RRB NTPC CBT-I Official Paper (Held On: 11 Jan 2021 Shift 2) (Previous Year Paper)

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

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Q1. What is the LCM of 14, 21 and 28?

(a) 48
(b) 588
(c) 84
(d) 7

Q2. Who is the co-founder of Apple Computers?

(a) Bill Gates
(b) Charles Flint
(c) Paul Allen
(d) Steve Jobs

Q3. Asia's largest Indira Gandhi Memorial Tulip garden is situated in which city?

(a) Shimla
(b) Manali
(c) Ganatok
(d) Srinagar

Q4. If $\sin\theta - \sqrt{3}\cos\theta = 0$ (θ is an acute angle), then the value of $\sin^2\theta - \cos^2\theta$ is:

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

Q5. In an examination Mohit got 30% of the maximum marks but failed by 25 marks. Another student who scored 38% got 15 marks more than the pass marks. The necessary pass percentage required is:

(a) 50%
(b) 35%
(c) 34%
(d) 53%

Q6. The symbol used for Magnesium is:

(a) Mn
(b) Ma
(c) Mo
(d) Mg

Q7. Simplify:

$5 \times 42 - 3 + 27 \div 3$

(a) 110
(b) 216

(c) 218
(d) 204

Q8. A 10 feet long ladder leaning against a wall, reaches the wall at a point 8 feet high. By how much distance should the ladder be moved towards the wall so that its top reaches a point at 9.6 feet high?
(a) 4.4 ft
(b) 3.2 ft
(c) 2.8 ft
(d) 3.92 ft

Q9. A 15 meter high tree is broken by the wind in such a way that its top touches the ground and makes an angle of 60º with the ground. At what height from the bottom is the tree broken?
(a) 15/(1+√3) m
(b) 30√3/(2+√3) m
(c) 15√3/(2+√3) m
(d) 5 m

Q10. Which body is responsible to regulate, promote and ensure orderly growth of the insurance industry in India?
(a) ICICI
(b) CRISIL
(c) RBI
(d) IRDAI

Q11. What does PSLV stand for?
(a) Polar Satellite Launch Vehicle
(b) Public Satellite Launch Vehicle
(c) Private Satellite Launch Vehicle
(d) Partner Satellite Launch Vehicle

Q12. In which of the following Indian National Congress (INC) sessions was the National Anthem sung for the first time?
(a) 1911, Kolkata
(b) 1916, Lucknow
(c) 1917, Kolkata
(d) 1907, Surat

Q13. In a certain code language, 'LEGAL' is written as '37'. How will 'EAGLE' be written as in that language?
(a) 35
(b) 25
(c) 30
(d) 36

Q14. Who wrote the novel 'The White Tiger'?
(a) Chetan Bhagat
(b) Vikram Seth
(c) Khushwant Singh
(d) Aravind Adiga

Q15. Simplify:
√(51+√(134+5√(42+√16+√9)))
(a) 8
(b) 64
(c) 197
(d) 520

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Q16. 16 men can complete a work in 12 days. 12 women can complete the same work in 32 days. 16 men and 16 women together worked for 4 days, after which the women dropped out and 16 more men joined. In how many days will the men be able to complete the remaining work?

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

Q17. Four animals have been give, out of which three are alike in some manner and one is different. Select the odd one.

(a) Cow
(b) Sheep
(c) Goat
(d) Dog

Q18. In the UN Security Council there are:

(a) 10 permanent and 10 non-permanent members
(b) 5 permanent and 10 non-permanent members
(c) 5 permanent and 5 non-permanent members
(d) 10 permanent and 5 non-permanent members

Q19. Travellers in deserts often tend to have an optical illusion of a sheet of water where none actually exists. What is this

(a) Reflection
(b) Diversion
(c) Mirage
(d) Scattering

Q20. Simplify:

(1-1/2) (1-1/3) ..... (1-1/9) (1-1/10)

(a) 5/6
(b) 0
(c) 1/10
(d) – 1/10

Q21. Mohan borrowed an amount of Rs. 18,000 and paid a simple interest of Rs. 2,700 at 10% per annum. Find the duration for

(a) 3 years
(b) 3/2 years
(c) 2/3 years
(d) 3/20 years

Q22. Aedes mosquito is a carrier of:

(a) typhoid
(b) cholera
(c) dengue
(d) malaria

Q23. Sarva Shiksha Abhiyan is a Government of India flagship programme, making free and compulsory education to children in the age group of _____.

(a) 5-14 years
(b) 8-14 years
(c) 7-14 years
(d) 6-14 years

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Q24. Find the value of the given expression.

$6 + 4 \times 10 \div 2 - 9$

(a) 18
(b) 41
(c) 42
(d) 17

Q25. Simplify:

$5 + [7^2 - 6 \times 4\,(12 \div 6)] + 7 \times (5 - 3)$

(a) –2
(b) 20
(c) 363
(d) 19

Q26. Select the number from among the given option that can replace the question mark (?) in the following series.

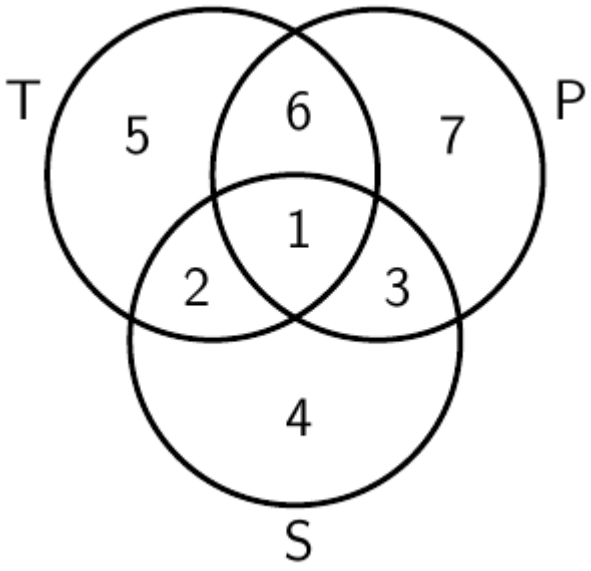
1, 8, 27, 64, 125, ?

(a) 256
(b) 236
(c) 264
(d) 216

Q27. By selling an article for Rs. 2,340, the dealer loses 10% At what price should he sell the article to gain 15%?

(a) Rs. 2,600
(b) Rs. 2,350
(c) Rs. 2,365
(d) Rs. 2,990

Q28. In the given diagram, circle T represent 'teachers', circle S represent 'students' and circle P represent 'principles'. The region are denoted by the numbers 1 to 7. Based on the diagram answer the question given below.



Select the region that represent teachers who are neither students nor principals.

(a) 1
(b) 2
(c) 5
(d) 6

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Q29. In the following series, how many times is the number 8 NOT followed by the number 4 but is preceded by the number 5?

658235812583435654586584 58

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

Q30. In a certain code language, 'RAHUL' is written as '60'. How will 'ARUN' be written as in that language?

(a) 56
(b) 52
(c) 45
(d) 54

Q31. The mean of ages of a group of 35 school students is 16 years. A 52 year old teacher joined the group. Find the mean of the ages of the students and the teacher.

(a) 34 years
(b) 43.5 years
(c) 36 years
(d) 17 years

Q32. Each elements has a name and _____.

(a) a unique chemical symbol
(b) a unique physical symbol
(c) a unique colour
(d) a unique shape

Q33. In a parliamentary system, the legislative, judicial and emergency powers are in reality used by the President only on the advice of the_____.

(a) Council of Ministers
(b) Chief Minister
(c) Members of the Parliament
(d) Vice President

Q34. A hollow metallic sphere has internal and external radius of 3 cm and 5 cm respectively. It is melted and recast as a solid cylinder with radius 7 cm. What is the height of the cylinder?

(a) 3 cm
(b) 8 cm
(c) 8/3 cm
(d) 2/3 cm

Q35. Tea and coffee fall under which category of crops in India?

(a) Horticulture crops
(b) Plantation crops
(c) Cash crops
(d) Food crops

Q36. Four numbers have been given, out of which three are alike in some manner and one is different. Select the different one.

(a) 10
(b) 2
(c) 5
(d) 7

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Q37. Clearance of snow in high altitude areas is undertakes by:

(a) Public Works Department
(b) The Border Road Organisation
(c) Snow Authority of India
(d) Inland Waterways Authority

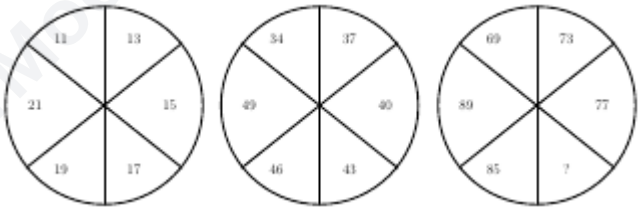
Q38. One of the most important contributions of the British to India in 1853 which enabled people to travel long distance was_____.

(a) the airways
(b) the railways
(c) the roadways
(d) the waterways

Q39. A swimmer, whose speed is 9 km/h in still water, goes 9 km downstream in 45 minutes. Find the speed of the stream.

(a) 6 km/h
(b) 12 km/h
(c) 9 km/h
(d) 3 km/h

Q40. Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



(a) 74
(b) 81
(c) 80
(d) 78

Q41. Simplify:

1.1 + 1.001 + 10.01 + 11.11

(a) 23.14
(b) 3.124
(c) 4.213
(d) 23.221

Q42. Which of the following cities is NOT in Madhya Pradesh?

(a) Raipur
(b) Jabalpur
(c) Bhopal
(d) Gwalior

Q43. Which movie won the 'Best Motion Picture of the Year' award at the Oscars 2020?

(a) Parasite
(b) Black Panther
(c) Bohemian Rhapsody
(d) A Star is Born

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Q44. Anil buys an article with 20% discount on the marked price and sells it at 8% discount on the marked price. Find his profit/loss loss percent.

(a) 12% profit
(b) 15% profit
(c) 15% loss
(d) 12% loss

Q45. The LCM of two numbers is 24 times their HCF. The sum of the HCF and LCM is 750. If one of the numbers is 90, then find the other number.

(a) 240
(b) 30
(c) 720
(d) 25

Q46. The conversion of 0.0 3737... in the form p/q is:

(a) 37/990
(b) 37/999
(c) 37/1000
(d) 37/100

Q47. Ram Sagar and Bhagat Ram enter into a partnership by investing in the ratio 10 : 13. Find Bhagat Ram's share in a profit of Rs. 8,050.

(a) Rs. 4,025
(b) Rs. 4,550
(c) Rs. 1550
(d) Rs. 3,500

Q48. Which of the following IITs has been declared one among the seven Eat Right Campus by FSSAI?

(a) IIT Delhi
(b) IITKanpur
(c) IIT Ropar
(d) IIT Gandhinagar

Q49. In the First Five Year Plan _____, the Government of India sought to get the country's economy out of the cycle of poverty.

(a) 1955-1960
(b) 1947-1952
(c) 1951-1956
(d) 1961-1965

Q50. Select the term that will come next in the following series.

Mercury, Venus, Earth, ?

(a) Uranus
(b) Jupiter
(c) Saturn
(d) Mars

Q51. What is the full form of FORTRAN?

