RRC Group D Previous Year Paper 50 (Held On: 14 Dec 2018 Shift 2)

RRB Group D • 2018 • 100 questions • 90 minutes • Answer key and solutions

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CBT

Q1. Read the given statements and decide which of the assumptions is implicit in the statement.

Statement:

Dogs usually do not sleep much longer at night.

Assumptions:

1. Dogs take short naps.
2. Dogs sleep during the day.

(a) Only assumption 2 is implicit.
(b) Only assumption 1 is implicit.
(c) Both 1 and 2 assumptions are implicit.
(d) Neither assumption 1 nor assumption 2 is implicit.

Q2. In _____, 71-year-old Ram Nath Kovind has been elected as the 14th President.

(a) June 2017
(b) August 2017
(c) July 2017
(d) March 2017

Q3. Consider the given statement and decide which of the given assumptions is implicit in the statement.

Statement:

Television is correctly called the Idiot box.

Assumptions:

1. People who watch television are idiots.
2. People who do not watch television are intelligent.

(a) Only assumption 1 is implicit.
(b) Both assumptions are implicit.
(c) No assumption is implicit.
(d) Only assumption 2 is implicit.

Q4. Select the option that is related to the third term in the same way as the second term is related to the first term.

Gun : Armory :: Grain : ?

(a) Granary
(b) Fish
(c) Zoo
(d) Birds

Q5. _____ was the adopted son of Bajirao II, who was denied his pension and title.

(a) Bahadur Shah Zafar
(b) Mangal Pandey
(c) Tatya Tope
(d) Nana Saheb

Q6. Mr. X says to Ms. Y, "Your father's wife's sister is my aunt". How is Mr. X related to Ms. Y?

(a) Cousin
(b) Father
(c) Brother-in-Law
(d) Son

Q7. Two pipes can fill an empty tank in 1.8 hours and 3 hours respectively while a third pipe can empty a tank filled in x hours. If all three pipes are opened simultaneously then an empty tank is completely filled in 2.25 hours. Find the value of x.

(a) 2
(b) 2.25
(c) 1.5
(d) 2.5

Q8. Suraj drove his bicycle towards the north. Then he turned to the right and covered a distance of 2 km. Then, he turned to the right and covered a distance of 4 km. He found himself 2 km east of his starting point. How far did he go by bicycle in the north direction?

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

Q9. Read the given question and decide which of the following statements is/are sufficient to answer the question.

Question:

If there are 100 sheep in a farm then what is the number of female sheep that are brown ?

Statements:

1. There are 10 male sheep that are brown.

2. 25% of the sheep's are brown.

(a) 2 alone is sufficient while 1 alone is not sufficient
(b) Both 1 and 2 together are sufficient
(c) 1 alone is sufficient while 2 alone is not sufficient
(d) Each statement alone is sufficient

Q10. What is the square root of 33489?

(a) 163
(b) 183
(c) 179
(d) 167

Q11. What will be the HCF of 195 and 273?

(a) 39
(b) 65
(c) 3
(d) 13

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Q12. A hose has three pipes. Pipe x and pipe y fill the hose and pipe z empties the hose. The pipe x can fill the tank alone in 15 hours. The pipe y can fill the same hose in 12 hours alone. The pipe z can completely empty the hose in 20 hours alone. If all the pipes are opened at the same time, how much time will it take to fill the fill the hose?

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

Q13. 1 kWh = _____ J.

(a) 36000
(b) 36000000
(c) 360000
(d) 3600000

Q14. Indian Space Research Organization (ISRO) has joined hands with which state government to set up a telemedicine center at an altitude of 12,700 feet to serve pilgrims en route to the Amarnath shrine.

(a) Sikkim
(b) Uttarakhand
(c) Jammu and Kashmir
(d) Himachal Pradesh

Q15. How to express 20 g of CO_2 in moles. (Atomic mass C = 12, O = 16)

(a) 4 mole
(b) 2 mole
(c) 1 mole
(d) 0.45 moles

Q16. Complete the following analogy.

ROAD : URDG :: LANE : ?

(a) DOQH
(b) ODQH
(c) ODHQ
(d) OQDH

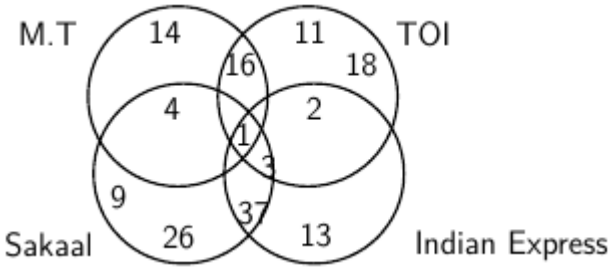
Q17. In Uttar Pradesh _____ is famous for the work of glass bangles.

(a) Shikohabad
(b) Firozabad
(c) Ghaziabad
(d) Moradabad

Q18. Kalbeliya is a popular dance form in _____.

(a) Gujarat
(b) Rajasthan
(c) Manipur
(d) Meghalaya

Q19. Answer the following questions based on the diagrams given below:



Numbers represent the number of subscribers and circles indicate a newspaper.

Question:

How many people buy only Sakal newspapers?

(a) 35
(b) 76
(c) 72
(d) 80

Q20. Who was appointed by British Prime Minister Theresa May as the new Brexit Secretary?

(a) Eleanor Laing
(b) Heidi Alexander
(c) George Howarth
(d) Stephen Barclay

Q21. When an acid reacts with a carbonate or metal hydrogen, it forms salts, carbon dioxide gas and water accordingly. Which of the following equations is correct for this chemical reaction?

(a) Na2CO_(3(s)) + HCl(aq) → 2NaCl_((aq)) + H2O(l) + 2CO_(2(g)) + H2O_((l))
(b) Na2CO3(s) + HCl(aq) → NaCl(aq) + H2O(l) + CO2(g)
(c) Na2CO3(s) + 2HCl(aq) → 2NaCl(aq) + H2O(l) + CO2(g)
(d) Na2CO3(s) + 2HCl(aq) → 2NaCl(aq) + 2CO2(g)

Q22. More diversity is allowed for breeding by _____.

(a) Vegetative propagation
(b) Tissue culture
(c) Asexual reproduction
(d) Sexual reproduction

Q23. The least common multiple and highest common factor of two numbers are 90 and 9 respectively and one of those numbers is 18. What is the second number:

(a) 9
(b) 36
(c) 45
(d) 30

Q24. 54 ÷ 6 + 3 × 3 = ?

(a) 15
(b) 5
(c) 18
(d) 36

Q25. The table below shows the passing percentage of four schools in four years.

Name of school	2012-13	2013-14	2014-15	2015-16
PQR	27%	31%	45%	67%
ABC	61%	65%	50%	78%
DEF	95%	86%	80%	70%
XYZ	92%	82%	78%	71%

The percentage of which school is increasing sequentially (gradually)?

(a) XYZ
(b) ABC
(c) DEF
(d) PQR

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Q26. The elevation angle of the tower is 30° from the 18 m high top of a platform. If the height of the tower is 78 m, then what is the distance of the tower from the platform?

(a) 60 m
(b) 20√3 m
(c) 70√3 m
(d) 60√3 m

Q27. To get the result of the equation given as 5, Enter the mathematical symbol in place of '?':
((120?110)?5)?10 = 5

(a) -, ÷, ÷
(b) +, ÷, ×
(c) -, +, +
(d) -, ×, ÷

Q28. Which scheme aims to provide piped water supply to villages powered by solar energy?

