestic peak does not fall in our Kailash Yatra route.

• Kamet Peak:

• Kamet Peak is the highest point in the Zanskar range located at an altitude of 7756 meters.

• Zaskar Range also called Zanskar, group of mountains in the Himalayas, of northern India and the western Tibet Autonomous Region of China.

• They extend southeastward for some 640 km from the Karcha River to the upper Karnali River.

• The most important passes are Shipki, Lipu Lekh, and Mana.

• Zaskar is drained by the Zaskar River which flows northward, joining the Indus River below Leh.

Q44. Answer: (d) Only conclusion 3 follows.

From the given statements, we draw the Venn diagram as:

Thus, combining all the statements we get,

Next, we will check all the conclusions as:

1. No men is animal: Since some animal are men and so men are animal. This is not true.

2. All animals are birds: Since all birds are animals and so some animals are birds but not all. This is not true.

3. Some men are animals: Since some animals are men and so some men are animals. This is true.

4. Some men are birds: Since all birds are animals and so some animals are men. So men are birds is not possible. This is not true.

Hence, only conclusion 3 is true.

Q45. Answer: (c) 1716

Concept used:

BODMAS rule :- Any mathematical expression must be simplified by using the following priority order-Brackets, order of power, division, multiplication, addition and then subtraction.

Calculation:

$4/11 \times 121/16 \times 24 (75^2 - 55^2) \times 1/100 = 11/4 \times 24(5625-3025) \times 1/100=(11 \times 6 \times 2600)/100=1716$

Therefore The value of the given expression is 1716.

Q46. Answer: (b) 1,261

Given:

Rs. 8,000 is compounded at 10% per annum half yearly for 11/2 years.

Formula used:

Amount after n years = $P(1 + r/100)^n$, P is the principle amount, r is the interest rate per annum.

Calculation:

Here, P = 8000, r = 5, n = 3

Amount after first year = $8000(1 + 5/100)^3$=9261

Therefore The interest (in Rs.) on Rs. 8,000 at 10% per annum compounded half yearly for 11/2 years is 1261.

Q47. Answer: (c) 2 percent

The correct answer is 2 percent.

Key Points

• According to the Election Commission of India, a political party shall be eligible to be recognized as a national party only if it fulfils any one of the following three conditions:

• It wins at least 2% (11 seats) in the Lok Sabha and these members are elected from at least three different states.

• And It secures at least 6% of the total valid votes polled in any four or more states at a general election to the Lok Sabha or to the State Legislative Assembly. In addition, it wins at least 4 seats in Lok Sabha from any State or states.

• A party gets recognition as State Party in four or more States.

Additional Information

• Lok Sabha is also known as a lower house or a temporary house.

• The total strength of the Lok Sabha is 552.

• In January 2020 The seats reserved for Anglo Indians in Parliament and State Legislatures of India were discontinued by the 126th Constitutional Amendment Bill of 2019 enacted as 104th Constitutional Amendment Act 2019.

• The tenure of Lok Sabha is 5 years and it can be dissolved by the President of India before the expiration of tenure.

• The first male speaker of Lok Sabha is Ganesh Vasudeo Mavalankar and the first female speaker is Meira Kumar.

• At present, there are 543 Lok Sabha constituencies and this number has not changed since 1971.

Q48. Answer: (b) 131/2 days

Given:

A and B can finish a task in 18 days, B and C can finish the same task in 27 days. A, B and C together can finish it in 12 days.

Formula used:

If A and B alone finish a task in a and b days, then the reciprocal of the days taken for them to finish the task together is 1/a+1/b

Calculation:

Here, 1/a+1/b=1/18 ...(1)

1/b+1/c=1/27 ...(2)

1/a+1/b+1/c=1/12 ...(3)

From (1) and (3), 1/c=1/12-1/18

From (3) and (3), 1/a=1/12-1/27

This means that 1/a1/c=2/12-1/18-1/21=2/27

Therefore A and C will finish the task in 27/2=131/2 days.

Q49. Answer: (c) Sidhu and Kanhu

The correct answer is Sidhu and Kanhu.

Key Points

• Santhal uprising was led by Siddhu and Kanhu it took place during 1855-56.

• Santhal uprising was a rebellion of Santhal tribes settled in Rajmahal Hills in Bihar (Now in Jharkhand against British and zamindars).

• The tyrannical British revenue system, usury practices, and the zamindari system in India made Santhal peoples annoyed, and two Santhal brothers Sidhu and Kanhu Murmu organized 10,000 Santhals and proclaimed a rebellion against the British.

• The Santhals are the largest tribal group in India found in Jharkhand, West Bengal, and Odisha.

Additional Information

• Britishers invited the Santhals to come and settle in Jharkhand promising land and economic amenities.

• Thus Santhals from different states came to settle in today's Jharkhand.

• Later zamindars dominated these areas as they collected taxes and lent money at very high rates which the people could not generally pay and their lands were forcibly taken.

• This became the roots of the Santhal rebellion.

• In a fierce encounter, Santhals were defeated as they were fighting with bows and arrows while Britishers had modern weapons.

• Sidhu was caught in August 1855 and was hanged on a banyan tree at a place called Panchkathia.