(a) FoxPro Translation
(b) Foreign Translation
(c) Fortitude Translation
(d) Formula Translation

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Q52. How many numbers between 100 and 1000 are completely divisible by 11?

(a) 82
(b) 79
(c) 81
(d) 80

Q53. Which vitamin activates proteins and calcium essential for blood clotting?

(a) Vitamin C
(b) Vitamin D
(c) Vitamin B1
(d) Vitamin K

Q54. In a certain code language, 'FIKA' is written as 'URPZ'. How will 'EHJZ' be written as in that language.

(a) ZSQV
(b) VSQA
(c) VQSZ
(d) AQSV

Q55. The organ of the government that primarily looks after the function of implementation and administration is called the_____.

(a) Legislature
(b) Parliament
(c) Judiciary
(d) Executive

Q56. The length of a hall is 7 m more than its breadth. If its perimeter is 62 m, find the length of the hall.

(a) 34.5 m
(b) 19 m
(c) 27.5 m
(d) 12 m

Q57. The earlier name of Bhabha Atomic Research Center was_____.

(a) Atomic Energy Establishment, Trombay
(b) Indira Gandhi Center for Atomic Research
(c) Nuclear Power Corporation of India Limited
(d) Bharatiya Nabhikiya Vidyut Nigam

Q58. Kumud borrowed some amount at simple interest of 10% per annum for 1 1/2 year. Sneha borrowed the same amount at the same rate on compound interest (compounded semiannually) for the same period. If Sneha paid Rs. 61 more than Kumud as interest, then how much money did each of them borrow?

(a) Rs. 61/80
(b) Rs. 1261/80
(c) Rs. 8,000
(d) Rs. 4,000

Q59. The sum of the digits of a two-digit number is 12. If the digits are reversed, seven times the new number equals to four times the original number. Find the number.

(a) 57
(b) 75
(c) 84
(d) 48

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Q60. When is 'World Environment Day' celebrated?

(a) 30^(th) September
(b) 31^(st) May
(c) 12^(th) April
(d) 5^(th) June

Q61. Which of the following is NOT a desert in India?

(a) Rann of Kutch
(b) The Thar desert
(c) Indus valley desert
(d) Spiti valley cold desert

Q62. The Congress annual session of December 1929 in Lahore was significant because of:

(a) Indians becoming self-reliant
(b) commitment to Purna Swaraj
(c) the work done by the people of the country
(d) the overwhelming majority

Q63. As of October 2020, which of the following is NOT on the World Heritage list?

(a) Agra Fort
(b) Hawa Mahal
(c) Elephanta Caves
(d) Sun Temple

Q64. Four parts of the human body have been listed, out of which three are alike is some manner and one is different, Select the odd one.

(a) Eyes
(b) Nose
(c) Ears
(d) Hair

Q65. The median of 11, 13, 10, 9, 8, 20, 13 is:

(a) 13
(b) 9
(c) 12
(d) 11

Q66. As of November 2020, which team is number one in the ICC men's T20 Cricket rankings?

(a) India
(b) Austraila
(c) England
(d) West Indies

Q67. Viticulture is_____.

(a) vegetable cultivation
(b) mango cultivation
(c) flower cultivation
(d) grape cultivation

Q68. If people cannot be used as a resource they naturally appear as _____ to the economy.

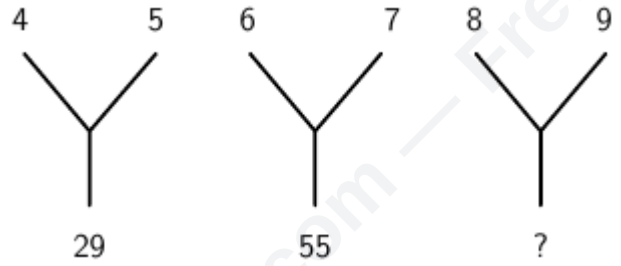
(a) indispensable
(b) an asset
(c) a liability
(d) important

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Q69. If sum of squares of zeroes of the polynomial $x^2 + 9x + 3k$ is 21, then what is the value of k?

(a) –17
(b) 10
(c) 30
(d) 20

Q70. Study the given pattern carefully and select the numbers from among the given options that can replace the question marks (?).



(a) 79
(b) 88
(c) 89
(d) 78

Q71. Which of the following is the tallest tree in the world?

(a) Cedar
(b) Pine
(c) Spruce
(d) Redwood

Q72. Aryan takes twice as much time as Vipin to finish a piece of work. Together they finish the same piece of work in 2 days. In how much time can Vipin do the same work?

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

Q73. Anita and Vineeta divide an amount of Rs.1,950 between themselves in the ratio 6 : 7. If an amount of Rs. 100 is added to each of their shares, what will be the new ratio of their shares?

(a) 900 : 1050
(b) 106 : 107
(c) 20 : 23
(d) 600 : 700

Q74. Study the given grid carefully and select the number from among the given options that can replace the question mark (?).

2	**5**	**8**
3	6	9
4	7	10
29	110	?

(a) 240
(b) 245
(c) 190
(d) 145

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Q75. Gandhiji's campaign against the _____ was in response to the British censorship of the press and detention without trial.

(a) World War I
(b) British Rule
(c) Jallianwala Bagh Massacre
(d) Rowlatt Act

Q76. On which day is World Day to Combat Desertification and Drought observed?

(a) 22nd May
(b) 5^(th) June
(c) 22^(nd)April
(d) 17^(th) June

Q77. Demonetisation was announced by Prime Minister Narendra Modi on:

(a) December 8, 2016
(b) October 8, 2016
(c) November 8, 2016
(d) September 8, 2016

Q78. As a social reformer, Gandhiji believed that Indians had to get rid of social evils. Which of the following is NOT a social evil?

(a) Inflation
(b) Child marriage
(c) Illiteracy
(d) Untouchability

Q79. Which of the following companies stopped making personal computers in 2005?

(a) Dell
(b) Acer
(c) IBM
(d) Asus

Q80. World Health Organisation (WHO) is headquartered in_____.

(a) Amsterdam, Netherlands
(b) Geneva, Switzerland
(c) Vienna, Austria
(d) New York City, America

Q81. Read the given statements and conclusion carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion logically follow(s) from the statements.

Statements :

1. All the potatoes are tomatoes.

2. All the tomatoes are onions.

Conclusions:

I. All the onions are tomatoes

II. All the potatoes are onions.

(a) Only II
(b) Only I
(c) Both I and II
(d) Either I or II

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Q82. _____ is the process under which farmers grow trees for commercial and non-commercial purposes on their lands.

(a) Tree forestry
(b) Farm forestry
(c) Tree conservation
(d) Forest conservation

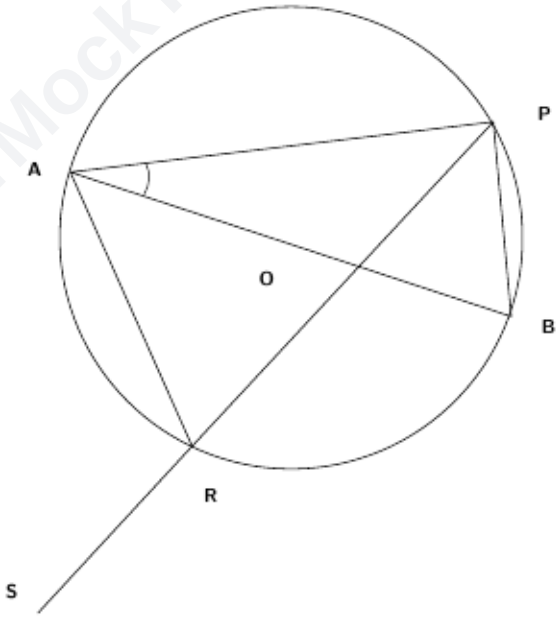
Q83. If the sum of five consecutive numbers is 90, then what is the middle number?

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

Q84. Shah Jahan's daughter _____ participated in many architectural project of the new capital of Shahjahanabad (Delhi).

(a) Gulbadan Begum
(b) Roshanara
(c) Jahanara
(d) Begum Ishrat

Q85. In the given figure O is the centre of the circle. If angle PAB = 35º, then find angle ARS.



(a) 65º
(b) 115º
(c) 125º
(d) 55º

Q86. The following table shows CFC emission (in million metric tons) form various sectors for an industry for a period of 5 years. Based on the table answer the question given below.

Sector				
Year	Cement	Fertiliser	Foam	Pesticides
2015	200	500	80	100
2016	300	600	90	110
2017	320	650	100	120
2018	400	700	150	150
2019	450	800	200	180

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Which sector has recorded the maximum percentage growth in CFC emission from 2015 to 2019?

(a) Cement
(b) Pesticides
(c) Fertiliser
(d) Foam

Q87. The following table shows CFC emissions (in million metric tons) from various sectors for an industry for a period of 5 years. Based on the table answer the question given below.

Sector				
Year	Cement	Fertilizer	Foam	Pesticides
2015	200	500	80	100
2016	300	600	90	110
2017	320	650	100	120
2018	400	700	150	150
2019	450	800	200	180

The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors, was the least in which year?

(a) 2017
(b) 2016
(c) 2019
(d) 2015

Q88. The following table shows CFC emissions (in million metric tons) from various sectors for an industry for a period of 5 years. Based on the table answer the question given below.

Sector				
Year	Cement	Fertiliser	Foam	Pesticides
2015	200	500	80	100
2016	300	600	90	110
2017	320	650	100	120
2018	400	700	150	150
2019	450	800	200	180

What is the percentage growth in CFC emissions from the pesticides sector from 2015 to 2019?

(a) 50%
(b) 70%
(c) 90%
(d) 80%

Q89. The following table shows CFC emissions (in million metric tons) from various sectors for an industry for a period of 5 years. Based on the table answer the question given below.

Sector				
Year	Cement	Fertiliser	Foam	Pesticides
2015	200	500	80	100
2016	300	600	90	110
2017	320	650	100	120

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2018	400	700	150	150
2019	450	800	200	180

What is the approximate contribution in percentage in CFC emissions from the cement sector, in comparison to that of the total CFC emissions from all the sectors in 2017?

(a) 19%
(b) 27%
(c) 24%
(d) 60%

Q90. Read the given statements and decide if the given conclusion is true, false or irrelevant with respect to the statements.

Statements:

I. A is the sister of B.

II. B is the daughter of C.

Conclusion:

B is the enemy of C.

(a) Conclusion drawn is definitely true.
(b) Conclusion drawn is definitely false.
(c) Conclusion cannot be drawn.
(d) Conclusion drawn is probably true.

Q91. Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.

SHGT, UFEV, WDCX, ?

(a) ZABY
(b) AZYB
(c) ZAYB
(d) YBAZ

Q92. If all the odd numbers are removed from 3 to 39, then how many numbers remain?