(a) Swajal Scheme
(b) Gangajal Scheme
(c) Pure water scheme
(d) Ground water scheme

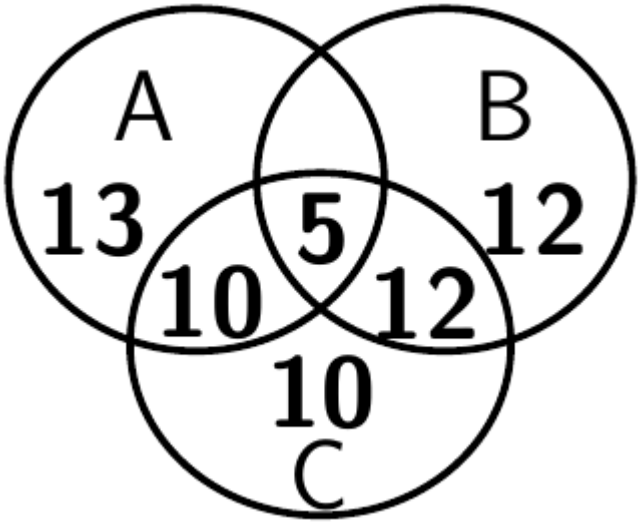
Q29. Who wrote the epic Ramayana?

(a) Chitragupta
(b) Valmiki
(c) Chanakya
(d) Dronacharya

Q30. _____ of the stems and roots also store nutrients and water.

(a) Parenchyma
(b) Xylem
(c) Collenchyma
(d) Sclerenchyma

Q31. The Venn diagram below illustrates the sports preferences stated by a group of 100 college students. These students play one of the three games given below and 5 of them play all three games. These three sports are: Football (A), Tennis (B) and Cricket (C). Based on the diagram, how many students only like playing tennis and football?



(a) 34
(b) 35
(c) 37
(d) 38

Q32. According to the New World Wealth Report, India was ranked _____ in the list of wealthiest countries, according to which India had assets of $ 8,230 billion in 2017.

(a) Seventh
(b) Tenth
(c) Fifth
(d) Sixth

Q33. What is the difference between the place values of two 5 in 1452058?

(a) 49050
(b) 49950
(c) 0
(d) 51950

Q34. What is the title of biography of Nelson Mandela?

(a) My lone walk to freedom
(b) Long walk to freedom
(c) Mandela
(d) Madiba

Q35. Which of the following is the least active?

(a) Silver
(b) Potassium
(c) Sodium
(d) Lead

Q36. India does not share terrestrial border with _____.

(a) Sri Lanka
(b) Afghanistan
(c) China
(d) Bangladesh

Q37. Select the sequence of mathematical operators that when arranged sequentially in the spaces of a given series, will complete the series completely.

2 _ 5 _ 2 _ 6 _ 11

(a) +, -, +, =
(b) +, -, -, +
(c) -, +, =, +
(d) +, +, +, -

Q38. If 7364x is divisible by 11, what will be the value of x?

(a) 7
(b) 6
(c) 5
(d) 4

Q39. The average score achieved by Subir in 15 tests is 29. Ruchira has averaged 27 so far, but has given only 11 Tests so far. How much does Ruchira score on average in the remaining four Tests to match Subir's performance?

(a) 36
(b) 35.5
(c) 35
(d) 34.5

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Q40. Consider the following statement and decide which of the assumptions is implicit from the statement.

Statement:

Eating Pizza often affects a person's health.

Assumptions:

I. Mostly, pizza contains lot of saturated fat and salts that lead to various health issues.

II. To a large extent, overeating of pizzas leads to a sharp rise in blood cholesterol levels.

(a) Both I and II are implicit
(b) Only II is implicit
(c) Only I is implicit.
(d) Neither I nor II is implicit

Q41. Newton's Second Law of Motion:

(a) Also known by the law of inertia.
(b) Also known by the law of conservation of energy.
(c) It is helpful to understand the effects of heat.
(d) Describes the relationship between the forces of two mutually affecting objects.

Q42. The annual depreciation of a car's value is 10%. By what percentage will the price of the car fall after 4 years?

(a) 34.39
(b) 32.56
(c) 40.12
(d) 38.24

Q43. What is the amount of work done by a boy against gravity in which he takes a bicycle weighing 3 kg to a distance of 10 meters on a flat road? ($g = 9.8$ m/sec^2)

(a) 0 J
(b) 300 J
(c) 0.3 J
(d) 30 J

Q44. Which of the following is a vascular plant ?

(a) Marsilea
(b) Ulothrix
(c) Chara
(d) Spirogyra

Q45. Read the statements and decide which of the conclusions logically follows from the given statement.

Statement:

"The pedestrian crossing is a few feet away, it's safe to use," a mother told her child.

Conclusions:

1. Pedestrians should use pedestrian crossings for safety.

2. All children know what a pedestrian crossing is.

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

Q46. Which of the following Indian squash player became the first Indian player to be included in the top 10 of the PSA women's rankings?

(a) Deepika Pallikal Karthik
(b) Joshna Chinappa
(c) Aparna Popat
(d) Janet Vidhi

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Q47. If 'South-East' is called 'East', 'North-West' is called 'West', 'South-West' is called 'South'. Similarly, what will 'North' be called?

(a) South-West
(b) South
(c) North
(d) North-West

Q48. An object of mass 14 kg is placed at a certain height from the ground. If the potential energy of the object is 560 J, then find the height of the object with reference to the ground. (take g = 10 ms^(-2))

(a) 3 m
(b) 4 m
(c) 4.5 m
(d) 5 m

Q49. What will be the next term in the following series?

11KI, 15OM, _____ ?

(a) 19QS
(b) 19QT
(c) 19ST
(d) 19SQ

Q50. In a concave mirror, where should that object be placed to obtain a real, inverted image of the same size at C?

(a) At C
(b) Between the focus and the mirror pole
(c) At infinity
(d) At focus

Q51. Which of the following options is equivalent to:

frac(1 + tan²θ)cot θ cosec² θ

(a) cot θ
(b) tan θ
(c) sin θ
(d) cos θ

Q52. Sakira and Bryan depart from points x and y towards y and x respectively and travel in the same route. After meeting each other on the way, Sakira takes 7.5 hours to reach her destination, while Bryan takes 2.7 hours to reach his destination. After how many hours did they meet after starting their journey?

(a) 6
(b) 4.8
(c) 5.25
(d) 4.5

Q53. Manoj is the father of Varun's only brother. How is Varun related to Manoj?

(a) Uncle
(b) Son
(c) Cousin
(d) Brother

Q54. Represent x³ + 3x² + 3x + 1 in quadratic surd.

(a) √((x + 1)³)
(b) (x + 1)^(3/2)
(c) (x + 1)^(2/3)
(d) √((x + 1)^6)

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Q55. _____ argued that all planets are in the Sun's orbit, not Earth's, contrary to the belief of the time.

(a) Johann Wolfgang Dobreiner
(b) Gregor Mendel
(c) Galileo Galilei
(d) Isaac Newton

Q56. How many gold medals did India win at the 2018 Commonwealth Games?

(a) 26
(b) 19
(c) 14
(d) 20

Q57. As of March 2018, which political party was in power in Telangana?

(a) TRS
(b) BJP
(c) Congress
(d) TDP

Q58. The digit present in place of unit of cube root of a number is equal to the digit present in place of unit of its number. This is appropriate in cases of how many different digits in place of the unit?

(a) 6
(b) 2
(c) 4
(d) 1

Q59. The population of a small town is 12,000. If the population increases by 15% from year to year, then what will be the population of that city in two years?

(a) 14,760
(b) 15,870
(c) 15,620
(d) 16,870

Q60. Two trains, one 157 m long and the other 123 m long, are crossing each other in opposite directions in 7.2 seconds. The combined speed of two trains every hour will be:

(a) 70 km/hr
(b) 105 km/hr
(c) 280 km/hr
(d) 140 km/hr

Q61. 200 students appeared in a specific examination. There were 80 students who failed in Mathematics. 160 students passed in Physics. 30 students failed in Chemistry. 30 students failed in Mathematics and Physics. 15 students failed in Mathematics and Chemistry. 10 students failed in Physics and Chemistry. 100 students passed in all three subjects.