Q50. Answer: (c) M1, W5, W4, M4, W3

Given: A team of 5 members is to be selected from 5 men M1, M2, M3, M4 and M5 and 6 women W1, W2, W3, W4, W5 and W6.

According to the given statements:

1) M5 cannot be selected with W4 or M4.

=>This means option 1 (i.e. M2, W2, W4, M5, W6) is eliminated.

2) M2 must be selected with M5. Also, given that there are at least three women in the team

=>This means option 2 (i.e. M2, W3, M5, M3, W2) is eliminated.

3) M1 cannot be selected with M3.

=>This means option 4 (i.e. M1, W2, W4, W6, M3) is eliminated.

4) W6 cannot be selected with M2 or W1 or W2. W5 cannot be selected with W6 or W2 or M2.

=>This means option 3 (i.e. M1, W5, W4, M4, W3) is true.

Hence, the correct answer is 'option 3'.

Q51. Answer: (d) VX

The alphabets and their positions are:

First we will check all the options as:

1) CF:

2) AD:

3) OR:

4) VX:

Thus, we see that all follow the same pattern except 'VX'.

Hence, the odd one is 'VX'

Q52. Answer: (a) Article 108

The correct answer is Article 108.

Key Points

• Article 108 of the Indian Constitution provides for a joint sitting of both Houses of Parliament. Accordingly, a joint session can be summoned when:

• If after a bill is passed by one House and transmitted to the other House.

• The other House rejects this bill, or

• The Houses do not agree on the amendments made to the bill, or

• More than six months elapsed with the bill being received by the other House without it being passed.

• Then, the President can summon a joint sitting unless the bill had elapsed because of the Lok Sabha's dissolution.

Additional Information

Article Number	For
Article 156	Under Article 156: - The Governor shall exercise office during the President's pleasure. - The Governor may resign his office by writing to the President addressed to him. - Provided that the Governor continues to hold office until his successor enters his office, notwithstanding the expiry of his term.

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Article 100	Under Article 100(3): - The quorum to constitute a meeting of either House of Parliament is one-tenth of the total number of members of the House. - If there is no quorum in the House, it shall be the duty of the Chairman, either to adjourn the House or to suspend the meeting until there is a quorum. - The total membership of the Rajya Sabha is 245, therefore, the presence of 25 members is the quorum sufficient to constitute its meeting.
Article 75	According to article 75(3): - The Council of Ministers shall be collectively responsible to the House of the People. - Article 75 talks about provisions related to the council of ministers. - The total number of the ministers including the Prime Minister, in the council of ministers, shall not exceed 15% of the total strength of the Lok Sabha. - The ministers shall hold office during the pleasure of the President. - The council of ministers shall be collectively responsible to the Lok Sabha/House of the People.

Q53. Answer: (b) 288

The logic here is:

Hence, the next number is '288',

Q54. Answer: (d) Competition Commission of India

The correct answer is the Competition Commission of India.

Key Points

• Competition Commission of India:

• It is the chief national competition regulator in India.

• It is a statutory body within the Ministry of Corporate Affairs and is responsible for enforcing the Competition Act, 2002 in order to promote competition and prevent activities that have an appreciable adverse effect on competition in India.

• CCI also approves combinations under the act so that two merging entities do not overtake the market.

• The commission was established on 14 October 2003.

• It became fully functional in May 2009 with Dhanendra Kumar as its first Chairman.

Additional Information

• Research and Analysis Wing:

• RAW (Research and Analysis wing) is India's External Intelligence agency.

• Headquartered in New Delhi.

• RAW came into being on September 21st, 1968, after the Sino-Indian war of 1962 and the India-Pakistan war of 1965, which exposed gaps in intelligence gathering undertaken by the Intelligence Bureau.

• RAW's first director was Rameshwar Nath Kao.

• The head of RAW is called the "Secretary" (research) in the cabinet secretariat. The current chief of RAW is Samant Kumar Goel. (Feb 2021).

• RAW is only answerable to the Prime Minister of the country, and the Joint Intelligence Committee, Hence it is exempted from RTI Act.

• Intelligence Bureau:

• It is the internal intelligence agency of our country.

• IB shares intelligence with the other intelligence agencies and the police.

• IB director- Arvind Kumar (Oct 2021).

Q55. Answer: (a) 249

The correct answer is 249.

Key Points

• According to the Public Enterprises Survey 2018-19, 249 Central Public Sector Enterprises (CPSEs) were in operation in India as of 31st March 2019.

Additional Information

• Economic Survey:

• The Economic Survey of India is an annual document released by the Ministry of Finance, Government of India.

• It contains the most authoritative and updated source of data on India's economy.

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• India's estimated GDP growth rate for 2018-19 in the Economic Survey was 7% - 7.5%.

• It is a report that the government presents on the state of the economy in the past year, the key challenges it anticipates, and their possible solutions.

• The Economic Survey document is prepared by the Economics Division of the Department of Economic Affairs (DEA) under the guidance of the Chief Economic Advisor.

• It is usually presented a day before the Union Budget is presented in the Parliament.

• The first Economic Survey in India was presented in the year 1950- 51.