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

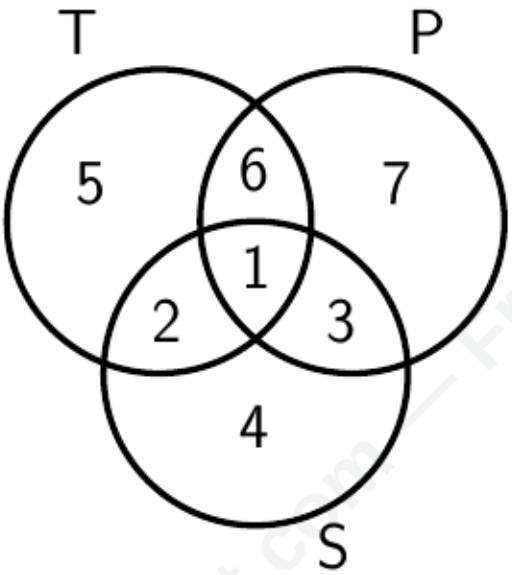
Q93. Select the option that is related to the third in the same way as the second term is related to the first term.

Apple : Fruit :: Bottle Gourd : ?

(a) Snack
(b) Vegetable
(c) Food
(d) Fruit

Q94. In the given diagram, circle T represents 'teachers', circle S represents 'students' and circle P represents 'principals'. The regions are denoted by the numbers 1 to 7. Based on the diagram answer the question given below.

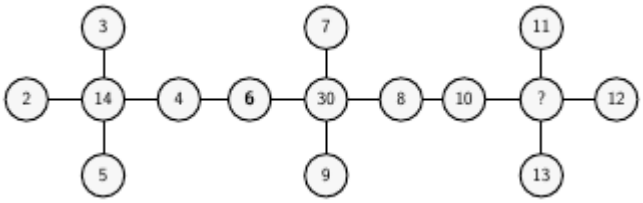
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Select the region that represent principals who are both, teachers and students.

(a) 1
(b) 3
(c) 7
(d) 6

Q95. Study the given pattern carefully and select the numbers from among the given options that can replace the question marks (?).



(a) 26
(b) 46
(c) 62
(d) 64

Q96. Select the alphanumeric-cluster from among the given options that can replace the question mark (?) in the following series.

A1Z, D4W, G7T, ?

(a) Q10J
(b) Q17J
(c) J17S
(d) J10Q

Q97. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion logically follow(s) from the statements.

Statements :

(a) Some doctors are soldiers.

(b) All managers are soldiers.

Conclusions :

(i) All doctors are soldiers.

(ii) Some soldiers are managers.

(iii) All solders are doctors.

(iv) Some doctors are managers.

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

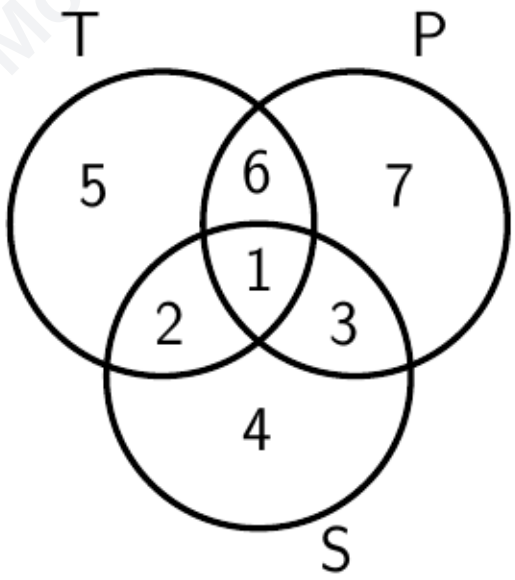
Q98. In a certain code, if MORTAL is rearranged as TORMLA, how would PEOPLE be rearranged in the same code?

(a) PEOPEL
(b) PPOELE
(c) PEOLEP
(d) PEPOEL

Q99. If Ram is the brother of the son of Mohan, then how is Ram related to Mohan?

(a) Grandson
(b) Son
(c) Brother
(d) Father

Q100. In the given diagram, circle T represents 'teachers', circle S represents 'students' and circle P represents 'principals'. The regions are denoted by the numbers 1 to 7. Based on the diagram answer the question given below.



Select the region that represents principles who are students but not teachers.

(a) 3
(b) 6
(c) 2
(d) 1

ANSWER KEY

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

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

SOLUTIONS

Q1. Answer: (c) 84

Given:

LCM of 14, 21 and 28

Concept used:

LCM - The least common multiple or lowest common multiple, or smallest common multiple of two integers a and b usually denoted by lcm (a, b) is the smallest power integer that is divisible by both a and b.

Calculation:

LCM of 14, 21 and 28 is

=> 2 × 2 × 3 × 7

=> 84

Therefore The required LCM is 84

Q2. Answer: (d) Steve Jobs

The correct answer is Steve Jobs.

Key Points

• Apple

• Apple is an American multinational technology company.

• It was founded in 1976 by Steve Jobs, Steve Wozniak and Ronald Wayne.

• Apple is the largest information technology company by revenue.

• It is one of the Big Five American information technology companies, alongside Amazon, Google, Meta, and Microsoft.

• Current CEO- Tim Cook

Additional Information

• Bill Gates

• He is an American business magnate, software developer, investor, author, and philanthropist.

• He is a co-founder of Microsoft, along with his late childhood friend Paul Allen.

• Charles Flint

• He was the founder of the Computing-Tabulating-Recording Company which later became IBM.

• He was an avid sportsman and member of the syndicate that built the yacht Vigilant.

Q3. Answer: (d) Srinagar

The correct answer is Srinagar.

Key Points

• Indira Gandhi Memorial Tulip garden

• Indira Gandhi Memorial Tulip garden is a tulip garden in Srinagar.

• It is previously known as Model Floriculture Center.

• It is the largest tulip garden in Asia spread over an area of about 30 ha.

• It is situated on the foothills of Zabarwan Range with an overview of Dal Lake.

• The Tulip Garden is home to around 65 varieties of tulips.

Q4. Answer: (d) 1/2

Given:

$\sin\theta - \sqrt{3}\cos\theta = 0$

Formula used:

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tan 60° = √3

sin 60° = √3/2

cos 60° = 1/2

Calculation:

Sinθ – √3 cosθ = 0

=> Sinθ = √3 Cosθ

=> tanθ = √3

=> θ = 60°

Now,

sin2θ – cos2θ = sin²60° – cos²60°

=> (√3/2)² – (1/2)²

=> (3/4 – 1/4)

=> (3 – 1)/4

=> 2/4

=> 1/2

Therefore Required value is 1/2

Q5. Answer: (b) 35%

Given:

Mohit got 30% marks and failed by 25 marks

Another student scored 38% and

He got 15 more marks than passing marks

Calculation:

According to the question

=> 30% + 25 = 38% – 15

=> (38% – 30%) = (15 + 25)

=> 8% = 40

=> 1% = 5 marks

Now,

5% = 25 marks

Then,

The necessary pass percentage required = (30% + 5%)

=> 35%

Therefore Required pass percentage is 35%

Q6. Answer: (d) Mg

The correct answer is Mg.

Key Points

• Magnesium is a chemical element with the symbol Mg.

• Its atomic number is 12.

• It is a shiny grey solid.

• Magnesium occurs naturally only in combination with other elements.

• It is the eighth-most abundant element in the Earth's crust.

• Magnesium is the eleventh most abundant element by mass in the human body and is essential to all cells and some 300 enzymes.

Q7. Answer: (b) 216

Concept Used:

Follow the BODMAS rule according to the table given below:

Calculation:

5 × 42 – 3 + 27 ÷ 3

=>5 × 42 – 3 + 9

=> 210 – 3 + 9

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=> 219 - 3

=> 216

Therefore The required value is 216

Q8. Answer: (b) 3.2 ft

Shortcut Trick

Initial base = $\sqrt{(10^2 - 8^2)} = \sqrt{(100 - 64)} = 6$ ft

Final base = $\sqrt{(10^2 - 9.6^2)} = \sqrt{(100 - 92.16)} = 2.8$ ft

Distance moved towards the wall = 6 − 2.8 = 3.2 ft

Therefore The correct answer is 3.2 ft.

Alternate Method

Given:

Length of the ladder (Hypotenuse) = 10 ft

Initial height of the wall (Perpendicular1) = 8 ft

Final height of the wall (Perpendicular2) = 9.6 ft

Formula Used:

Pythagoras Theorem: Hypotenuse^2 = Perpendicular^2 + Base^2

Calculations:

Let the initial distance of the ladder from the wall be x ft.

=> $10^2 = 8^2 + x^2$

=> $100 = 64 + x^2$

=> $x^2 = 36$ => x = 6 ft

Let the final distance of the ladder from the wall be y ft.

=> $10^2 = 9.6^2 + y^2$

=> $100 = 92.16 + y^2$

=> $y^2 = 7.84$ => y = 2.8 ft

Distance the ladder moved towards the wall:

=> Distance = x − y

=> Distance = 6 − 2.8 = 3.2 ft

Therefore The correct answer is 3.2 ft.

Additional Information

Pythagoras Theorem

In a right-angled triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides: $a^2 + b^2 = c^2$.

Pythagorean Triplets

Sets of three integers that satisfy the Pythagoras theorem. Common examples include (3, 4, 5), (5, 12, 13), and (8, 15, 17). The first part of this question directly scales the (3, 4, 5) triplet into (6, 8, 10).

Distance vs Displacement

While the ladder length remains constant, solving for the shifting horizontal and vertical distances requires treating the movement as two completely separate right-angled triangles.

Q9. Answer: (c) 15√3/(2+√3) m

Given:

Height of tree = 15 m

Formula used:

tan 60° = √3

$H^2 = P^2 – B^2$

Calculation:

According to the question

$H2 = P2 + B^2$

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

=>(3 + 1)

=> H = 2

Now,

=> 2 + √3 = 15

=> 1 = 15/(2 + √3)

Then,

=> √3 = 15/(2 + √3)

=> 15/(2 + √3) × √3

=> 15√3/(2 + √3) m

Therefore Required height from the bottom is the tree broken is 15√3/(2+√3) m

Q10. Answer: (d) IRDAI

The correct answer is IRDAI.

Key Points

• The Insurance Regulatory and Development Authority of India (IRDAI) is a regulatory body under the jurisdiction of the Ministry of Finance, Government of India.

• It is tasked with regulating and licensing the insurance and re-insurance industries in India.

• It was constituted by the Insurance Regulatory and Development Authority Act, 1999, an Act of Parliament passed by the Government of India.

Additional Information

• CRISIL

• CRISIL is an Indian analytical company providing ratings, research, risk, and policy advisory services.

• It is a subsidiary of the American company S&P Global.

• CRISIL was the first credit rating agency in India, introduced in 1988 by the ICICI and UTI jointly with share capital coming from SBI, LIC and United India Insurance Company.

Q11. Answer: (a) Polar Satellite Launch Vehicle

The correct answer is Polar Satellite Launch Vehicle

Key Points

• PSLV (Polar S.atellite Launch Vehicle) is an indigenously-developed expendable launch system of the ISRO (Indian Space Research Organization).

• PSLV is the third generation launch vehicle of India and is the first Indian launch vehicle to be equipped with liquid stages.

• PSLV has a four-stage system comprising a combination of solid and liquid-fuelled rocket stages.

• All the operations of PSLV are controlled from the Satish Dhawan Space Center, Sriharikota, east coast, India.

• Some remarkable launches by PSLV are Chandrayaan-1 (First Indian lunar probe), Mangalyaan-1 (First Mars Orbiter Mission by India) and Astrosat (First Indian dedicated multi-wavelength space observatory).