How many students failed in only one subject?

(a) 45
(b) 55
(c) 30
(d) 80

Q62. Why is the classification of elements important?

(a) To study the properties of the elements in a convenient manner.
(b) To know their atomic number.
(c) To know the functions of the elements.
(d) To know their electronic orientation.

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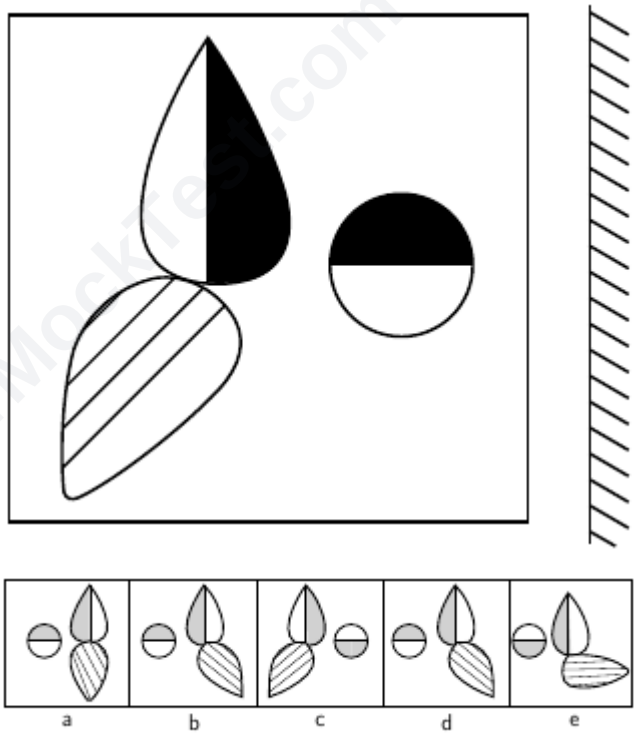
Q63. The body's tendency to resist acceleration is called _____.

(a) Inertia
(b) Force
(c) Energy
(d) Momentum

Q64. What is the full form of AIDS?

(a) Advancement in developing syndrome
(b) Acquired Immune Deficiency Syndrome
(c) Active immune divide signal
(d) All immune down syndrome

Q65. Choose the mirror image of the given figure.



(a) a
(b) b
(c) e
(d) d

Q66. Three of the four options below are related in a particular way. Select the option which is different or odd from the others.

(a) Cat
(b) Lamb
(c) Kitten
(d) Cub

Q67. Which of the following is an example of a good thermal insulation?

(a) Aluminum
(b) Glass
(c) Copper
(d) Steel

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Q68. What is the smallest number. Which, when divided by 16, 24, 30 and 48, remains 11 in each case?

(a) 465
(b) 491
(c) 499
(d) 495

Q69. How many FIFA World Cup titles have France won?

(a) 3
(b) 2
(c) 1
(d) 5

Q70. When the time in a clock is 7:20, what is the small angle drawn between the minute needle and the hour needle?

(a) 130°
(b) 120°
(c) 100°
(d) 75°

Q71. In a scheme, Rs. 200 was invested for one year, which provides 10% annual simple interest. Another Rs. 200 was invested for one year in another scheme, which provides compound interest at 10% p.a compounded half-yearly. How much more will be the interest earned under the second plan?

(a) 50 paise
(b) No difference
(c) 25 paise
(d) Rs. 1

Q72. Suppose the given statements are true, even if they seem to be at variance from commonly known facts and decide which of the conclusions completely follows the statement.

Statement

The boss insulted Sachin in the presence of his colleagues.

Conclusions:

1. Boss doesn't like Sachin.

2. Sachin was not popular among his colleagues.

(a) Neither conclusion 1 nor 2 follows.
(b) Only conclusion 1 follows.
(c) Either conclusion 1 or 2 follows.
(d) Only conclusion 2 follows.

Q73. Literary sources from the Mauryan period include Indica and _____.

(a) Rock Inscriptions
(b) Arthshastra
(c) Coins
(d) Pillar inscription

Q74. The same mass of ethane and hydrogen is added to a blank vessel at 25°. What is the fraction of the total pressure exerted by hydrogen?

(a) 1 : 2
(b) 1 : 1
(c) 15 : 16
(d) 1 : 16

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Q75. If a triangle has two vertices (-3, 1) and (0, -2) and the nucleus is the origin, then the third vertex is (α, β). What is the value of (2α - β)?

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

Q76. The weight of the object is 98 N. What will be its mass on Earth? (Given: g = 9.8 ms^(-2))

(a) 98 kg
(b) 10 N
(c) 100 kg
(d) 10 kg

Q77. Choose the correct water-image of the following figure from the four figures given below.



(a)



(b)



(c)



(d)



Q78. How many real zeros in the polynomial $x^3 - x^2 + 2$?

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

(d) 2

Q79. Consider the following statement and decide which of the assumptions is implicit in the statement.

Statement:

An ad for a weight-loss organization says, "Lose your weight by 5 kg in three sessions."

Assumptions:

1. If you join a weight loss program, you will lose 10 kg in six sessions.
2. The institute deals with weight loss programs.

(a) Neither assumption 1 nor assumption 2 is implicit.
(b) Only assumption 1 is implicit.
(c) Either assumption 1 or assumption 2 is implicit.
(d) Only assumption 2 is implicit.

Q80. Mount Dhoopgarh is the highest peak in the Satpura Range, which is located in _____.

(a) Gujarat
(b) Maharashtra
(c) Madhya Pradesh
(d) Chhattisgarh

Q81. The three elements A, B and C form the Döbereiner's triads. If the atomic mass of element A is 7 and the atomic mass of element C is 39, what will be the atomic mass of element B?

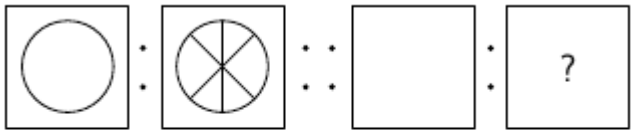
(a) 46
(b) 22
(c) 32
(d) 23

Q82. A 42 cm long hollow cylinder has an outer diameter of 16 cm and an internal diameter of 12 cm. If the weight of the cylinder's material is 10 g/cm³, what is the weight of the hollow or empty cylinder? (π = 22/7)

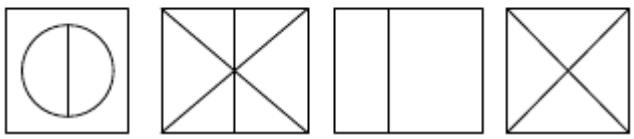
(a) 32.960 kg
(b) 36960 kg
(c) 36.960 kg
(d) 32960 kg

Q83. Identify the option that is related to the third figure in the same way as the second figure is related to the first figure.

Problem Figures



Answer Figures



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

Q84. _____ coating on silver is an example of corrosion.

(a) Blue
(b) Black
(c) Green
(d) Brown

Q85. Differentiation in organisms leads to _____.

(a) Origin and Development of Diversity
(b) Choose the most desirable properties
(c) Survival of organism
(d) Complex form of origin

Q86. A and B can complete a work in 36 days. However, A had to leave a few days before the work was completed and hence it took 54 days to complete the work. If A alone can complete a work in 48 days, then how many days before the completion of the work did A take leave?

(a) 24
(b) 30
(c) 25
(d) 28

Q87. Silicon forms a compound with hydrogen consisting of a chain of ____ atoms.

(a) 8 or 9
(b) 5 or 6
(c) 6 or 7
(d) 7 or 8

Q88. If a shopkeeper makes a 30% profit by selling an item for Rs. 4420, what is the cost price of that item?