• Up to 1964, it was presented along with the Union Budget. From 1964 onwards, it has been delinked from the Budget.

Q56. Answer: (d) World Bank

The correct answer is World Bank.

Key Points

• The International Development Association (IDA) provides interest-free loans – called credits – and grants to governments of the poorest countries. Together, IBRD and IDA make up the World Bank.

• The International Bank of Reconstruction and Development (IBRD) is one of the two major institutions that make up the World Bank.

• The IDA is a financial institution dedicated to making developmental loans to the world's poorest countries.

• Together, IBRD and IDA make up the World Bank.

Additional Information

• The United Nations is an international organization founded in 1945.

• The International Labor Organization (ILO) is devoted to promoting social justice and internationally recognized human and labour rights, pursuing its founding mission that labour peace is essential to prosperity.

• The International Monetary Fund (IMF) works to achieve sustainable growth and prosperity for all of its 190 member countries.

• The World Bank is an international development organization owned by 187 countries.

Q57. Answer: (a) 10

Given:

Total students = 130

Likes both Maths and History = 15

Likes only Hindi = 25

Likes only English = 30

Likes both English and Hindi = 20

Likes only History = 15

Likes only Maths = 15

Total who like English = 60

Total who like Hindi = 55

Total who like Maths = 40

Total who like History = 40

Formula Used

Total in a group = Only + Sum of all pairwise intersections + Thrice all three intersections + 4 times all four intersections.

Calculation:

Likes only English and Hindi = 20

Total who like English = Only English + English and Hindi + All four subjects

=> 60 = 30 + 20 + All four subjects

=> 60 = 50 + All four subjects

=> All four subjects = 60 - 50 = 10

Therefore The number of students who like all four subjects is 10.

Q58. Answer: (c) Calcutta

The correct answer is Calcutta.

Key Points

• Mahatma Gandhi was in Calcutta on the day India got Independence.

• Champaran was the first initiative of Mahatma Gandhi as a nationalist in India.

• Mahatma Gandhi was the leader who guided India towards Independence. India was under British rule for over 250 years.

• Gandhi returned to India from South Africa in 1915 at the request of Gopal Krishna Gokhale.

• Mahatma Gandhi's famous contributions to the Indian freedom movement.

• Champaran Satyagraha (1917):

• The Champaran agitation in Bihar was Gandhi's first active involvement in Indian freedom politics.

• The Champaran farmers were being forced to grow Indigo and were being tortured if they protested.

• The farmers sought Gandhi's help and through a calculated non-violent protest, Gandhi managed to win concessions from the authority.

Q59. Answer: (d) 243

Given:

9 × 0.9 × 0.09 × 0.009 × 1/0.3 × 1/0.03× 1/0.003

Concept used:

Division

Calculation:

9 × 0.9 × 0.09 × 0.009 × 1/0.3 × 1/0.03× 1/0.003 = 9×3×3×3=243

Therefore The value of the given expression is 243.

Q60. Answer: (c) 150 m

Given:

A kite is flying with a thread of length 296 m, making an angle of elevation measuring 30° at a point of hand of a person of height 2 m from the ground.

Formula used:

sin(30°) = 0.5

Calculation:

The height of the kite from the person's hand = 296sin(30°) = 296 × 1/2 = 148m

Therefore The height of the kite from the ground is 148 + 2 = 150 m

Q61. Answer: (c) Graphical User Interface

The correct answer is Graphic User Interface.

Key Points

• GUI (graphical user interface):

• It is a system of interactive visual components for computer software.

• A GUI displays objects that convey information, and represent actions that can be taken by the user.

• The objects change color, size, or visibility when the user interacts with them.

• It allows users to interact with electronic devices through graphical icons and an audio indicator such as primary notation, instead of text-based user interfaces, typed command labels, or text navigation.

Q62. Answer: (b) Odisha

The correct answer is Odisha.

Key Points

• Odisha contributes around 90% of the total production of chromite in the country.

• Chromite is the only economic ore of chromium which is an oxide of iron and chromium which is used in chrome plating and alloying for the production of various materials such as corrosion-resistant superalloys, nichrome, stainless steel, etc.

• It is used for the production of Disodium that is necessary for the production of stainless steel.

• Apart from Odisha, Maharashtra, Tamil Nadu, Jharkhand, and Karnataka also contribute to chromite production in the country.

• Karnataka is the second-largest producer of chromite.

Q63. Answer: (d) X

The alphabets and their positions are:

The logic here is:

Hence, the next letter is 'X'.

Q64. Answer: (d) David Malpass

The correct answer is David Malpass.

Key Points

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• David R. Malpass was selected as 13th President of the World Bank Group by its Board of Executive Directors on April 5, 2019.
• Mr. Malpass previously served as Under Secretary of the Treasury for International Affairs for the United States.
• He was a senior economic adviser to US President Donald Trump during his 2016 election campaign.
• Malpass succeeds Jim Yong-Kim, who stepped down on February 1 to join an investment firm.
• Mr. Malpass represented the United States in international settings, including the G-7 and G-20 Deputy Finance Ministerial, World Bank- IMF Spring and Annual Meetings, and meetings of the Financial Stability Board, the Organization for Economic Cooperation and Development, and the Overseas Private Investment Corporation.