Q12. Answer: (a) 1911, Kolkata

The correct answer is 1911, Kolkata.

Key Points

• The National Anthem was first sung on the second day of the annual conference of the Indian National Congress (INC) in Kolkata on December 27, 1911.

• It was written in (Tatsama) Bengali.

National Anthem

• 'Jana Gana Mana' is the first stanza of the Bengali chant 'Bharoto Bhagryo Bidhata', penned by Nobel Laureate Rabindranath Tagore.

• The song "Jana Gana Mana" was first printed under the title "Bharat Vidhata" in Tattva Bodhini Patrika in January 1912.

• It takes about 52 seconds for its total completion, while it takes 20 seconds for the first and last lines of the stanza.

• There is a total of five stanzas in our National Anthem.

• The Hindi version of the National Anthem was adopted by the Constituent Assembly on 24 January 1950.

• The original composition written by Rabindranath Tagore was translated into Hindi by Abid Ali.

Q13. Answer: (c) 30

The logic followed here is:

We add place value of all letters, we get answer:-

L(12) E(5) G(7) A(1) L(12) = 12 + 5 + 7 + 1 + 12 = 37,

Similarly,

E(5) A(1) G(7) L(12) E(5) = 5 + 1 + 7 + 12 + 5 = 30.

Hence, "option 3" is the correct answer.

Q14. Answer: (d) Aravind Adiga

The correct answer is Aravind Adiga.

Key Points

• The White Tiger

• It is a novel by Indian author Aravind Adiga.

• It was published in 2008 and won the 40^(th) Man Prize.

• It provides a darkly humorous perspective of India's class struggle in a globalized world as told through a retrospective narration from Balram Halwai, a village boy.

Q15. Answer: (a) 8

Given:

√(51+√(134+5√(42+√16+√9)))

Calculation:

√(51+√(134+5√(42+√16+√9)))

√(51+√(134+5√(42+√16+3)))

=> √(51+√(134+5√(42+4+3)))

=> √(51+√(134+5(7)))

=> √(51+√(134+35)))

=> √(51+√169)

=> √(51+13)

=> √64

=> 8

Therefore The required value is 8

Q16. Answer: (a) 3 days

Given:

Number of work completed by 16 men = 12 days

Number of work completed by 12 women = 32 days

Number of work completed by 16 men and 16 women together = 4 days

Formula used:

Work = Efficiency × Time

Calculation:

According to the question

=> 16m × 12 = 12w × 32

=> m = 2w

=> m/w = 2/1

Efficiency of 1 man = 2 units and Efficiency of 1 woman = 1 unit

Total work = 16m × 12 = (16 × 2 × 12)

=> 384 units

Work done by 16 men and 16 women = 4 days

=> 16 women = 8 men [1 man = 2 women]

Total men who worked for 4 days = 16 + 8 = 24

So, the amount of work done by 24 men in 4 days = 24 × 2 × 4 = 192 units

Work remaining = (384 – 192) = 192 units

Now, 16 more men joined, so total men = 16 + 16 = 32

Work done by 32 men in 1 day = 32 × 2 = 64 units

The total number of days taken by 32 men to complete the remaining work = 192/64

=> 3 days

Therefore The required time to complete the remaining work by men is 3 days

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Q17. Answer: (d) Dog

The logic followed here is:

All Cow, Sheep and Goat except dog came under the category of cattle.

Hence, "option 4" is the correct answer.

Q18. Answer: (b) 5 permanent and 10 non-permanent members

The correct answer is 5 permanent and 10 non-permanent members.

Key Points

• UN Security Council

• The Security Council has primary responsibility for the maintenance of international peace and security.

• It is one of the six principal organs of the United Nations (UN).

• It is consists of 15 members of which 5 are permanent while the other 10 are non-permanent members.

• The permanent members are China, Russian Federation, France, the USA, and the United Kingdom.

Additional Information

• The UNO was formed on 24 October 1945.

• It was founded in San Francisco, USA.

• The headquarters were shifted to New York in 1946.

Q19. Answer: (c) Mirage

The correct answer is Mirage.

Key Points

• A mirage is a naturally-occurring optical phenomenon in which light rays bend via refraction to produce a displaced image of distant objects or the sky.

• A superior mirage is one in which the mirage image appears to be located above the real object.

• Mirage is caused due to total Internal Reflection of light by the various layers of air.

Additional Information

• Reflection

• Reflection is the change in direction of a wavefront at an interface between two different media so that the wavefront returns into the medium from which it originated.

• The law of reflection says that for specular reflection the angle at which the wave is incident on the surface equals the angle at which it is reflected.

• Diversion

• The act of changing the direction or purpose of something, especially in order to solve or avoid a problem is called diversion.

• Scattering

• Scattering is used to describe a wide range of physical processes where moving particles or radiation of some form, such as light or sound, are forced to deviate from a straight trajectory by localized non-uniformities in the medium through which they pass.

Q20. Answer: (c) 1/10

Calculation:

(1-1/2) (1-1/3) ..... (1-1/9) (1-1/10)

=> (1 – 1/2) (1 – 1/3) (1 – 1/4) (1 – 1/5).....(1 – 1/9) (1 – 1/10)

=> 1/2 × 2/3 × 3/4 × 4/5....8/9 × 9/10

=> 1/10

Therefore The required value is 1/10

Q21. Answer: (b) 3/2 years

Given:

Principal = Rs. 18,000

SI = Rs. 2700

Rate = 10%

Formula used:

SI = (P × R × T)/100

Calculation:

According to the question

=> 2700 = (18000 × 10 × t)/100

=> 2700 = 1800t

=> t = 2700/1800

=> t = 3/2

Therefore The required time is 3/2 years

Q22. Answer: (c) dengue

The correct answer is Dengue.

Key Points

• Dengue is a mosquito-borne tropical disease caused by the dengue virus.

• Its symptoms typically begin three to fourteen days after infection.

• Its symptoms include a high fever, headache, vomiting, muscle, and joint pains, and a characteristic skin rash.

• It generally takes two to seven days.

Additional Information

• Typhoid

• It is a common bacterial disease.

• Its causative agent is the bacteria Salmonella typhi, which enters the small intestine through contaminated water and food and migrates to other organs of the body through blood.

• Its symptoms include high fever weakness, stomach pain, constipation, headache, and loss of appetite.

• Widal test is the diagnostic test for typhoid.

• Malaria

• It is a common disease caused by a protozoan Plasmodium species.

• Its transmitting agent is the female Anopheles mosquito that transfers the sporozoites of Plasmodium.

• Malaria may also cause anemia and jaundice because of the loss of red blood cells.

• Cholera

• Cholera is an infectious disease that caused severe watery diarrhea.

• It can lead to dehydration and even death if untreated.

• It is caused by eating food or drinking water contaminated with a bacterium called Vibrio cholera.

Q23. Answer: (d) 6-14 years

The correct answer is 6-14 years.

Key Points

• Sarva Shiksha Abhiyan provides elementary education to all children in the age group of 6 to 14 years.

• It is the Indian Government's flagship program for the achievement of the Universalization of Elementary Education.

• It is also mentioned in the 86th Amendment to the Constitution of India to make free and compulsory education. It is a fundamental right.

• According to Article 21A of the Indian constitution, the state shall provide free and compulsory education to all children aged between 6 to 14 years.

• It was implemented during the 9th five-year plan in India.

• Padhe Bharat Badhe Bharat is a nationwide program under the Sarva Shiksha Abhiyan.

• Sarva Shiksha Abhiyan along with Rashtriya Madhyamik Shiksha Abhiyan was launched to form Samagra Shiksha Abhiyan in 2018.

Q24. Answer: (d) 17

Concept Used:

Follow the BODMAS rule according to the table given below:

Calculation:

6 + 4 × 10 ÷ 2 – 9

=>6 + 4 × 5 – 9

=> 6 + 20 – 9

=> 26 – 9

=> 17

Therefore The required value is 17

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Q25. Answer: (b) 20

Concept Used:

Follow the BODMAS rule according to the table given below:

Calculation:

5 + [72 – 6 × 4 (12 ÷ 6)] + 7 × (5 – 3)

=>5 + [49 – 6 × 4 (12 ÷ 6)] + 7 × (5 – 3)

=> 5 + [49 – 6 × 4 × 2] + 7 × (5 – 3)

=> 5 + [49 – 48] + 7 × (5 – 3)

=> 5 + 1 + 7 × (5 – 3)

=> 5 + 1 + 7 × 2

=> 5 + 1 + 14

=> 20

Therefore The required value is 20

Q26. Answer: (d) 216

The logic followed here is:

The numbers in the series are cubes of natural numbers.

Hence, "option 4" is the correct answer.

Q27. Answer: (d) Rs. 2,990

Given:

SP of an article = Rs. 2,340

Loss = 10%

Gain = 15%

Formula used:

SP = CP × [(100 – Loss%)/100]

SP = CP × [(100 + Gain%)/100]

Calculation:

According to the question

SP = CP × [(100 – Loss%)/100]

=> 2,340 = CP × [(100 – 10)/100]

=> 2,340 = CP × 90/100

=> CP = (2,340 × 100/90)

=> CP = Rs. 2,600

New SP = (2,600 × 115/100)

=> Rs. 2,990

Therefore The required SP is Rs. 2,990

Alternate Method Let CP be 100%

So, SP if loss% is 10 = 90%

Now,

=> 90% = Rs. 2,340

Then,

=> 115% = Rs. (2,340 × 115/90)

=> Rs. (26 × 115)

=> 2,990

Therefore The required SP is Rs. 2,990

Q28. Answer: (c) 5

The Venn diagram is given below:-

The shaded part is the teachers who are neither students nor principals.

So, 5 teacherrs who are neither students nor principals.

Hence, "option 3" is the correct answer.

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Q29. Answer: (a) 5

The logic followed here is:

Condition to be checked:

i) The number 8 not followed by the number 4 but is preceded by the number 5 are given below:-

5 → 8 → Not 4 (4)

6 5 8 2 3 5 8 1 2 5 8 3 4 3 5 6 5 4 5 8 6 5 8 4 5 8

So, there are 5 pairs in which the number 8 is not followed by the number 4 but is preceded by the number 5.

Hence, "option 1" is the correct answer.

Mistake Points

Immediately preceded by means immediately before or to come just before.

Immediately followed by means immediately after or to come just after.

Q30. Answer: (d) 54

The logic followed here is:

We add place value of all letters, we get answer:-

R(18) A(1) H(8) U(21) L(12) = 18 + 1 + 8 + 21 + 12 = 60,

Similarly,

A(1) R(18) U(21) N(14) = 1 + 18 + 21 + 14 = 54.

Hence, "option 4" is the correct answer.

Q31. Answer: (d) 17 years

Given:

The mean of ages of a group of 35 students = 16 years

Age of teacher = 52 years

Formula used:

Average = Sum of observations/Number of observations

Calculation:

According to the question

The mean ages of 35 students = (35 × 16)

=> 560

A old teacher joined the group = (52 + 560)

=> 612

Now,

The total age of students and teacher = (35 + 1) = 36

The mean ages of the students and teacher = (612/36)

=> 17

Therefore Required ages is 17 years

Q32. Answer: (a) a unique chemical symbol

The correct answer is a unique chemical symbol.