(a) Rs. 2500
(b) Rs. 3400
(c) Rs. 3600
(d) Rs. 3300

Q89. The atmospheric pressure at sea level is _____ atmosphere.

(a) 0.1
(b) 0.001
(c) 1
(d) 0

Q90. Find the next word in this series.

ZKC, XPE, VUG, _____.

(a) TYJ
(b) TZI
(c) TYI
(d) TZJ

Q91. If two objects, whose masses are 'm' and '9m', are moving with equal kinetic energy, find the ratio of their linear momentum.

(a) 1 : 9
(b) 1 : 3
(c) 9 : 1
(d) 3 : 1

Q92. In an imaginary language, the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 are replaced by a, b, c, d, e, f, g, h, i and j.

The value of ((h × i) ÷ e) + ((a × d) - f) × g is:

(a) -16
(b) 14
(c) -5
(d) 28

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Q93. What does the amplitude of sound wave determine ?

(a) Loudness
(b) Pitch
(c) Frequency
(d) Amplitude

Q94. Who played the lead actor in the 2017 film 'Pink'?

(a) Akshay Kumar
(b) Abhishek Bacchan
(c) Amitabh Bachchan
(d) Anupam Kher

Q95. LK Advani is popular for his contribution in which of the following fields?

(a) Social activism
(b) Sports
(c) Music
(d) Politics

Q96. The table below shows the passing percentage of four schools over four years.

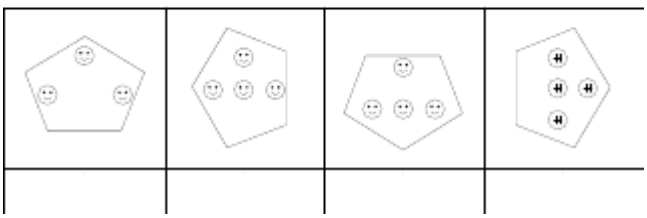
Name of School	2012-13	2013-14	2014-15	2015-16
PQR	27%	31%	45%	67%
ABC	61%	65%	50%	78%
DEF	95%	86%	80%	70%
XYZ	92%	82%	78%	71%

In which year the passing percentage result of all schools was above 60%?

(a) 2013-14
(b) 2012-13
(c) 2015-16
(d) 2014-15

Q97. Which pattern of answer figures is very similar to the given form?





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

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Q98. Computer scientists from the Indian Institute of Technology (IIT) Madras have built the first microprocessor with six industry-standard under Project Shakti. What was the initial batch of 300 chips named?

(a) INDIANINTEL
(b) ROSECRT
(c) RENDCART
(d) RISECREEK

Q99. Select the number which is related to the third number in the same way as the second number is to the first number.

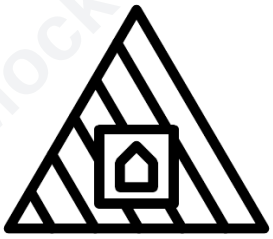
53 : 59 :: 61 : ____

(a) 67
(b) 62
(c) 58
(d) 66

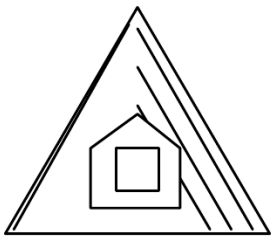
Q100. Find the shape that will replace the question mark in the following analogy.



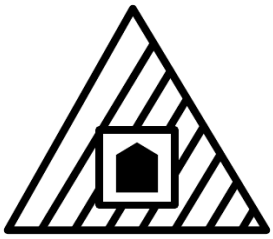
(a)



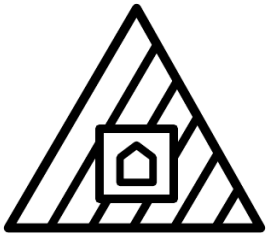
(b)



(c)



(d)



ANSWER KEY

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

SOLUTIONS

Q1. Answer: (c) Both 1 and 2 assumptions are implicit.

Assumptions 1: This is implicit because as it is given that dogs do not sleep much longer at night which means they take short naps.

Assumptions 2: This is implicit because as dogs do not sleep much longer at night it means they sleep during the day.

Hence, the correct answer is "Both 1 and 2 assumptions are implicit".

Additional Information

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

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

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

Q2. Answer: (c) July 2017

The correct answer is in July 2017.

• In July 2017, Ram Nath Kovind has been elected as the 14th President.

Key Points

• He is the current President of India.

• He was also Governor of Bihar in 2015.

• He succeeded Late. Pranab Mukherjee.

• He was a lawyer in Delhi High court and Supreme court, before coming to politics.

• He was born in Uttar Pradesh.

• The oath was taken by him in 25th July 2017.

Additional Information

• He is the first Indian President, who is from Rashtriya Swayamsevak Sangh.

• He served as the spokesperson of BJP in 2010.

Q3. Answer: (c) No assumption is implicit.

Assumption 1: It can not be assumed because the person in the statement is Idiot, nothing has been said about it. We have not to assumed something on our own.

Thus, Assumption 1 is not implicit.

Assumption 2: It can not be assumed for the given statements because the person in the statement is intelligent, nothing has been said about it. We have not to assumed something on our own.

Thus, Assumption 2 is not implicit.

Hence, the correct answer is "No assumption is implicit".

Additional Information

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

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

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

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

Q4. Answer: (a) Granary

As Gun is kept in the Armory.

Similarly,

Grain is kept in the Granary.

Hence, the correct answer is "Granary".

Additional Information

• A park full of wild animals and birds is called a Zoo.

Q5. Answer: (d) Nana Saheb

The correct answer is Nana Saheb.

• Nana Sahib was the adopted son of Bajirao II.

• Narayan Bhat and Gangabai were his father and mother.

Key Points

• He was denied his pension and title.

• In Maratha Empire, he was an Indian Peshwa.

• The rebellion of Kanpur was led by him.

• He believed that he deserves a pension from the British East India company.

• But the company refused to continue his pension followed by the death of his father.

• Due to these British policies.

• He decided to revolt against the British.

• In Cawnpower, the British garrison was forced to surrender by him.

• He was one of the important and famous leaders of the revolt of 1857.

Q6. Answer: (a) Cousin

Family chart,

Drawing the family tree according to the given information,

Family tree,

As Mr. X is the cousin of Ms. Y.

Hence, the correct answer is "Cousin".

Note -

As Brother is not given in the option, then cousin is the suitable answer. This question is from the previous year exam and the answer is as per the official answer key.

Q7. Answer: (b) 2.25

Shortcut Trick

Convert times to minutes for easier LCM: 1.8 hr = 108 min, 3 hr = 180 min, 2.25 hr = 135 min.

Let Total Work (LCM of 108, 180, 135) = 540 units.

Efficiencies: Pipe A = 5, Pipe B = 3, Combined (A + B − C) = 4.

Efficiency of C = (5 + 3) − 4 = 4 units/min.

Time x = 540 ÷ 4 = 135 min = 2.25 hours.

Therefore The correct answer is 2.25 hours.

Alternate Method

Given: Filling time of Pipe A = 1.8 hr, Pipe B = 3 hr, Combined time = 2.25 hr.

Formula: 1/T_A + 1/T_B − 1/T_C = 1/T_(Total)

Person/Pipe	Hours	Total Work	Efficiency

Pipe A	1.8	9	5
Pipe B	3	3	
(A + B − C)	2.25	4	

=> Total Efficiency of A and B = 5 + 3 = 8 units/hr.

=> Combined Efficiency with emptying pipe C = 4 units/hr.

=> Efficiency of Pipe C = 8 − 4 = 4 units/hr.

=> Value of x = Total Work ÷ Efficiency of C

=> x = 9 ÷ 4

=> x = 2.25 hours.

Therefore The correct answer is 2.25 hours.