Additional Information

Jim Yong Kim	**• Jim Yong Kim is, also known as Kim Yong, an American physician, and anthropologist who served as the 12th President of the World Bank from 2012 to 2019. - On January 7, 2019, he announced that he would step down effective February 1, 2019.**
Raghuram Rajan	• He is an Indian economist and 23rd Governor of the RBI. - He is also the author of the book 'I Do What I Do'.

Q65. Answer: (a) white vitriol

The correct answer is White Vitriol.

Key Points

• Zinc Sulphate is the chemical compound name of the white vitriol.
• It is a compound and dietary supplement that is inorganic.
• Zinc sulphate is formed by treating nearly every zinc-containing substance (metal, rocks, oxides) with sulfuric acid.
• The reaction of a metal with aqueous sulphuric acid involves a specific reaction:
• Zn + H2SO4 + 7H20 - ZnSO4.7H2O + H2
• It is used as a supplement to treat zinc deficiency and avoid the disease in high-risk patients.
• It has the formula of ZnSO4 as well as several of the three hydrates.
• It is used in medicine together with oral rehydration therapy (ORT) and astringent treatment.

Q66. Answer: (b) 28

We add each option to the given number and check the conditions:

1) 3500 + 22 = 3522
Divisible by 42 = 3522 ÷ 42 = 83.8
Divisible by 49 = 3522 ÷ 49 = 71.8
Divisible by 56 = 3522 ÷ 56 = 62.8
Divisible by 63 = 3522 ÷ 63 = 55.9
2) 3500 + 28 = 3528
Divisible by 42 = 3528 ÷ 42 = 84
Divisible by 49 = 3528 ÷ 49 = 72
Divisible by 56 = 3528 ÷ 56 = 63
Divisible by 63 = 3528 ÷ 63 = 56
3) 3500 + 24 = 3524
Divisible by 42 = 3524 ÷ 42 = 83.9
Divisible by 49 = 3524 ÷ 49 = 71.9
Divisible by 56 = 3524 ÷ 56 = 62.9
Divisible by 63 = 3524 ÷ 63 = 55.9
4) 3500 + 26 = 3526
Divisible by 42 = 3526 ÷ 42 = 83.9
Divisible by 49 = 3526 ÷ 49 = 71.9
Divisible by 56 = 3526 ÷ 56 = 62.9
Divisible by 63 = 3526 ÷ 63 = 55.9
Hence the correct answer is option 2)

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Q67. Answer: (b) Rigveda

The correct answer is Rigveda.

Key Points

• Rig Veda' is the oldest of the Vedas and in any Indo-European language one of the oldest extant texts.

• The Rig Veda is a set of ancient Indian texts comprising 1028 Sanskrit Hymns from the Vedic period and 10,600 verses devoted to the Rigvedic deities.

• It is arranged in 10 volumes, known as mandalas.

• It is one of the four canonical Hindu holy texts collectively known as the Vedas.

• The "Rig Veda" outlines one of the oldest types of yoga and provides knowledge about yoga and other spiritual disciplines.

Additional Information

• Samaveda:

• known as the Veda of melodies and chants, Samaveda dates back to 1200-800 BCE. This Veda is related to public worship.

• There are 1549 verses (except 75 verses, all have been taken from Rigveda).

• There are two Upanishads embedded in Samaveda - Chandogya Upanishad and Kena Upanishad.

• The Samaveda is considered the root of Indian classical music and dance.

• It is considered as the storehouse of the melodious chants.

• Yajurveda:

• Stands to mean 'Worship Knowledge', Yajurveda dates back to 1100- 800 BCE; corresponding with Samaveda. It compiles ritual-offering mantras/chants. These chants were offered by the priest alongside a person who used to perform a ritual (in most cases yajna fire.)

• It has two types - Krishna (Black/Dark) & Shukla (White/Bright).

• Krishna Yajurveda has an un-arranged, unclear, motley collection of verses.

• Shukla Yajurveda has arranged and clear verses.

• Atharvaveda:

• Stands to mean a tatpurusha compound of Atharvan, an ancient sage, and knowledge (atharvan+knowledge), it dates back to 1000- 800 BCE.

• The daily procedures of life are very well enumerated in this Veda.

• It has 730 hymns/suktas, 6000 mantras, and 20 books.

• Paippalada and the Saunakiya are two surviving recensions of Atharvaveda.

• Called a Veda of magical formulas, it includes three primary

• Upanishads - Mundaka Upanishad, the Mandukya Upanishad, and the Prashna Upanishad.

Q68. Answer: (c) Mangrove

The correct answer is Mangrove forests.

Key Points

• The Sundarbans is a cluster of low-lying islands in the Bay of Bengal, spread across India and Bangladesh, famous for its unique mangrove

forests.

• This active delta region is among the largest in the world, measuring about 40,000 sq km.

• The Sundarbans are of universal importance for globally endangered species including the Royal Bengal Tiger, Ganges and Irawadi dolphins, estuarine crocodiles, and the critically endangered endemic river terrapin (Batagur Baska).

• It is the only mangrove habitat in the world for Panthera tigris Tigris species.

• A mangrove is a shrub or small tree that grows in coastal saline or brackish water.