Key Points

• An element is a naturally occurring pure substance made up of the same type of atoms.

• They have identical nuclei consisting of the same number of protons.

• There are 118 elements found in nature and are arranged in a table according to their atomic number known as the Periodic Table.

• The elements are represented by their symbols.

• Each element has a unique symbol and some of the symbols are derived from their Latin names.

• The periodic table shows us all the elements and their symbols.

Q33. Answer: (a) Council of Ministers

The correct answer is Council of Ministers

Key Points

• Prime Minister and other Ministers are collectively known as Council of Ministers.

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• There are three categories of the Ministers viz Cabinet Ministers, Minister of State, and Deputy Ministers.
• All of them are appointed by the President of India.
• The total number of ministers cannot exceed 15% of the total strength of the Lok Sabha.
• Every Minister is responsible for the acts of the officers of his department.
• He has to answer questions regarding the affair of his department in Parliament.

Additional Information

• The President
• The Indian President is the head of the state (article 52) and he is also called the first citizen of India.
• The President is the supreme commander of the defense forces of India.
• He has pardoning power under article 72.
• Once President is elected he holds office for five years.
• President is a part of Union Executive provisions of which are dealt with Article 52-78 including articles related to President.
• Chief Minister
• Article 167 of the Indian Constitution defines the duties of the Chief Minister.
• A chief minister is understood to be "first among equals".
• Chief Minister must be a citizen of India.
• Chief Minister should be a member of the state legislature.
• Chief Minister must be 25 years of age or more.

Q34. Answer: (c) 8/3 cm

Given:

The internal radius of hollow sphere = 3 cm

The external radius of hollow sphere = 5 cm

Radius of cylinder = 7 cm

Formula used:

Volume of hollow sp

here = $4/3\pi \times (R^3 - r^3)$Volume of cylinder = $\pi r^2 h$

Calculation:

According to the question

Volume of hollow sphere = $4/3 \times \pi \times (5^3 - 3^3)$

=> $4/3 \times \pi \times (125 - 27)$

=> $4/3 \times \pi \times 98$

=> $392\pi/3$ cm^3

Now,

Volume of cylinder = volume of the sphere

=> $\pi r^2 h = 392\pi/3$

=> $\pi \times (7)^2 \times h = 392\pi/3$

=> $49\pi \times h = 392\pi/3$

=> $h = (392\pi/49\pi \times 3)$

=> h = 8/3 cm

Therefore The height of the cylinder is 8/3 cm

Q35. Answer: (b) Plantation crops

The correct answer is Plantation crops.

Key Points

• Plantation crops

• The term plantation crops refer to those crops which are cultivated on an extensive scale in a contiguous area owned and managed by an individual or a company.

• The crops include tea, coffee, rubber, cocoa, coconut, areca nut, oil palm, palmyra, and cashew.

• These are high-value commercial crops of greater economic importance and play a vital role in improving the Indian economy, especially in view of their export potential, employment generation and poverty alleviation, particularly in the rural sector.

• Tea, Coffee and rubber are dealt with by the Ministry of Commerce, while Coconut, cashew nut, cocoa, areca nut, oil palm yrah come under the Ministry of Agriculture.

Additional Information

• Horticulture crops

• Horticultural crops include fruits, vegetables, medicinal, aromatic, and ornamental plants.

• These crops are important dietary nutritional components and sources of medicines and aroma along with significant esthetic values for human beings.

• Adoption of horticulture is also becoming essential to meet the demands of fruits, vegetables, and other horticultural products for the fast-growing population of the world.

• Cash crops

• Cash crops are agricultural crops that are planted for the purpose of selling on the market or for export to make a profit, as distinguished from subsistence crops planted for the purpose of self-supple of the farmer.

• Cash crops are grown on a large scale and sometimes compete with the land use and resource requirements of the local community.

• Food crops

• The crops that are grown to feed the human population are known as food crops.

• There are a number of food crops grown in the country.

• Cassava, maize, plantains, potatoes, rice, sorghum, soybeans, sweet potatoes, wheat, and yams are some of the leading food crops around the world.

Q36. Answer: (a) 10

The logic followed here is:

2, 5 and 7 are the prime number but 10 is non prime number.

Prime number:- A number that can be divided exactly only by itself and 1.

Hence, "option 1" is the correct answer.

Q37. Answer: (b) The Border Road Organisation

The correct answer is The Border Road Organisation.

Key Points

• The Border Roads Organisation (BRO) is a road construction executive force in India that provides support to and is a part of the Indian Armed Forces.

• BRO develops and maintains road networks in India's border areas and friendly neighboring countries.

• It includes infrastructure operations in 19 states and three union territories and neighboring countries such as Afghanistan, Bhutan, Myanmar, Tajikistan, and Sri Lanka.

• BRO is instrumental in significantly upgrading and building new India-China Border Roads.

Additional Information

• Inland Waterways Authority

• It is the statutory authority in charge of the waterways in India.

• It was constituted under IWAI Act-1985 by the parliament of India.

• Its headquarters is located in Noida, UP.

• India has an extensive network of inland waterways in the form of rivers, canals, backwaters, and creeks.

Q38. Answer: (b) the railways

The correct answer is the railways.

Key Points

• The first passenger train ran in India on 16th April 1853 from Bombay to Thane.

• Railways in India were introduced during the rule of Lord Dalhousie.

• The main reason for starting railways in India is to transport goods from one place to another.

• The British rule has helped India in several technological developments since in history.

• The introduction of the railway system helped India in economical developments in India.

• It is important for a country to be developed in the following things such as technology, population, economical developments.

• The length of a normal Indian train is about 600-640 meters but the length of the first train was nearly 21 miles.

Q39. Answer: (d) 3 km/h

Given:

Speed of swimmer in still water = 9 km/h

Downstream = 9 km

Time = 45 min = (45/60) = 3/4

Formula used:

Speed = Distance/Time

Calculation:

Let the speed of the stream be x km/h

According to the question

=> 9 + x = 9/(3/4)

=> 9 + x = (9 × 4/3)

=> 9 + x = 12

=> x = (12 – 9)

=> x = 3 km/h

Therefore The speed of the stream is 3 km/h

Q40. Answer: (b) 81

The logic followed here is:

Hence, "option 2" is the correct answer.

Q41. Answer: (d) 23.221

Calculation:

1.1 + 1.001 + 10.01 + 11.11

=> 2.101 + 10.01 + 11.11

=> 12.111 + 11.11

=> 23.221

Therefore The required value is 23.221

Q42. Answer: (a) Raipur

The correct answer is Raipur.

Key Points

• Madhya Pradesh

• Capital- Bhopal

• National bird- Indian paradise flycatcher

• National animal- Barasingha

• National tree- Banyan tree

• National parks- Bandhavgarh National Park, Fossil National Park, Indira Priyadarshini Pench National Park, Kanha National Park, Madhav National Park, Madhav National park, Panna National park, Sanjay National Park, Satpura National Park, Van Vihar National Park.

• Raipur

• Raipur is the capital city of the Indian state of Chhattisgarh.

• Raipur is also the administrative headquarters of the Raipur District and Raipur division, and the largest city of the state.

• It was a part of Madhya Pradesh before the state of Chhattisgarh was formed on 1 November 2000.

Q43. Answer: (a) Parasite

The correct answer is Parasite.

Key Points

• The 92nd Academy Awards were presented by the Academy of Motion Picture Arts and Sciences.

• The event took place in February 2020.

• Parasite won the Oscar Awards 2020 for Best Picture.

• It is the first time that a South Korean movie has won the International Feature Film Category in the history of the Oscars.

• The director of the movie is Bong Joon Hoo, who also won the Oscar Award for Best Direction.

• Parasite won four academy awards- for Best Picture, Director, Original Screenplay, and International Feature Film.

Additional Information

• Other important awards are given were-

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• Actress in Supporting role- Laura Dern
• Cinematography- Roger Deakins
• Costume Design- Jacqueline Durran
• Documentary- American Factory
• Adapted Screen Play- Jojo Rabbit

Q44. Answer: (b) 15% profit

Given:
CP at discount = 20%
SP at discount = 8%
Formula used:
Profit = SP – CP
Profit% = (Profit/CP × 100)
Calculation:
Let the listed price be Rs. 100
According to the question
CP at 20% discount = [(100 – 20)/100 × 100]
=> (80/100 × 100)
=> 80
SP at 8% discount = [(100 – 8)/100 × 100]
=> (92/100 × 100)
=> 92
Profit = (92 – 80)
=> 12
Profit% = (12/80 × 100)
=> 15%
Therefore His profit% is 15
Alternate MethodCP : SP = (100 - 20) : (100 - 8)
=> CP : SP = 80 : 92
=> 20 : 23
Profit % = [(23 - 20)/20] × 100
=> 15%

Q45. Answer: (a) 240

Given:
The LCM of two numbers = 24 times their HCF
The sum of HCF and LCM = 750
One number = 90
Concept used:
Product of two numbers = HCF × LCM
Calculation:
Let the LCM and HCF be x and y respectively
=> x = 24y .....(1)
=> x + y = 750 ....(2)
Adding both the equations we get,
=> 24y + y = 750
=> 25y = 750
=> y = 30
Now put the value of y in equation (2) we get,
=> x + 30 = 750
=> x = (750 – 30)
=> x = 720

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The other number = (HCF × LCM)one number

=> (720 × 30)/90

=> 240

Therefore The other number is 240

Q46. Answer: (a) 37/990

Calculation:

Let x = 0.037...(1)

Multiplying by 10 in equation (1)

=> 10x = 0.37 ...(2)

Multiplying by 100 in equation (2)

=> 1000x = 37...(3)

Subtracting equation (2) from (3)

=> (1000x – 10x) = (37.37 – 0.37)

=> 990x = 37

=> x = 37/990

Therefore The value of p/q is 37/990

Q47. Answer: (b) Rs. 4,550

Given:

Ratio of Ram Sagar and Bhagat Ram's = 10 : 13

Total profit = Rs. 8,050

Calculation:

Let the ratio of Ram Sagar and Bhagat Ram's be 10x and 13x respectively

According to the question

=> (10x + 13x) = 8,050

=> 23x = 8,050

=> x = 350

Now,

The share of Bhagat Ram's share = 13x = (13 × 350)

=> Rs. 4,550

Therefore Required share of Bhagat Ram's is Rs. 4,550

Q48. Answer: (d) IIT Gandhinagar

The correct answer is IIT Gandhinagar.

Key Points

• IIT Gandhinagar became India's first educational institute to receive Eat Right Campus Award from FSSAI.

• The award will be conferred by FSSAI in New Delhi on June 07, 2019, on the occasion of World Food Safety Day.

• IIT Gandhinagar received a five-star rating in the Eat Right Campus audit, for ensuring food safety and promoting healthy eating.

• IITGN enured high standards for the quality of food served at its dining halls and the other eating joint.

Additional Information

• FSSAI

• Food Safety and Standards Authority of India (FSSAI) is an autonomous statutory body established under the Food Safety and Standards Act, 2006 (FSS Act).

• Ministry of Health & Family Welfare, Government of India is the administrative Ministry of FSSAI.