Additional Information

Pipes & Cisterns Sign Convention

Inflow or filling pipes are taken as positive efficiency (+), while outflow or leakage pipes are taken as negative efficiency (−).

Net Work Done

The net efficiency is the sum of individual efficiencies. Time taken = Total Capacity ÷ Net Efficiency.

Q8. Answer: (b) 4 km

Representing the given information on NESW direction :

As Suraj 1st drove his bicycle towards the North direction(don't know the distance), then turned to the right and covered a distance of 2 km, then turned right and covered a distance of 4 km then he found himself 2 km east of the starting point. It means, he covered 4 km in the north direction.

Thus, In the north direction, Suraj went 4 Km away by bicycle.

Hence, the correct answer is "4 Km".

Q9. Answer: (b) Both 1 and 2 together are sufficient

Shortcut Trick

To find the number of brown female sheep, we require both the total number of brown sheep and the number of brown male sheep.

Statement 2 gives the total brown sheep (25% of 100 = 25).

Statement 1 gives the male brown sheep (10).

Subtracting male from total brown gives the female brown count: 25 − 10 = 15.

Therefore The correct answer is Both 1 and 2 together are sufficient.

Alternate Method

Given:

Total number of sheep in the farm = 100

Analyzing Statement 2:

=> Total Brown Sheep = 25% of 100

=> Total Brown Sheep = (25 ÷ 100) × 100 = 25

Analyzing Statement 1:

=> Male Brown Sheep = 10

Combining both statements:

=> Female Brown Sheep = Total Brown Sheep − Male Brown Sheep

=> Female Brown Sheep = 25 − 10 = 15

Therefore The correct answer is Both 1 and 2 together are sufficient.

Additional Information

Data Sufficiency

It involves determining if the provided statements contain enough information to solve the question, without necessarily needing to calculate the final numerical value.

Percentage Calculation

The percentage value is calculated as: Value = (Percentage ÷ 100) × Total. Here, 25% of 100 is 25.

Subset Logic

For any mutually exclusive categories (like male/female), the sum of the parts equals the total of that specific attribute (e.g., Brown

Male + Brown Female = Total Brown).

Q10. Answer: (b) 183

Shortcut Trick

Number: 33489. Last digit is 9, so the square root must end in 3 or 7.

Split the number: 334 | 89. Find the largest square less than 334.

$18^2 = 324$ and $19^2 = 361$. Thus, the first part is 18.

Possible answers are 183 or 187. Since 18 × 19 = 342 and 334 < 342, pick the smaller value.

Therefore The correct answer is 183.

Alternate Method

Given: Number = 33489

Formula Used: Long Division Method for Square Root.

=> Grouping from right: 3 | 34 | 89

=> Step 1: 1 × 1 = 1. Remainder = 2. Bring down 34. New dividend = 234.

=> Step 2: Double the quotient (1 × 2 = 2). 28 × 8 = 224. Remainder = 10. Bring down 89. New dividend = 1089.

=> Step 3: Double the current quotient (18 × 2 = 36). 363 × 3 = 1089. Remainder = 0.

=> Final Quotient = 183.

Therefore The correct answer is 183.

Additional Information

Square Root Units Digit Rule

If a perfect square ends in 1, root ends in 1/9; ends in 4, root ends in 2/8; ends in 5, root ends in 5; ends in 6, root ends in 4/6; ends in 9, root ends in 3/7.

Range Estimation

Since $180^2 = 32400$ and $190^2 = 36100$, the square root of 33489 must lie strictly between 180 and 190.

Q11. Answer: (a) 39

Shortcut Trick

Find the difference between the two numbers: 273 − 195 = 78.

The HCF must be a factor of this difference (78).

Factors of 78 are 1, 2, 3, 6, 13, 26, 39, 78.

The highest factor from the options that divides both 195 and 273 is 39.

Therefore The correct answer is 39.

Alternate Method

Given: Numbers are 195 and 273.

Method: Prime Factorization Method

=> Prime factors of 195 = 3 × 5 × 13

=> Prime factors of 273 = 3 × 7 × 13

=> Common factors = 3 × 13

=> HCF = 39

Therefore The correct answer is 39.

Additional Information

HCF (Highest Common Factor)

It is the greatest number that divides two or more numbers without leaving a remainder.

Division Method for HCF

Divide the larger number by the smaller number, then divide the previous divisor by the remainder until the remainder becomes zero.

Relationship between HCF and LCM

For two numbers a and b: Product of numbers (a × b) = HCF × LCM.

Q12. Answer: (a) 10 hours

Shortcut Trick

Let the total capacity of the hose be the LCM of 15, 12, and 20, which is 60 units.

Efficiency of Pipe x = 60 ÷ 15 = 4 units/hr

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Efficiency of Pipe y = 60 ÷ 12 = 5 units/hr

Efficiency of Pipe z (emptying) = 60 ÷ 20 = −3 units/hr

Combined efficiency = 4 + 5 − 3 = 6 units/hr

Total time taken = 60 ÷ 6 = 10 hr

Therefore The correct answer is 10 hr.

Alternate Method

Pipe	Time (hr)	Total Work (LCM)	Efficiency
Pipe x (Fill)	15	60 units	4
Pipe y (Fill)	12	5	
Pipe z (Empty)	20	−3	

Given:

Time taken by Pipe x = 15 hours

Time taken by Pipe y = 12 hours

Time taken by Pipe z = 20 hours

Calculations:

=> Total capacity of hose = LCM(15, 12, 20) = 60 units

=> Net efficiency when all pipes are open = Efficiency(x) + Efficiency(y) − Efficiency(z)

=> Net efficiency = (60/15) + (60/12) − (60/20)

=> Net efficiency = 4 + 5 − 3 = 6 units/hr

=> Total time required = Total Work ÷ Net Efficiency

=> Total time = 60 ÷ 6 = 10 hr

Therefore The correct answer is 10 hr.

Additional Information

Inlet and Outlet Pipes

An Inlet pipe fills the tank (positive efficiency), while an Outlet pipe empties the tank (negative efficiency).

Time and Work Relation

Total Work = Efficiency × Time. If a pipe fills a tank in 'n' hours, its work done in 1 hour is 1/n.

Combined Rate Formula

For two filling pipes A and B and one emptying pipe C, the net part filled in 1 hour = (1/A + 1/B − 1/C).

Q13. Answer: (d) 3600000

The correct answer is 3600000.

• 1 Kwh is equal to 3600000 joules.

• The unit of energy is expressed in kilowatt hour.

Key Points

• The energy consumed by electric utilities is also expressed in kilowatt hour.

• If for the time duration 1 hour, the 1 kw of power is sustained then it is called as kilowatt hour.

• In non-SI unit, hour is listed.

• The less commonly uses unit of energy is kilowatt hour.

• In kilowatt hour, the electrical energy is sold to consumers.

• Energy can neither be created nor be destroyed, it can only be transferred from one form to another.

Q14. Answer: (c) Jammu and Kashmir

The correct answer is Jammu and Kashmir.

• ISRO has joined hands with Jammu and Kashmir government to set up a telemedicine center at an altitude of 12,700 feet to serve pilgrims in route to the Amarnath shrine.

Key Points

• The real-time treatment will be provided by the Patanjali base camp hospital.

• Many health problems are faced by the pilgrims in high-altitude regions like Amarnath.

• To handle critically ill patients, the setup of an ICU will take place.

• By the efforts of ISRO, using telemedicine facilities. The medical services will be delivered in remote, distant in unserved areas.

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• A very small aperture terminal consists of the Shesnad telecommunication node.
• The facility of telemedicine is spread across the country with 105 centers.