Q69. Answer: (a) Shipping Corporation of India

The correct answer is Shipping Corporation of India.

Key Points

• The 'Maharatna' status is granted to Public Sector Enterprises (PSEs) in India based on performance and financial health.

• Currently, 'Shipping Corporation of India' is not classified as a Maharatna company.

• Maharatna status enables greater autonomy and the ability to make decisions regarding investments up to Rs. 5,000 crore without seeking government approval.

• The Maharatna status is granted to companies like Coal India Limited, Indian Oil Corporation, and National Thermal Power Corporation.

Additional Information

• Maharatna Companies

• Maharatna companies are empowered to make investments up to Rs. 5,000 crore without government approval, enhancing their operational flexibility.

• Examples of Maharatna companies include Indian Oil Corporation, Coal India, NTPC, and ONGC.

• These companies contribute significantly to India's economy in sectors like energy, coal mining, and petroleum.

• Navratna and Miniratna Status

• Navratna and Miniratna statuses are given to PSEs in India to encourage their performance and empower them in decision-making.

• While Navratna companies can make investments up to Rs. 1,000 crore, Miniratna companies have limited autonomy and can invest up to Rs. 300 crore.

• Shipping Corporation of India (SCI)

• SCI is one of India's largest shipping companies, primarily owned by the government.

• Despite its large contribution to the Indian economy, SCI does not currently hold Maharatna status.

Q70. Answer: (d) Blue

The correct answer is Blue.

Key Points

• The blue color is itself a primary color.

• The category of all colors with their description is as follows:

Category	Colour
Primary Colour	Red, Yellow, and Blue
Secondary Colour	Orange, Green, and Violet.
Tertiary Colour	• Reddish: Orange, Orangish Yellow. - Yellowish: Green, Greenish- Blue. - Bluish: Violet and Violetish Red.

Additional Information

• Color Wheel:

• The colour wheel or colour circle is a basic visual device where colours are organized in a circular manner for understanding fundamental principles of colour classification, arrangements, and colour relationships.

• Following is the most popular twelve-colour wheel:

Q71. Answer: (d) 800

Formula used:

Profit = (selling price - cost price)/(cost price)×100

Calculation:

Let the cost price of the first table be x.

Then, 25=(400-x)/x× 100

Solving for x,

x=400/1.25=320

This means he made a profit of Rs. 80.

Hence, he lost Rs. 80 in the second sale.

Let the cost price of the second table be y.

Then, 10=80/y× 100

Solving for y,

y=80×100/10=800

Therefore, the cost price of the second table is Rs. 800.

Q72. Answer: (d) 90

The alphabets and their positions are:

The logic here is:

Charger = C + H + A + R + G + E + R = 3 + 8 + 1 + 18 + 7 + 5 + 18 = 60

Similarly for the word

TOPPER = T + O + P + P + E + R = 20 + 15 + 16 + 16 + 5 + 18 = 90

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Hence, the correct answer is 'option 4'.

Q73. Answer: (a) 10 years

Formula used:

Principle amount 'P' in 'n' years at 'r'% interest rate per annum = P+(P× r × n)/100

Calculation:

For 6 years, 2613=P+(P× 5 × 6)/100

Solving for P,

P=2613/1.3=2010

Then, for the amount to become Rs. 3015,

3015=2010+(2010× 5 × n)/100

Solving for n,

n=((3015-2010)× 100)/(2010× 5)=10

Therefore The sum of money will amount to Rs. 3015 in 10 years.

Q74. Answer: (c) 1 gigabyte

The correct answer is 1 Gigabyte.

Key Points

• One gigabyte in the memory context of data storage comprises 1024 MB (megabyte) or 1 million bytes.
• In Sl units, it is written as 109. This is the most commonly used unit of storage in modern times.
• 1 Gigabyte = 1024 Megabytes.
• 1 Terabyte = 1024 Gigabytes.

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.
• 1ZB (zettabyte) = 1024 XB.
• 1 YB (yottabyte) = 1024 ZB.

Q75. Answer: (c) PSLV-C11

The correct answer is PSLV-C11.

Key Points

• Chandrayaan -1, India's first mission to the Moon was launched using PSLV-C11 from Sriharikota, Andhra Pradesh.
• It was the first Indian lunar probe launched by ISRO in 2008.
• The mission included only a lunar orbiter and no lander or rover.
• Was announced by former PM Shri Atal Bihari Vajpayee on 15th August 2003.

Additional Information

• ISRO facts:-
• Established on 15th august 1969 as INCOSPAR with the efforts of Vikram Sarabhai.
• The headquarters is in Bengaluru.
• S. Somnath is the current chairman of ISRO.
• Aryabhata was the first satellite to be launched in 1975.
• Launched Mars Orbiter Mission on 5th November 2013 making
• India is the first country ever to succeed in its maiden attempt at Mars.
• On 15th February 2017, ISRO made a world record by launching 104 satellites in a single rocket (PSLV-C37).

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Q76. Answer: (a) Manipur

The correct answer is Manipur.

Key Points

• India shares a 4,096-km-long border with Bangladesh which touches Assam, Tripura, Mizoram, Meghalaya, and West Bengal.