• FSSAI was formed in August 2011.

• Its headquarter is in New Delhi.

• It has 4 regional offices.

• Arun Singhal is the current CEO of FSSAI.

• The current Agriculture Minister is Narender Singh Tomar.

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Q49. Answer: (c) 1951-1956

The correct answer is 1951-1956.

Key Points

• First Five Year Plan

• The first Five-year plan was for the period of 1951 to 1956.

• The target growth was 2.1% and the actual growth was 3.6%.

• It was based on the Harrod-Domar modal.

• The influx of refugees, severe food shortage & mounting inflation confronted the country at the onset of the first five years plan.

• The primary aim of the first five-year plan was to improve the living standards of the people of India.

• This could be done by making judicious use of India's natural resources.

• The Plan focussed on agriculture, price stability, power, and transport.

Additional Information

• Second Five year Plan (1956-1961)

• The second five-year plan is based on the Mahalanobis model.

• This was the USSR model Indianized by PC Mahalanobis, the founder of the Indian Statistical Institute.

• Third Five-Year Plan (1961-1966)

• The Third five-year plan focused on agriculture & enhancement in the production of wheat, but the succinct Sino - Indian War in the year 1962 exposed flaws in the economy and shifted the spotlight towards the Defence industry.

• Fourth Five Year Plan (1969-1974)

• The fourth five Year Plan was the first plan launched by the Indira Gandhi government amid the pressure of drought, devaluation, and inflationary recession.

• The country was fighting with population explosion, increased unemployment, poverty, and a shackling economy. In addition, the situation in East Pakistan was becoming dire as the Indo-Pakistani War of 1971 and Bangladesh Liberation War took place.

Q50. Answer: (d) Mars

The logic followed here is:

Here is the order of the planets, starting nearest from the sun and going away in the solar system.

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.

Hence, "option 4" is the correct answer.

Important Points

1. Mercury (nearest to the sun)

2. Venus (Evening star, hottest planet)

3. Earth (Only living planet, blue planet)

4. Mars (the red planet)

5. Jupiter (largest planet in the solar system)

6. Saturn (a planet with rings)

7. Uranus (coldest planet)

8. Neptune (farthest to the sun)

• All Planets in our solar system rotates counterclockwise i.e. West to East except for Venus and Uranus.

• Two planets Venus and Uranus are rotating from east to west in our solar system.

• Venus and Uranus are rotating in the opposite direction (clockwise) to the Sun, this is also known as a retrograde rotation.

Q51. Answer: (d) Formula Translation

The correct answer is Formula Translation.

Key Points

• Formula Translation(FORTRAN)

• FORTRAN is the first high-level programming language developed by John Backus in 1957.

• It was basically designed to write programs for high-performance computing.

• It is mainly suited for numeric computing, scientific computing, and scientific applications that involve extensive mathematical computations. The main motive behind its design was to translate math formulas into code.

Q52. Answer: (c) 81

Concept used:

Divisibility rule of 11 - The difference between the sum of digits and the odd and even places equals 0 or divisible by 11

$t_n = a + (n – 1) d$

where, a = first number

d = common difference (t2 – t1)

n = last number

Calculation:

The first number between 100 and 1000 divisible by 11 = 110

The last number between 100 and 1000 divisible by 11 = 990

The numbers is 110, 121, 132, ...990

=> a = 110, d = (121 – 110) = 11, n = 990

According to the question

tn = a + (n – 1) d

=> 110 + (n – 1) × 11 = 990

=> 110 + 11n – 11 = 990

=> 11n – 11 = (990 – 110)

=> 11n – 11 = 880

=> 11n = (880 + 11)

=> 11n = 891

=> n = 81

Therefore Required numbers is 81

Q53. Answer: (d) Vitamin K

The correct answer is Vitamin K.

Key Points

• Vitamins

• Vitamins are chemical compounds that are required in small amounts for growth and good health and are obtained from our food.

• The vitamins are not synthesized in the body that's why they must be supplied through the diet.

• Vitamin K

• It helps in blood clotting and the prevention of excessive bleeding.

• There are three derivatives of vitamin K- K1 (Phylloquinone), K2 (Menaquinone), and K3 (Menadione).

Additional Information

• Vitamin C

• Vitamin C is a water-soluble compound found in living organisms.

• It is an essential nutrient for various metabolism in our body and also serves as a reagent for the preparation of many materials in the pharmaceutical and food industry.

• Vitamin C also known as ascorbic acid is an essential nutrient in many multicellular organisms, especially in humans.

• Ascorbic acid is a water-soluble vitamin and is found in variable quantities in fruits and vegetables and organ meats.

Vitamins	Chemical Name	Deficiency Disease
Vitamin A	Retinol	Night Blindness
Vitamin B1	Thiamine	Beri-Beri
Vitamin B2	Riboflavin	Angular Stomatitis
Vitamin B3	Niacin	Pellagra
Vitamin B5	Pantothenic Acid	Paresthesia
Vitamin B6	Pyridoxine	Anaemia
Vitamin B7	Biotin	Dermatitis
Vitamin B9	Folic Acid	Megaloblastic Anemia

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Vitamin B12	Methylcobalamin	Anaemia
Vitamin C	Ascorbic Acid	Scurvy
Vitamin D	Cholecalciferol	Rickets
Vitamin E	Tocopherols	Less Fertility
Vitamin K	Menaquinones	Non-Clotting of Blood

• Fat-Soluble Vitamins: Vitamins K, E, D, A.
• Water Soluble Vitamins: Vitamins B, C.

Q54. Answer: (b) VSQA

The logic followed here is:
Similarly,
Hence, "option 2" is the correct answer.

Q55. Answer: (d) Executive

The correct answer is Executive.
Key Points
• The organ of government that primarily looks after the function of implementation and administration is called the Executive.
• The second but most powerful organ of the government is the Executive.
• At the State level, the executive comprises the Governor, the Chief Minister, and the Council of Ministers.
• The executive is often involved in the framing of policy.
• The executive branch is not just about presidents, prime ministers, and ministers. It also extends to the administrative machinery.

Q56. Answer: (b) 19 m

Given:
The length of hall = 7 m more than its breadth
Perimeter of hall = 62 m
Formula used:
Perimeter of rectangle = 2(l + b)
Calculation:
Let the breadth of rectangle be x m
Length = (x + 7) m
Perimeter = 2(l + b) = 62
=> l + b = 31
=> x + 7 + x = 31
=> 2x = 24
=> x = 12 m
Now,
Breadth = x = 12 m
Length = (x + 7) = (12 + 7) = 19 m
Therefore The length of the hall is 19 m

Q57. Answer: (a) Atomic Energy Establishment, Trombay

The correct answer is Atomic Energy Establishment, Trombay.
Key Points
• Dr. Homi Jehangir Bhabha established the Atomic Energy Establishment, Trombay (AEET) in Jan 1954.
• It was established for a multidisciplinary research program essential for the ambitious nuclear program of India.
• After the sad demise of Bhabha in 1966, AEET was renamed Bhabha Atomic Research Centre (BARC).
Additional Information
• Bhabha Atomic Research Centre (BARC)
• It is the mother of the R&D institutions which carry out pioneering research on nuclear and accelerator technologies.
• Coal-based thermal power contributes 186,293 MW (July 2016), 61% of the total installed power while renewable and nuclear

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contribute 44,237 MW (14.5%) and 5,780 MW (1.9%) respectively.

Q58. Answer: (c) Rs. 8,000

Given:

Rate = 10%

Time = 3/2 years

Formula used:

If difference between CI and SI is 3 years then,

Difference = $3 \times P(R)^2/(100)^2 + P (R/100)^3$

If compounded semiannually

Rate = 10/2 = 5%

Time = 3/2 × 2 = 3 years

Calculation:

According to the question

=> Difference = $P \times R^2 (300 + R)/100^3]$

=> $61 = (P \times 25 \times 305)/100^3$

=> $7625P =(61 \times 100 \times 100 \times 100)$

=> 7625P = 61,000,000

=> P = (61,000,000/7625)

=> P = Rs. 8,000

Therefore Each of them borrowed Rs. 8,000

Q59. Answer: (c) 84

Given:

The sum of the digits of a two-digit number = 12

Calculation:

Let the two digit number be 10x + y

Sum of digits (x + y) = 12.....(1)

According to the question

=> 4(10x + y) = 7(10y + x)

=> 40x + 4y = 70y + 7x

=> (70y – 4y) = (40x – 7x)

=> 66y = 33x

=> x/y = 2/1

Now,

=> 2x + x = 12

=> 3x = 12

=> x = 4

Now,

First number = 2x = (2 × 4) = 8

Second number = x = 4

Therefore The required number is 84

Q60. Answer: (d) 5^(th) June

The correct answer is 5th June.

Key Points

• Since 1974, World Environment Day has been celebrated every year on 5 June.

• The theme for World Environment Day 2020 was 'Time for Nature'.

• The theme for World Environment Day 2021 is Ecosystem Restoration.

Additional Information

• 30th September is celebrated as International Translation Day.

• 31st May is celebrated as World No Tobacco Day.

• International Day of Human Space Flight is celebrated on 12th April.

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Q61. Answer: (c) Indus valley desert

The correct answer is the Indus valley desert.

Key Points

• The Indus Valley Desert is an almost uninhabited desert ecoregion of northern Pakistan.

• It covers an area of 19,501 sq km in northwestern Punjab Province between the Chenab and Indus rivers.

• It is drier and less hospitable than the northwestern thorn scrub forests that surround it with temperatures ranging from freezing in winter to extremely hot in summer with only 600-800 mm of rainfall per year.

• The desert is home to five large mammals: Indian wolf, striped hyena, caracal, Indian leopard, and the urial along with many rodents and other mammals.

Additional Information

• The Thar desert

• The Thar Desert is located in India (Rajasthan) and is also known as the Great Indian Desert.

• The Thar Desert extends between the Aravalli Hills in the northeast and the Rann of Kutch in the west and the alluvial plains of the Indus River in the northwest.

• It is located partly in the Rajasthan state of India and partly in the Punjab and Sindh provinces of Pakistan.

• Rann of Kutch

• The Great Rann of Kutch is a salt marsh in the Thar Desert in the Kutch District of Gujarat.

• It is divided into the Great Rann and Little Rann.

• The history of the Rann of Kutch began with early neolithic settlements. It was later inhabited by the Indus Valley Civilization as well as the Maurya and Gupta empires of India.

• Spiti valley cold desert

• Spiti Valley is a cold desert mountain valley located high in the Himalayas in the northeastern part of the northern Indian state of Himachal Pradesh.

• The name "Spiti" means "The middle land" i.e. the land between Tibet and India.

Q62. Answer: (b) commitment to Purna Swaraj

The correct answer is the commitment to Purna Swaraj.

Key Points

• The Indian National Congress, on 19 December 1929, passed the historic 'Purna Swaraj' (total independence) resolution at its Lahore session.

• A public declaration was made on 26 Jan 1930- a day which the Congress Party urged Indians to celebrate as 'Independence Day.'

• Jawaharlal Nehru was elected as President of the Indian National Congress in December 1929 at its annual session in the city of Lahore.

• In 1929, Lord Irwin, then Viceroy of India, made a vague announcement, referred to as the Irwin Declaration that India would be granted dominion status in the future.