Q15. Answer: (d) 0.45 moles

The correct answer is 0.45 moles.
The number of moles of a substance in a given sample can be represented by the following formula:
n = m/M
Here, n = the number of moles of the substance
m = mass of the given substance
M= Molar mass
Given- Atomic mass of C= 12
The atomic mass of O= 16
Molar mass of 1 mole of CO_2 = Molar mass of C +2 x Molar mass of O
= 12 + 32 = 44
So, no. of moles in 20 gm of CO_2 = 20/44 moles of CO_2
= 0.45 moles

Q16. Answer: (b) ODQH

Logic:- Each letter is increasing by 3.
Similarly,
Hence, the correct answer is "ODQH".

Q17. Answer: (b) Firozabad

The correct answer is Firozabad.
• Firozabad is famous for the work of glass bangles in Uttar Pradesh.
• Near the city of Agra, Firozabad is located.
Key Points
• Many glass-making industries are located here.
• So Firozabad is also known as the center of glassmaking.
• The bangles made here are of good quality.
• Revenue was brought through the city at the time of Akbar.
• The Etah district in north and Manipuri district in north bounds Firozabad.
• On the southern side, the boundary is made by the Yamuna River.
• The city is also important for market activities.
• In this city, female child labor is present extensively.
• In ancient times, the region was ruled by Chauhan rulers.
• In 1566, the foundation of the modern city of Firozabad was laid.

Q18. Answer: (b) Rajasthan

The correct answer is Rajasthan.
• Kalbelia is a dance form of Rajasthan.
• The dance reflects the culture of the state.
Key Points
• Both men and women perform in this dance.
• In ancient times, kalbelia community changed its location frequently.
• Catching snakes and trading snake venoms are the traditional occupations of the kalbelia community.
• The costumes of kalbelia dance look somewhere similar to serpents.
• Sapera and yogi also participate in this.
• This community is found in a large number in the pali district.
• In cane baskets, cobras are carried in a traditional basket by men in old times.
• There is a negative impact on the occupation of the kalbelia community after the passing of the wildlife protection act 1972.

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Q19. Answer: (a) 35

Given:

The Venn diagram about the people using newspapers.

Calculation:

Number of people who use only Sakaal newspaper = (from the Venn diagram) 9 + 26 = 35 people.

Q20. Answer: (d) Stephen Barclay

The correct answer is Stephen Barclay.

• Stephen Barclay was appointed by the British Prime minister Theresa as the new Brexit secretary.

Key Points

• The post of secretary was resigned by the Dominic Raab.

• The Brexit negotiation was overseen by the secretary.

• In 2016, this position was created.

• The department for existing the European Union is newly created.

• This department will be headed by the secretary.

• The planning for the event in the UK will be led by Barclay.

• Brexit is backed by Barclay.

• A very high Euroskeptic constituency is represented by a secretary.

• Micheal Gove was initially offered for this role.

• Anti-money laundering was also headed by Barclay.

Q21. Answer: (c) $Na_2CO_3(s) + 2HCl(aq) \rightarrow 2NaCl(aq) + H_2O(l) + CO_2(g)$

The correct answer is $Na_2CO_3(s) + 2HCl(aq) \rightarrow 2NaCl(aq) + H_2O(l) + CO_2(g)$.

• When an acid reacts with a metal carbonate or metal hydrogen a salt, carbon dioxide, and water are formed.

• It can be represented as-

Acid + Metal carbonate → Salt + Water + Carbon dioxide

• The current equation for this chemical reaction is given below-

$Na_2CO_3(s) + 2HCl\ (aq) \rightarrow 2NaCl\ (aq) + H_2O(l) + CO_2(g)$

Q22. Answer: (d) Sexual reproduction

The correct answer is Sexual reproduction.

• More diversity is allowed for Sexual Reproduction.

Key Points

• Sexual reproduction

• It is the process in which new organisms are created, by combining the genetic information from two individuals of different sexes.

• The genetic information is carried on chromosomes within the nucleus of specialized sex cells called gametes.

• In sexual reproduction, different mutations are continually reshuffled from one generation to the next when different parents combine their unique genomes; this results in an increase in genetic diversity.

Additional Information

• When from the parent plant, the growth of a new plant takes place it is called vegetative reproduction.

• Plant reproduction happens in both ways both naturally and artificially.

• The process in which replication of plants takes place by vegetative plants is called asexual propagation.

• Asexual propagation is developed by horticulturalists.

• There is a difference in the success rates of propagation.

• The offsprings that are produced through vegetative propagation are clones of their parent plants.

• Research areas are provided in the field of biology by vegetative propagation.

Q23. Answer: (c) 45

Shortcut Trick

Product of LCM and HCF = Product of the two numbers.

90 × 9 = 18 × Second Number

Second Number = (90 × 9) ÷ 18 = 5 × 9 = 45

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Therefore The correct answer is 45.
Alternate Method
Given:
LCM = 90
HCF = 9
First Number (a) = 18
Formula Used:
a × b = LCM × HCF
Calculations:
=> 18 × Second Number = 90 × 9
=> 18 × Second Number = 810
=> Second Number = 810 ÷ 18
=> Second Number = 45
Therefore The correct answer is 45.
Additional Information
HCF Property
The HCF of two numbers always divides their LCM exactly.
Co-prime Numbers
For two co-prime numbers, the HCF is always 1 and their LCM is the product of the numbers.
LCM and HCF for Fractions
LCM of fractions = LCM of numerators ÷ HCF of denominators. HCF of fractions = HCF of numerators ÷ LCM of denominators.

Q24. Answer: (c) 18

Given:
54 ÷ 6 + 3 × 3 = ?
Concept used:
Calculation:
54 ÷ 6 + 3 × 3 = ?
9 + 3 × 3 = ?
9 + 9 = ?
18 = ?
Therefore The value of '?' is 18.

Q25. Answer: (d) PQR

Given:
The table about the passing percentage of four schools in four years.
Calculation:
The gradual increase means there must no decrease in between.
Looking at the table, we can see that :
PQR → 27%, 31%, 45%, 67%
In all others, there is a decrease while going from 2012 to 2016.
Therefore A gradual increase is shown by PQR.

Q26. Answer: (d) 60√3 m

Shortcut Trick
Net height difference between Tower and Platform = 78 − 18 = 60 m.
In a 30°−60°−90° triangle, the side opposite to 30° is 1 unit and the side opposite to 60° is √3 units.
Here, 1 unit = 60 m => √3 units = 60√3 m.
Therefore The correct answer is 60√3 m.
Alternate Method
Given:
Height of Platform (h_p) = 18 m
Height of Tower (h_t) = 78 m

Angle of Elevation (θ) = 30°

Calculations:

=> Let the distance between the platform and the tower be x.

=> Height of tower above the platform level = 78 − 18 = 60 m.

=> In right-angled triangle formed at the top: tan(30°) = 60 / x

=> 1 / √3 = 60 / x

=> x = 60√3 m

Therefore The correct answer is 60√3 m.

Additional Information

Trigonometric Ratios

tan θ = Perpendicular / Base. Common values include tan 30° = 1/√3, tan 45° = 1, and tan 60° = √3.

Angle of Elevation vs Depression

The angle of elevation is measured upward from the horizontal, while the angle of depression is measured downward. Both are equal when looking at the same line of sight from opposite ends.

Q27. Answer: (d) -, ×, ÷

Shortcut Trick

Check options using BODMAS rule to find the combination that equals 5.

Try Option (4): −, ×, ÷

((120 − 110) × 5) ÷ 10 => (10 × 5) ÷ 10 => 50 ÷ 10 = 5.

The result matches the RHS of the equation.

Therefore The correct answer is −, ×, ÷.

Alternate Method

Given: Equation ((120 ? 110) ? 5) ? 10 = 5.

Method: Substitute mathematical operators from options into the equation.

Step-by-step verification:

=> Let symbols be −, ×, and ÷ from Option (4).