• A map showing the boundaries shared with the Bangladesh:

Q77. Answer: (d) 2,400

Given:

Total sum of money is divided among A, B, and C.

A gets one-third of the total amount.

B gets thrice as much as C.

C gets Rs. 1,200 less than A.

Formula Used:

Let the total sum of money be S.

A's share = 1/3S.

C's share = x.

B's share = 3x.

Calculation:

=> From the given, C gets Rs. 1,200 less than A.

=> x = 1/3S - 1200

=> Total sum S is the sum of shares of A, B, and C:

=> S = 1/3S + 3x + x

=> S = 1/3S + 4x

=> Substitute x from C's share:

=> x = 1/3S - 1200

=> S = 1/3S + 4(1/3S - 1200)

=> S = 1/3S + 4/3S - 4800

=> S - 1/3S - 4/3S = -4800

=> 2/3S = 4800

=> S = (4800 × 3)/2

=> S = 7200

=> A's share = 1/3 × 7200

=> A's share = 2400

Therefore A's share is Rs. 2,400.

Q78. Answer: (a) chip

The correct answer is Chip.

Key Points

• An IC or Integrated Circuit, also known as a microchip, chip, or microelectronic circuit is an assembly of electronic components which are

fabricated as a single unit.

• The active and passive devices such as transistors and resistors and their interconnections are built on a thin substrate of silicon, a semiconductor material.

• Integrated circuits are the chips of Silicon on which transistors, logical gates, resistors or capacitors are embedded.

• The first IC was developed by Jack Kilby and Robert Noyce in 1958, but the concept was introduced by Geoffrey Dummer in 1952.

• These building blocks of a circuit can act as microprocessors, amplifiers, memory etc.

Q79. Answer: (c) Five

The correct answer is Five.

Key Points

• Five nuclear explosions were conducted by India at Pokhran in May 1998.

• Pokhran-II was the series of five nuclear bomb test explosions conducted by India at the Indian Army's Pokhran Test Range in

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May 1998.

• It was the second Indian nuclear test; the first test, code-named Smiling Buddha, was conducted in May 1974.

Additional Information

• Pokhran-I was also the first confirmed nuclear weapons test by a nation outside the five permanent members of the UN Security Council.

• The bomb was detonated on the army base Pokhran Test Range in Rajasthan.

• The first nuclear explosion in India was conducted on 18 May 1974.

• The assigned code name of the first nuclear bomb test was Smiling Buddha.

Q80. Answer: (c) Khol

The correct answer is Khol.

• A wind instrument is any musical instrument that uses air as the primary vibrating medium for the production of sound.

• E.g Trumpet, Shehnai, Saxophone.

Key Points

• Mridang/Khol:

• It is a type of Baja which is slightly longer than a drum.

• Like tabla, both its mouths are covered with leather.

• Its structure is made of hard soil it is called mridang.

• Mridang is a tap machine in South India. It is the primary rhythm instrument in Carnatic music.

• It is also called mridang Khol, mridangam, etc. In villages, people sing mridang and sing kirtan songs.

Q81. Answer: (b) 1917

The correct answer is 1917.

Key Points

• Mahatma Gandhi came to Champaran in 1917.

• Mahatma Gandhi arrived at Motihari which was the headquarter of Champaran district on 15th April 1917 and decided to visit the village Jassauli where the tenant farmers were oppressed.

Additional Information

• The Champaran Satyagraha of 1917 was Mahatma Gandhi's first satyagraha activity in British India, and it is regarded as a pivotal moment in the Indian independence movement.

• Gandhi organized rallies and a strike against the landlords, who, with the help of the British government, signed a deal offering more compensation and authority over-farming to the region's impoverished farmers.

• Farmers were underpaid for their indigo harvests, and if they refused to cultivate indigo, they were subjected to high taxes. The landlords (mainly British) would impose this system through their agents, who would violently carry out the conditions.

Q82. Answer: (d) Odisha

The correct answer is Odisha.

Key Points

• Odisha Chief Minister Naveen Patnaik has launched the Green Mahanadi Mission.

• It is a plantation drive under which over two crore trees will be planted along the rivers in the state on the Mahanadi river basin.

• A total of more than five crore saplings will be planted over an area of 41,000 hectares.

• The objective of the mission is to stop soil erosion on river banks and recharge the groundwater reserve.

• The volunteers will plant fruit-bearing trees like mango, jackfruit & Jamun within a 1 km radius of the river bank.

Additional Information

• Odisha (as of July 2021)

• CM: Naveen Patnaik.

• Governor: Ganeshi Lal.

• State flower: Ashoka.

• State tree: Ashwatha (Sacred Fig).

• State Animal: Sambar deer.

• Highest Peak: Deomali.

• National Parks and Wildlife Sanctuaries: Similipal National Park, Bhitarkanika NP, Badrama WS, Baisipalli WS, Balukhand Konark WS, Chandaka Dampara WS, Chilika Nalaban WP.

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Q83. Answer: (d) Labour Party

The correct answer is Labour Party.

Key Points

• Labour Party was in power from 1935 to 1955 in England when the Cabinet Mission came to India.