• This was the day when for the first time the nationalists unfurled the tricolor.

Additional Information

• India National Congress

• The India National Congress (INC) was formed by Allan Octavian Hume in 1885.

• INC was the first modern nationalist movement to emerge in the British Empire in Asia and Africa and it grew to become one of the most important political parties in pre-independence India.

• The first session of INC was held in Bombay from 28-31 Dec 1885 under the chairmanship of W.C. Bonnerjee.

• The session of the INC is held at the gap of one year.

• From the late 19th century and especially after 1920 Congress became the principal leader of the Indian independence movement under the leadership of Mahatma Gandhi.

• Congress lead India to independence from Great Britain and powerfully influenced other anti-colonial nationalist movements in the British Empire.

Q63. Answer: (b) Hawa Mahal

The correct answer is Hawa Mahal.

• As of October 2020, Hawa Mehal is not on the world heritage list.

• Hawa Mehal registered on the World Heritage list in 2021.

Key Points

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• Hawa Mehal:

• The structure was built in 1799 by Maharaja Sawai Pratap Singh, the grandson of Maharaja Sawai Jai Singh, who was the founder of Jaipur.

• The windows of the Hawa Mahal are called Jharokha.

• This palace is a five-story pyramidal shaped monument that rises to about 50 feet (15 m).

• Hawa Mahal is built in the shape of a crown, it looks like Lord Krishna's crown.

• Hawal Mahal has 5 floors and there are no stairs to climb, instead, there are only ramps to reach the top floors.

Additional Information

Heritage Site	Details	Location
Agra Fort	• It was the main residence of the emperors of the Mughal Dynasty until 1638 when the capital was shifted from Agra to Delhi. - In 1983, the Agra fort was life inscribed as a UNESCO World Heritage Site.	Agra, Uttar Pradesh
Elephanta Caves	• Elephanta Caves are a collection of cave temples predominantly dedicated to the Hindu god Shiva. - In 1987, the restored Elephanta Caves were designated a UNESCO World Heritage Site.	Gharapuri, Maharashtra
Sun Temple	• The temple is attributed to king Narasimhadeva I of the Eastern Ganga dynasty about 1250 CE. - Konark Sun Temple marks the high point of the Odisha style of Nagara architecture. - It was declared a Unesco World Heritage Site in the year 1984.	Konark, Odisha

Q64. Answer: (d) Hair

The correct answer is Hair.

Key Points

• The logic followed here is:

• Except for Hair, all other options are examples of sense organs of a human body.

• Hair is not a sense organ.

Additional Information

• Sense organs are the specialized organs composed of sensory neurons, which help us to perceive and respond to our surroundings.

• There are five sense organs in the human body: Skin Nose, Ears, Eyes, Tongue.

• Hence, "option 4" is the correct answer.

Q65. Answer: (d) 11

Given:

The given data = 11, 13, 10, 9, 8, 20, 13

Concept used:

Case 1: When numbers of terms in data is odd

Median = Middle term value

Case 2: When numbers of terms in data is even

Median = (1^(st)middle term value + 2^(nd) middle term value)/2

Calculation:

Arranging data in ascending order

=> 8, 9, 10, 11, 13, 13, 20

The number of given data in odd terms that is 7

So,

Median = Middle term value

=> 11

Therefore The required median is 11

Q66. Answer: (b) Austraila

The correct answer is Australia.

Key Points

• ICC men's T20 rankings

• The ICC Men's T20 Team Rankings is an international Twenty 20 cricket rankings system of the International Cricket Council.

• After every T20 match, the two teams involved receive points based on a mathematical formula.

• The total of each team's points total is divided by the total number of matches to give a rating, and all teams are ranked on a table in order of rating.

Q67. Answer: (d) grape cultivation

The correct answer is grape cultivation.

Key Points

• Viticulture is the scientific study of grapes, most often with a focus on growth and production.

• When the grapes are being used specifically for wine production, the study of grapes can also be called viniculture.

• Both viticulture and viniculture fall under the umbrella of horticulture.

• The most common grapevine Vitis vinifera has been cultivated and fermented by humans since the neolithic era.

• The Greek historian Thucydides observed that the growth of civilization in the Mediterranean coincided with the cultivation of grapes.

Q68. Answer: (c) a liability

The correct answer is a liability.

Key Points

• Unemployment leads to the wastage of manpower resources.

• People who are an asset to the economy turn into a liability.

• 'People as Resource' is a way of referring to a country’s working people in terms of their existing productive skills and abilities.

• Human resource plays a significant role in the economy of a country by contributing to productivity. The other resource becomes useful because of the input by the human resource.

• Investment in human capital yields a return and it is done through education, training, and healthcare. It is truly known that a person who is educated earns better than an uneducated person.

• People as a resource refers to the working population that results in the development of society.

Q69. Answer: (b) 10

Given:

f(x) = x2 + 9x + 3k

sum of squares of zero = 21

Formula used:

Sum of zero (α + β) = -b/a

Product of zero (α × β) = c/a

Calculation:

Let α and β are the zeroes of polynomial f(x)

Sum of zero = -b/a = (-9/1) = -9....(1)

Product of zero = c/a = (3k/1) = 3k....(2)

Now, from equation (1)

α + β = -9d

Squaring both sides, we get

$(\alpha + \beta)^2 = (-9)^2$

$\Rightarrow \alpha^2 + \beta^2 + 2\alpha\beta = 81$....(3)

Now, sum of squares of zero = 21

α2 + β² = 21

Putting the value of equation (1) and (2) in (3), we get

=> 21 + 2 × 3k = 81

=> 6k = (81 – 21)

=> 6k = 60

=> k = 10

Therefore The value of k is 10

Q70. Answer: (c) 89

The logic followed here is:

Addition of the upper left side number and square of the upper right side number, then we get a lower number.

The figure is as follows:-

Hence, "Option 3" is the correct answer.

Q71. Answer: (d) Redwood

The correct answer is Redwood.

Key Points

• Redwood is a subfamily of coniferous trees within the family Cupressaceae.

• It includes the largest and tallest trees in the world.

• It is also known as Sequoia sempervirens.

• The native habitat of Redwood trees is only on the western slopes of the Sierra Nevada range of California.

Additional Information

• Cedar

• Cedar is a genus of coniferous trees in the plant family Pinaceae.

• They are native to the mountains of the western Himalayas and the Mediterranean region.

• Cedrus trees can grow up to 30-40 m.

• Pine

• A pine is any conifer in the genus Pinus of the family Pinaceae.

• Pine is one of the more extensively used types of wood used as lumber.

• Spruce

• Spruce is a tree of the genus Picea.

• Spruces are large trees, from about 20 to 60m tall when mature.

Q72. Answer: (b) 3 days

Given:

Aryan takes twice as much time as Vipin to finish a work

Aryan and Vipin finish the work together = 2 days

Formula used:

Work = Efficiency × Time

Calculation:

LCM of 2 and 1 is 2

Efficiency of Aryan = 2/2 = 1 unit/day

Efficiency of Vipin = 2/1 = 2 units/days

Number of work completed by Aryan and Vipin together in 2 days = [2 × (1 + 2)]

=> (2 × 3) = 6 units/days

Now,

Number of time to completed the work by Vipin = (6/2) days

=> 3 days

Therefore Required time to completed the work by Vipin is 3 days

Q73. Answer: (c) 20 : 23

Shortcut Trick

Total initial parts = 6 + 7 = 13 parts.

Value of 13 parts = Rs. 1950 => 1 part = 1950 ÷ 13 = Rs. 150.

Amount added to each = Rs. 100, which in ratio terms is 100 ÷ 150 = 2/3 parts.

New ratio = (6 + 2/3) : (7 + 2/3) = 20/3 : 23/3.

Thus, the new ratio simplifies directly to 20 : 23.

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Therefore The correct answer is 20 : 23.

Alternate Method

Given:

Total amount to be divided = Rs. 1950

Initial ratio of Anita and Vineeta = 6 : 7

Amount added to each share = Rs. 100

Calculations:

=> Sum of ratio parts = 6 + 7 = 13

=> Value of 1 ratio part = 1950 ÷ 13 = Rs. 150

=> Anita's initial share = 6 × 150 = Rs. 900

=> Vineeta's initial share = 7 × 150 = Rs. 1050

=> Anita's new share = 900 + 100 = Rs. 1000

=> Vineeta's new share = 1050 + 100 = Rs. 1150

=> New ratio = 1000 : 1150

=> Dividing both parts by 50, we get 20 : 23

Therefore The correct answer is 20 : 23.

Additional Information

Equivalent Ratios

Multiplying or dividing both terms of a ratio by the same non-zero number does not change its core value, e.g., 1000 : 1150 simplifies exactly to 20 : 23.

Constant Difference Method

When the same quantity is added or subtracted from both components of a ratio, the numerical difference between the final terms remains equal to the difference of the initial absolute quantities.

Q74. Answer: (b) 245

The logic followed here is:

For the first column:-

Addition of square of all three numbers then we get fourth row number.

$2^2 + 3^2 + 4^2 = 4 + 9 + 16 = 29$

For the second column:-

52 + 62 + 72 = 25 + 36 + 49 = 110

Similarly,

For the third column:-

82 + 92 + 102 = 64 + 81 + 100 = 245

Hence, "option 2" is the correct answer.

Q75. Answer: (d) Rowlatt Act

The correct answer is Rowlatt Act.

Key Points

• Rowlatt Act

• Rowlatt Act was in response to the British government enacting the Anarchical and Revolutionary Crimes Act of 1919, popularly known as the Rowlatt Act.

• The Act was passed on the recommendation of the Sedition Committee chaired by Sir Sidney Rowlatt.

• This act had been hurriedly passed in the Imperial Legislative Council despite the united opposition of the Indian members.

• It gave the government enormous powers to repress political activities and allowed the detention of political prisoners without trial for two years.

Additional Information

• World War I

• It took place from 28 July 1914 to 11 November 1918.

• It is considered as one of the largest wars in history and also contemporarily described as the War to End All Wars.

• This Great War started when Hungary-Austria declared war on Serbia.

• Jallianwala Bagh Massacre

• The protests against Rowlatt Act turned violent as the police resorted resulting in the death of some protestors.

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• Martial law was placed to curb further protests and law and order in Punjab.

• On 13th April, Baisakhi Day, a large crowd of people unaware of the prohibitory orders in the Amritsar gathered in the Jallianwala Bagh.

• Rabindranath Tagore renounced his Knighthood in protest.

• Mahatma Gandhi gave up the title of Kaiser-i-Hind.

Q76. Answer: (d) 17^(th) June

The correct answer is 17th June.

Key Points

• World Day to Combat Desertification and Drought is observed every year on 17 June.

• The day promotes public awareness of international efforts to combat desertification.

• It is an occasion to remind everyone that land degradation neutrality is achievable through problem-solving, strong community involvement, and cooperation at all levels.

Additional Information

• 22^(nd)May is celebrated as International Day for Biological Diversity.

• 5^(th) June is celebrated as World Environment Day.

• 22^(nd) April is celebrated as Earth day.

Q77. Answer: (c) November 8, 2016

The correct answer is November 8, 2016.