=> ((120 − 110) × 5) ÷ 10

=> (10 × 5) ÷ 10

=> 50 ÷ 10

=> 5 = 5 (LHS = RHS)

Therefore The correct answer is −, ×, ÷.

Additional Information

BODMAS Rule

Simplification follows the order: Brackets, Of, Division, Multiplication, Addition, and Subtraction.

Symbol Substitution

In these problems, always prioritize checking options involving division and multiplication first to see if they result in integers.

Q28. Answer: (a) Swajal Scheme

The correct answer is Swajal Scheme.

• Swajal" scheme was launched in February 2018 under the National Rural Drinking Water Programme, in six states of Bihar, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Uttarakhand.

Key Points

• This scheme aims at providing sustainable and adequate drinking water in the rural areas.

• The Scheme benefits have been extended to all the 117 Aspirational Districts spread over 28 States.

Important Points

• The objective of Swajal scheme is a single village piped water scheme, hence to have a low cost scheme and maintenance cost that would reduce the tariff burden on community.

Q29. Answer: (b) Valmiki

The correct answer is Valmiki.

• Ramayana is an ancient Indian epic that was composed in the 5^(th) century BCE.

Key Points

• This poem narrates the exile and return of Rama, prince of Ayodhya.
• It is one of the two most important Sanskrit epics of ancient India, the other one is Mahabharata.
• It was composed in Sanskrit by Valmiki.
• It is one of the largest ancient epics in world literature and in its present form it consists of 24,000 verses divided into seven books.
• This poem has an important influence on later Sanskrit poetry and Hindu life and culture.

Q30. Answer: (a) Parenchyma

The correct answer is Parenchyma.
• Parenchyma is a type of simple permanent tissue.
Key Points
• It refers to a specific type of ground tissue with thin cell walls and the ability to grow and divide.
• They are non-vascular and are composed of simple, living, and undifferentiated cells, which are adapted to perform various functions which are as follows-
• Parenchyma helps in storing food and provides support to plants.
• The parenchyma of stem and roots helps in the storage of water and nutrients.
• It is involved in the process of growth and development.
• It plays a major role in the movement of water and other nutrients.
• In leaves, parenchyma is responsible for photosynthesis and the exchange of gases.
• It also performs other specialized functions such as buoyancy control in aquatic plants.

Q31. Answer: (d) 38

Given:
1) Total students in college = 100
2) Number of students who play all three games = 5
3) Number of students who play only Football (A) = 13
4) Number of students who play only Tennis (B) = 12
5) Number of students who play only Cricket (C) = 10
6) Number of students who play both Football and Cricket = 10
7) Number of students who play both Tennis and Cricket = 12
Concepts used :
Used of Venn diagram.
Calculation;
Let the number of students who only like playing Tennis and Football be x,
From the above figure: We can write,
Total number of students,
100 = 13 + x + 5 + 10 + 12 + 12 + 10
100 = 62 + x
x = 100 - 62
x = 38.
Hence, the correct answer is "38".

Q32. Answer: (d) Sixth

The correct answer is Sixth.
• According to the New World Wealth report, India was the best-performing wealth market globally in the year 2017.
Key Points
• Total wealth implies the private wealth held by all the individuals living in a particular country.
• It includes all their assets less any liabilities.
• The total wealth of India rose 25% from $6,584 billion in 2016 to $8,230 billion in 2017.
• India has approximately 20,730 multi-millionaires which is the 7^(th) largest in the world.
Additional Information
• The top three countries on the list were-
• The United States of America with a total wealth of 64,584 billion US dollars.

• China with a total wealth of 24,803 billion US dollars
• Japan with a total wealth of 19,522 billion US dollars.

Q33. Answer: (b) 49950

Shortcut Trick
Identify the place value of each 5 in the number 1452058.
First 5 is at the ten-thousands place → 5 × 10,000 = 50,000.
Second 5 is at the tens place → 5 × 10 = 50.
Difference = 50,000 − 50 = 49,950.
Therefore The correct answer is 49950.
Alternate Method
Given: The number is 1,452,058.
=> In 14,52,058, the first 5 is at the 10,000s place.
=> Place value of first 5 = 5 × 10,000 = 50,000.
=> The second 5 is at the 10s place.
=> Place value of second 5 = 5 × 10 = 50.
=> Difference = 50,000 − 50 = 49,950.
Therefore The correct answer is 49950.
Additional Information
Face Value
The face value of a digit is the digit itself, regardless of its position in the number. For example, the face value of 5 in 1452058 is always 5.
Place Value
The place value of a digit depends on its position in the number and is calculated as (Face Value × Value of the Position).
Indian vs International System
While 10,000 is common to both, the next positions differ (Lakh in Indian vs Hundred-Thousand in International system).

Q34. Answer: (b) Long walk to freedom

The correct answer is a Long walk to freedom.
• Nelson Mandela was a South African politician and activist.
• He was the first black President of South Africa who was appointed on April 27, 1994.
Key Points
• During his rule, he focused on ending racism, poverty, inequality, and improving racial understanding in South Africa.
• Long Walk to Freedom is an autobiography written by him.
• It was published in 1994 by Little Brown & Co.
• This book gives a glimpse of his early life, education, and 27 years in prison.
Additional Information
• In the second part of the book, Mandela introduced the political and social aspects of apartheid in South Africa.

Q35. Answer: (a) Silver

The correct answer is Silver.
• Silver is the least active.
• The reactivity series helps us to know how metals react.
• A more reactive metal displaces a less reactive metal from a compound.
Key Points
• Some metals are more reactive as compared to others. We arrange them in order of their reactivity in a series that starts with the most reactive.
• Silver is a good conductor of electricity because of the presence of delocalized electrons between the layers of metal ions.
• It is not highly reactive because a lot of energy is required to break the metallic bonds within the layers.

Q36. Answer: (a) Sri Lanka

The correct answer is Sri Lanka.
• India does not share a terrestrial border with Sri Lanka.

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• Ceylon was the former name of Sri Lanka.

Key Points

• India shares its land borders with seven countries.
• Pakistan and Afghanistan in the northwest, China, Nepal, and Bhutan in the North, and Myanmar and Bangladesh in the east.
• Towards the south, India has two neighboring island countries - Sri Lanka and Maldives.
• Sri Lanka and India are separated by the Indian Ocean.
• So terrestrial border with Sri Lanka is not shared by India.
• Sri Lanka is India’s maritime neighbour.
• Bangladesh is the country with which India shares its largest land border.
• Most India and Bangladesh enclaves were exchanged in 2015.
• To set up border haats, the state government suggests to the Ministry of external affairs.

Q37. Answer: (a) +, -, +, =

According to the given information we have to check the options one by one:

Given series:

2 _ 5 _ 2 _ 6 _ 11

We have using the BODMAS rule:

Option 1) → +, -, +, =

2 + 5 - 2 + 6 = 11

13 - 2 = 11

11 = 11

Option 2) → +, -, -, +

2 + 5 - 2 - 6 + 11

18 - 8 → 10

Option 3) → -, +, =, +

2 - 5 + 2 = 6 + 11

4 - 5 = 17

-1 ≠ 17

Option 4) → +, +, +, -

2 + 5 + 2 + 6 - 11

15 - 11 → 4

Hnce, the correct answer is "+, -, +, =".

Q38. Answer: (c) 5

Shortcut Trick

Divisibility rule of 11: The difference between the sum of digits at odd positions and even positions must be 0 or a multiple of 11.

Sum of digits at odd places (7, 6, x) = 7 + 6 + x = 13 + x

Sum of digits at even places (3, 4) = 3 + 4 = 7

Difference = (13 + x) − 7 = 6 + x

For divisibility, 6 + x = 11 => x = 5

Therefore The correct answer is 5.

Alternate Method

Given: Number 7364x is divisible by 11.

Formula Used: Sum_(odd) − Sum_(even) = 0, 11, 22...