• Clement Attlee was the former Prime Minister of the United Kingdom. He served as the Prime Minister of the United Kingdom from 1945 to

1951.

• Clement Attlee had declared India will get independence before June 1948. He declared that the British would quit India in June 1948 on February 20, 1947.

• Mountbatten arrived in India on 22 March 1947 as per the instruction of Clement Attlee.

• The Indian independence bill was introduced in Parliament on 4th July 1947.

• The Indian independence act was enacted on 18th July 1947.

• The Indian independence act came into force on 15th August 1947.

• He considered Indian independence as his finest achievement.

Additional Information

• Stafford Cripps and A. V. Alexander were members of the Cabinet Mission.

• John Major was a former Prime Minister of the United Kingdom. He served as the Leader of the Conservative Party from 1990 to 1997.

Q84. Answer: (c) Washington DC, USA

The correct answer is Washington DC, USA.

Key Points

• The headquarters of the World Bank is in Washington D.C. of the United States of America(USA).

• It has a total membership of 189 countries.

• It was established in the year 1944.

Additional Information

• The World Bank is an international financial institution that provides loans and grants to the governments of low- and middle-income countries for the purpose of pursuing capital projects.

• It comprises two institutions: the International Bank for Reconstruction and Development (IBRD), and the International Development Association(IDA).

• Some important International Organizations and their Headquarters:

• World Economic Forum - Cologny, Switzerland.

• UNESCO - Paris, France.

• UNICEF - New York.

• WHO - Geneva.

• UNDP - New York.

• SAARC - Kathmandu.

• BRICS - Shanghai, China.

Q85. Answer: (d) 1

Formula used:

BODMAS

B - Brackets

O - Of

D - Division

M - Multiplication

A - Addition

S - Subtraction

Preference will be given on the basis of the letters coming first in the word BODMAS.

Calculations:

(5 + 5 × 5)/(5 × 5 + 5)× (1/5÷ (1/5× 1/5))/((1/5× 1/5)÷ 1/5)-(5-1/5)× 10/2

= 30/30× (1/5÷ 1/25)/(1/25÷ 1/5)-(24/5)× 5

= 1 × 25 - 24

= 25 - 24

= 1

Hence, The value required is 1.

Q86. Answer: (b) 190

Given:

In the given graph, data is given for paper production in different years by 3 companies X, Y and Z.

Calculations:

Production of company X in year 1996 = 30

Production of company X in year 1997 = 45

Production of company X in year 1998 = 25

Production of company X in year 1999 = 50

Production of company X in year 2000 = 40

Total production of company X in all years = 30 + 45 + 25 + 50 + 40 = 190

Hence, The total production of company X in all years is 190(in lakh tons).

Q87. Answer: (d) Z

Given:

In the given graph, data is given for paper production in different years by 3 companies X, Y and Z.

Calculations:

Range of Production of company X between year 1996 to 2000 = 25 to 50

Range of Production of company Y between year 1996 to 2000 = 25 to 50

Range of Production of company Z between year 1996 to 2000 = 35 to 45

Hence, Company Z has the lowest production range.

Q88. Answer: (b) Company Y

Given:

In the given graph, data is given for paper production in different years by 3 companies X, Y and Z.

Formula used:

Average = Total sum of observations/ Total no. of observations

Calculations:

Total production of company X in all years = 30 + 45 + 25 + 50 + 40 = 190 lakh tons

Total production of company Y in all years = 25 + 35 + 35 + 40 + 50 = 185 lakh tons

Total production of company Z in all years = 35 + 40 + 45 + 35 + 35 = 190 lakh tons

Average production of all the companies in given period

= (190 + 185 + 190)/3

= 565/3

= 188.33 lakh tons

So, The production of only company Y is less than the average production of all the companies put together.

Hence, The Required company in Y.

Q89. Answer: (c) 3.60%

Given:

In the year 2000, the production increased by 5% in company X and company Y.

Formula used:

Final Production = Initial production × (100 + increase %)/100

Calculations:

Initial production of company X in year 2000 = 40 lakh tons

Production of company X after 5% increase in year 2000

= (100 + 5)/100 × 40

= 21/20 × 40

= 21 × 2

= 42 lakh tons

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Initial production of company Y in year 2000 = 50 lakh tons
Production of company Y after 5% increase in year 2000
= (100 +5)/100 × 50
= 105/2
= 52.5 lakh tons
Total production in year 2000 before any increase = 40 + 50 + 35 = 125 lakh tons
Total production in year 2000 after increase = 42 + 52.5 + 35 = 129.5 lakh tons
Increase = 129.5 - 125 = 4.5 lakh tons
Increase percentage = 4.5/125 × 100 = 3.60 %
Hence, The Required increase percentage value is 3.60%.

Q90. Answer: (d) Democracy

For
Saudi Arabia : Monarchy
Here, Saudi Arabia is a Monarchy (ruled by King) based on Islam.
Similarly for India : ?
As we know that India is a democratic country (its government is the government of the people, for the people and by the people).
Hence, the correct answer is 'option 4'.