Key Points

• It is the act of stripping a currency unit of its status as legal tender.

• It occurs whenever there is a change of national currency and the current form or forms of money are pulled from circulation and retired, often to be replaced with new notes or coins.

• In November 2016, the decision of Demonetisation was taken by the Government of India.

• In the current form or forms of money is pulled from circulation and retired, often not be replaced with new notes or coins.

• On 8th November 2016 Government of India announced the demonetization of all 500 and 1000 banknotes.

• The purpose of demonization was to move India from a tax non-compliant society to a compliant society.

• This move by the government achieved larger significance for a globally connected India as it showed boldness in tackling an issue that has remained a thorn in the growth success story of this generation.

Q78. Answer: (a) Inflation

The correct answer is Inflation.

Key Points

• Social evil

• Social evils are the issues that directly or indirectly affect the members of a society and are considered a point of controversy or a problem in regards to moral values.

• They hinder society's progress as a whole.

• They are superstitiously believed to cause harm and are very immoral and wicked. Some of them are child labor, human trafficking, child marriage, etc.

• They are deep-rooted obstacles to social development.

• Mahatma Gandhi

• Mahatma Gandhi was a renowned freedom activist and an authoritative or powerful political leader who had played an important role in India's struggle for Independence against the British rule of India.

• He was also considered the father of the country.

• His birthday is celebrated every year as Gandhi Jayanti.

• On 30^(th) January Mahatma Gandhi was assassinated by Nathuram Godse and so, this day is observed as Martyr's Day or Shaheed Diwas.

Q79. Answer: (c) IBM

The correct answer is IBM.

Key Points

• IBM

• The IBM Personal Computer is the first computer released in the IBM PC model.

• It was released on August 12, 1981, and was created by a team of engineers and designers directed by Don Estridge in Boca

Raton, Florida.

• The majority of modern personal computers are distant descendants of the IBM PC.

• IBM sold the PC division to Lenovo in 2005.

Q80. Answer: (b) Geneva, Switzerland

The correct answer is Geneva, Switzerland.

Key Points

• The World Health Organization is a specialized agency under United Nations responsible for international public health.

• It was formed on 7 April 1948.

• The formation date of the World Health Organization, April 7 is commemorated as World Health Day.

• The headquarters of the World Health Organisation is in Geneva, Switzerland.

• The constitution of the WHO has been signed by 61 countries on 22 July 1946.

Q81. Answer: (a) Only II

The Venn diagram is as follows:-

Conclusions:

I. All the onions are tomatoes → False (All the tomatoes are onions also says that some onions are tomatoes but all the onions are not tomatoes.)

II. All the potatoes are onions → Ture (All the potatoes are tomatoes and all the tomatoes are onions that mean all the potatoes are onions.)

Hence, "option 1" is the correct answer.

Additional Information

Q82. Answer: (b) Farm forestry

The correct answer is Farm forestry.

Key Points

• Farm forestry means growing trees on farmlands for commercial purposes like timber production or for a variety of non-commercial purposes like groundwater control, prevention of soil erosion, prevention of polluting nutrients in the soil, etc.

• It can help in the production of quality timber products, and it also increases farm income.

Additional Information

• Tree Conservation

• Tree conservation is the preservation and management of forests.

• Deforestation is one of the main factors in climate change. By conserving trees, we will slow down global warming and reduce climate change.

• Forest Conservation

• Forest conservation is the practice of planning and maintaining forested areas for the benefit and sustainability of future generations.

• Forest conservation involves the upkeep of the natural resources within a forest that is beneficial for both humans and the ecosystem.

Q83. Answer: (a) 18

Given:

The sum of five consecutive numbers = 90

Calculation:

Let the five consecutive numbers be x, x + 1, x + 2, x + 3, x + 4 respectively

According to the question

=> (x, x + 1, x + 2, x + 3, x + 4) = 90

=> 5x + 10 = 90

=> 5x = 90 – 10

=> 5x = 80

=> x = 16

Now, the middle number = (x + 2) = (16 + 2)

=> 18

Therefore Required middle number is 18

Q84. Answer: (c) Jahanara

The correct answer is Jahanara.

• Shah Jahan's daughter Jahanara participated in many architectural projects of the new capital of Shahjahanabad (Delhi).

Key Points

• Jahanara was the daughter of Shah Jahan and the sister of Roshanara.

• She devised many architectural projects in the new capital of Shah Jahan.

• She designed an imposing double-storeyed caravan-serai having a garden and a courtyard. She also designed the bazaar of Chandni Chowk in Shahjahanabad (now Delhi).

Additional Information

• Shah Jahan, Mughal emperor of India (1628–1658) who built the Taj Mahal.

• He was the third son of the Mughal emperor Jahangir and the Rajput princess Manmati.

• Moti Masjid and the Jama Masjid, was built by Shah Jahan.

• At Delhi, Shah Jahan built a huge fortress-palace complex called the Red Fort.

Important Points

Person Name	Details
Gulbadan Begum	• Gulbadan Begum was a Mughal princess and the daughter of Emperor Babur, the founder of the Mughal Empire. - She was the author of Humayun-Nama, the account of the life of her half-brother, Emperor Humayun, which she wrote at the request of her nephew, Emperor Akbar.
Roshanara	• Roshanara Begum was a Mughal princess and the third daughter of Emperor Shah Jahan and his wife, Mumtaz Mahal. - Roshanara was a brilliant woman and a talented poet. - She was a partisan of her younger brother, Aurangzeb, and supported him during the war of succession which took place after Shah Jahan's illness in 1657.

Q85. Answer: (c) 125°

Given:

angle PAB = 35°

Calculation:

angle PAB = angle BRP = 35° [Angle made in the same segment]

angle ARB = 90° [Angle made in a semicircle]

angle ARP + angle BRP = 90°

angle ARP + 35° = 90°

angle ARP = (90° – 35°)

angle ARP = 55°

=> angle ARP + angle ARS = 180° [Linear pair]

=> angle 55° + angle ARS = 180°

=> angle ARS = (180° – 55°)

=> angle ARS = 125°

Therefore The value of angle ARS is 125°

Q86. Answer: (d) Foam

Calculation:

The percentage growth of Cement from 2015 to 2019 = [(450 – 200)/200 × 100]

=> (250/200 × 100)

=> 125%

The percentage growth of Fertilizer from 2015 to 2019 = [(800 – 500)/500 × 100]

=> (300/500 × 100)

=> 60%

The percentage growth of Foam from 2015 to 2019 = [(200 – 80/80 × 100]

=> (120/80 × 100)

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=> 150%

The percentage growth of Pesticides from 2015 to 2019 = [(180 – 100)/100 × 100]

=> (80/100 × 100)

=> 80%

Therefore The maximum growth in CFC from 2015 to 2019 in Foam

Q87. Answer: (c) 2019

Calculation:

The total CFC emissions from all the sectors in 2015 = (200 + 500 + 80 + 100)

=> 880

The total CFC emissions from all the sectors in 2016 = (300 + 600 + 90 + 110)

=> 1100

The total CFC emissions from all the sectors in 2017 = (320 + 650 + 100 + 120)

=> 1190

The total CFC emissions from all the sectors in 2018 = (400 + 700 + 150 + 150)

=> 1400

The total CFC emissions from all the sectors in 2019 = (450 + 800 + 200 + 180)

=> 1630

Now,

The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors in 2015 = (500/880 × 100)

=> 56.81%

The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors in 2016 = (600/1100 × 100)

=> 54.54%

The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors in 2017 = (650/1190 × 100)

=> 54.62%

The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors in 2018 = (700/1400 × 100)

=> 50%

The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors in 2019 = (800/1630 × 100)

=> 49.07%

Therefore The contribution of CFC emission from the fertilizer sector, in comparison to the total CFC emissions from all the sectors, was least in 2019

Q88. Answer: (d) 80%

Calculation:

The percentage growth in CFC emissions from the pesticides sector from 2015 to 2019 = [(180 – 100)/100 × 100]

=> (80/100 × 100)

=> 80%

Therefore The percentage growth in CFC emissions from the pesticides sector from 2015 to 2019 is 80%

Q89. Answer: (b) 27%

Calculation:

The percentage in CFC emissions from the Cement sector in 2017 = 320

The total CFC emissions from all the sectors in 2017 = (320 + 650 + 100 + 120)

=> 1190

Required percentage = (320/1190 × 100)

=> 26.89% ~ 27%

Therefore The approximate contribution in percentage in CFC emissions from the cement sector, in comparison to that of the total CFC emissions from all the sectors in 2017 is 27%

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Q90. Answer: (c) Conclusion cannot be drawn.

The pattern followed here is:

The statement is given below:-

I. A is the sister of B.

II. B is the daughter of C.

From statements I and II the family tree is given below:-

From the above figure, we can say that A and B are sisters and C is either father or mother of A and B.

In conclusion, B is the enemy of C cannot be drawn.

Hence, "option 3" is the correct answer.

Q91. Answer: (d) YBAZ

The logic followed here is:

Hence, "option 4" is the correct answer.

Q92. Answer: (c) 18

The total number of even numbers between 3 to 39, all odd numbers are removed.

=> 4, 6, 8,10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38

So, the numbers remain between 3 to 39 after removing odd numbers is 18.

Hence, "option 3" is the correct answer.

Q93. Answer: (b) Vegetable

The logic followed here is:

Apple is the fruit.

Similarly,

Bottle Gourd is a vegetable.

Hence, "option 2" is the correct answer.

Q94. Answer: (a) 1

The Venn diagram is given below:-

The shaded part is the principals who are both, teachers and students.

So, 1 principal who are both, teachers and students.

Hence, "option 1" is the correct answer.

Q95. Answer: (b) 46

The logic followed here is:

We add all four to the outer number we get the centre number.

From figure A-

2 + 3 + 4 + 5 = 14

From the figure B:-

6 + 7 + 8 + 9 = 30

Similarly,

From the figure C:-

10 + 11 + 12 + 13 = 46.

Hence, "option 2" is the correct answer.

Q96. Answer: (d) J10Q

The logic followed here is:

Hence, "option 4" is the correct answer.

Q97. Answer: (b) Only conclusion (ii) follows.

The Venn diagram are given below:-

Conclusions :

(i) All doctors are soldiers → False (Given the statement is some doctors are soldiers then all doctors are soldiers is possible not definitely.)

(ii) Some soldiers are managers → True (Given the statement is all managers are soldiers, so we can also say that some soldiers

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are managers.)

(iii) All soldiers are doctors → False (Given the statement is some doctors are soldiers then it never be all soldiers are doctors.)

(iv) Some doctors are managers → False (Given the statements are some doctors are soldiers, all managers are soldiers, that means we can not say that some doctors are managers.)

Hence, "option 2" is the correct answer.

Q98. Answer: (a) PEOPEL

The logic followed here is:

Similarly,

Hence, "option 1" is the correct answer.

Q99. Answer: (b) Son

If Ram is the brother of the son of Mohan.

The family tree is given below:-

Ram is the son of Mohan.

Hence, "option 2" is the correct answer.

Q100. Answer: (a) 3

The Venn diagram is given below:-

The shaded part is the principles who are students but not teachers.

So, 3 principals who are students but not teachers.

Hence, "option 1" is the correct answer.

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