Q91. Answer: (d) bbba

Given: abb-a-b--bbb
First we will check the options as:
1) babb: abbb aabb bbbb
2) abbb: abba abbb bbbb
3) bbbb: abbb abbb bbbb
4) bbba: abbb abbb abbb
Thus, we see that. option 4 is repeating itself.
Hence, the correct answer is 'option 4'.

Q92. Answer: (c) Only conclusion 4 follows.

Statements:
1. Some dogs are cats.
2. No cat is rat.
3. All rats are mosquitoes.
Possible Venn diagram:
Conclusions:
1. Some cats are mosquitoes → False (Since no cat is rat and all rats are mosquitoes)
2. No rat is dog → False (Since no cat is rat and some dogs are cats)
3. Some mosquitoes are dogs → False (Since no cat is rat and some dogs are cats)
4. Some cats are dogs → True (Since some dogs are cats)
Hence, 'option 3' is the correct answer.

Q93. Answer: (a) Water

Darkness : Light
=> Darkness is removed by light.
Similarly, Thirst : ?
=> Thirst is quenched with water.
Hence, 'option 1' is the correct answer.

Q94. Answer: (d) Q and R

Persons : P, Q, R, S, T, U and W
Floors : 1 (lowermost floor) to 7 (topmost floor)
1) Only two persons live between S and T and only four persons live between T and P.
Case 1:

Floors	Persons
7	P
6	
5	S
4	
3	
2	T
1	

Case 2:

Floors	Persons
7	
6	P
5	
4	S
3	
2	
1	T

2) P lives on one of the floor above S and S does not live on an odd numbered floor. (So, case 1 is eliminated)

3) U lives immediately above W.

Floors	Persons
7	Q/R
6	P
5	Q/R
4	S
3	U
2	W
1	T

Q and R are the neighbours of P.

Hence, 'option 4' is the correct answer.

Q95. Answer: (a) Neither conclusion 1 nor conclusion 2 follows.

Statement:

In these times water pollution is a major cause of diseases.

Conclusions:

1. Water borne diseases are very deadly → This does not follow because as such information is not provided in the statement. The statement only states about water pollution.

2. Generally water shortage is reported in pre-monsoon time → This conclusion also does not follow because no such information is provided in the statement.

Thus, neither conclusion 1 nor conclusion 2 follows.

Hence, 'option 1' is the correct answer.

Q96. Answer: (c) Sister's daughter's son

Family chart:

According to the statement:

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Jatin is sister's daughter's son of Urmila.

Hence, 'option 3' is the correct answer.

Q97. Answer: (c) B

Persons : A, B, C, D, E and F

Colours : Red, green, blue, black, orange and white

Cities : Delhi, Mumbai, Hyderabad, Chennai, Bangalore and Kolkata

1) A has a home in Delhi, F has a home in Bangalore and likes red colour, D has a home in Hyderabad, C likes green colour and lives in Chennai and E likes orange colour.

Person	City	Colour
A	Delhi	
B		
C	Chennai	Green
D	Hyderabad	
E		Orange
F	Bangalore	Red

2) A does not like orange and white colours. (It means he likes either blue or black)

Person	City	Colour
A	Delhi	Blue/Black
B		
C	Chennai	Green
D	Hyderabad	
E		Orange
F	Bangalore	Red

3) B does not like blue and black colours and does not live in Mumbai. (It means he likes white colour and lives in Kolkata)

4) D likes either blue or black colour.

Person	City	Colour
A	Delhi	Blue/Black
B	Kolkata	White
C	Chennai	Green
D	Hyderabad	Blue/Black
E	Mumbai	Orange
F	Bangalore	Red

B lives in Kolkata and likes white colour.

Hence, 'option 3' is the correct answer.

Q98. Answer: (a) 720

Given series: 0, 24, 120, 336, ?

Here, the following logic is used:

0 + 24 (24 × 1) = 24

24 + 96 (24 × 4) = 120

120 + 216 (24 × 9) = 336

336 + 384 (24 × 16) = 720

Therefore, the series is: 0, 24, 120, 336, 720

Hence, the correct answer is option (1).

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Q99. Answer: (b) 18 years × duplicate options found. English Question 1 options 1,2

Persons : A, B, C, D, E and F

1) They are sitting in a row facing towards north.

2) B is second to the right of A and A is to the immediate left of E.

3) Only three persons sit between C and F and C sits to the left of E. All of their ages are in successive multiple of 3 from left to right end. The age of D is 18 years and the maximum.

Total age of A and B is 18 yrs (6 yrs + 12 yrs)

Hence, 'option 2' is the correct answer.

Q100. Answer: (c) 145

Given:

Students like Maths and History = 25

Students like only Hindi = 25

Students like only English = 30

Students like English and Hindi both = 20

Students like only History = 15

Students like only Maths = 15

Students like all 4 subjects = 15

Concept Used:

Total = (Maths + History) + (Hindi) + (English) - (English and Hindi) + (History) + (Maths) - (All 4)

Calculation:

According to the concept,

Total = (25 + 15) + 25 + 30 - 20 + 15 + 15 - 15

=> 40 + 25 + 30 + 15 + 15 + 15 - 15

=> 145

Therefore There are 145 students in the class.

Alternate Method

Total students = 15 + 25+ 15+ 15+ 25+ 20+ 30

=> Total students = 145

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