=> Sum of digits at 1^(st), 3^(rd), and 5^(th) positions = 7 + 6 + x = 13 + x

=> Sum of digits at 2^(nd) and 4^(th) positions = 3 + 4 = 7

=> Difference = (13 + x) − 7

=> Difference = 6 + x

=> For 7364x to be divisible by 11, (6 + x) must be 11 (as x is a single digit, 0 to 9).

=> 6 + x = 11

=> x = 11 − 6

=> x = 5

Therefore The correct answer is 5.

Additional Information

Divisibility Rule of 3 and 9

A number is divisible by 3 or 9 if the sum of its digits is divisible by 3 or 9 respectively.

Divisibility Rule of 8

A number is divisible by 8 if its last three digits are divisible by 8 or are 000.

Nature of Digits

In any divisibility problem involving a missing digit x, remember that $0 \leq x \leq 9$.

Q39. Answer: (d) 34.5

Shortcut Trick

Target Average for 15 tests = Subir's average = 29

Ruchira's current deficiency in 11 tests = 11 × (29 − 27) = 22 points

Extra average needed per remaining test = 22 ÷ 4 = 5.5

Required Average for remaining tests = Target Average + Extra Average = 29 + 5.5 = 34.5

Therefore The correct answer is 34.5.

Alternate Method

Given:

Subir's total tests = 15 | Subir's average = 29

Ruchira's current tests = 11 | Ruchira's current average = 27

Total tests to match = 15 | Remaining tests = 4

Formula Used:

Total Score = Average × Number of Tests

Remaining Average = (Required Total − Current Total) ÷ Remaining Tests

Calculations:

=> Subir's total score = 15 × 29 = 435

=> Ruchira's current score = 11 × 27 = 297

=> Score needed by Ruchira in remaining 4 tests = 435 − 297 = 138

=> Required average for remaining 4 tests = 138 ÷ 4

=> Required average = 34.5

Therefore The correct answer is 34.5.

Additional Information

Concept of Average

Average is the sum of all observations divided by the total number of observations. Formula: Average = $\Sigma x_i \div n$.

Net Deviation Rule

The sum of deviations of all observations from the mean (average) is always zero. This is useful for finding missing values in a dataset.

Weighted Average

When groups have different sizes, the combined average is calculated as $A_{(avg)} = (n1a1 + n2a2) \div (n1 + n2)$.

Q40. Answer: (a) Both I and II are implicit

Assumption 1: This is assumed because this increased intake of saturated fats and salt over a sustained period of time could potentially lead to a whole host of health problems, such as obesity, high blood pressure, and cholesterol levels, and heart disease - all of which could.

So, assumption 1 is implicit.

Assumption 2: This is implicit because this increased intake of saturated fats and salt over a sustained period of time could potentially lead to a whole host of health problems, such as obesity, high blood pressure and cholesterol levels, and heart disease - all of which could prove fatal.

So, Assumption 2 is implicit.

Hence, the correct answer is "Both I and II are implicit".

Additional Information

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

1. Do not go too logical with the statements. Analyze the given information and the assumption must only be made based on the

information in the statement. Do not overcomplicate it.

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

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

Q41. Answer: (d) Describes the relationship between the forces of two mutually affecting objects.

The correct answer is Describes the relationship between the forces of two mutually affecting objects.

• Newton's second law of motion relates to the behaviour of objects for which all existing forces are unbalanced.

Key Points

• The second law of motion is more quantitative and is used broadly to calculate what happens in situations involving a force.

• It states that

• The acceleration of an object depends upon the net force acting on the object and the mass of the object.

• In other words, the rate of change of momentum of a body in a given time is directly proportional to the applied force and is in the same direction as the applied force.

• Thus, this law helps to ascertain what happens to the massive body when acted upon by an external force.

Q42. Answer: (a) 34.39

Shortcut Trick

Using the Multiplying Factor method for 4 years.

Rate of depreciation = 10% = 1/10 → Factor = 9/10.

Price after 4 years = Initial × (0.9)^4 = Initial × 0.6561.

Percentage fall = (1 − 0.6561) × 100% = 34.39%.

Therefore The correct answer is 34.39%.

Alternate Method

Given: Annual depreciation rate (R) = 10%, Time (n) = 4 years.

Formula: Final Value = Initial Value × $(1 - R/100)^n$

=> Let the initial price be 100 units.

=> Price after 4 years = 100 × (1 − 10/100)^4

=> Price after 4 years = 100 × (0.9)^4

=> Price after 4 years = 100 × 0.6561 = 65.61 units.

=> Total fall in price = 100 − 65.61 = 34.39 units.

=> Percentage fall = (34.39 / 100) × 100 = 34.39%.

Therefore The correct answer is 34.39%.

Additional Information

Successive Percentage Change

For two successive changes of a% and b%, the effective change is [a + b + (ab/100)]%. For depreciation, use negative values.

Depreciation Formula

It follows the reverse of Compound Interest: V = P(1 − R/100)^t, where V is the value after time t.

Base Change Property

When a value decreases by x%, to restore it to the original value, it must increase by [x / (100 − x)] × 100%.

Q43. Answer: (a) 0 J

The correct answer is 0J.

Concept:

• Work is said to be done by a force when the body is displaced actually through some distance in the direction of the applied force.

• Since the body is being displaced in the direction of F, therefore work done by the force in displacing the body through a distance s is given by:

W = vec F · vec s

Or, W = Fs cos θ

• Thus work done by a force is equal to the scalar or dot product of the force and the displacement of the body.

• If the direction of force and displacement is opposite then the work done will always be negative, since angle θ between force

and displacement is 180°

Therefore Work done, W = Fdxcos 180° = Fdx (- 1) = - Fdx

• So, from this, we can conclude that

• Work done is positive when the direction of both force and displacement are the same

• Work done is negative when the direction of force and displacement are the opposite.

• Whereas work is done is zero when direction force (Centripetal force) and displacement are perpendiculars this case is true for an object moving in a circular motion

Explanation:

• When the cycle moves on a horizontal surface, then work done by gravity is zero since gravitational force acts perpendicular to the displacement i.e., θ = 90°

=> W = Fs cos 90° = 0 [Because cos 90° = 0]

Hence the work done by a boy against gravity in which he takes a bicycle is zero.

Q44. Answer: (a) Marsilea

The correct answer is Marsilea.

• Vascular plants are those categories of plants, which have specialized vascular tissues for the transportation of water, minerals, and food.

Key Points

• They also have roots, stems, and leaves and are also known as tracheophytes, which means “tube plants.”

• They contain specialized conducting tissues known as xylem and phloem.

• Xylem transports water and minerals from roots whereas Phloem transports food produced during photosynthesis to other parts of the plants.

Additional Information

• Example-

• Marsilea is a vascular plant that is a genus of nearly 65 species of aquatic ferns of the family Marsileaceae.

• These are small plants with an unusual appearance.

Q45. Answer: (a) Only conclusion 1 follows.

The logic follows here is:

Conclusions:

1. Pedestrians should use pedestrian crossings for safety → True (This is logically correct with regards to the statement.)

2. All children know what a pedestrian crossing is → False (This is logically incorrect with regards to the statement as nothing is mentioned whether children should know or not, we can't assume anything on our own).

Hence, the correct answer is "Only conclusion 1 follows".

Additional Information

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

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

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

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

Q46. Answer: (a) Deepika Pallikal Karthik

The correct answer is Deepika Pallikal Karthik.

• Dipika Pallikal Karthik is an Indian professional squash player.

• She was born in Chennai into a Malayali family.

• She is the daughter of Sanjiv and Susan Pallikal.

Key Points

• She is the first Indian squash player to break into the top 10 in the PSA Women's rankings.

• She is also the first Indian to play in the final of a silver event of the Tournament of Champions, 2012, and the semi-finals of a gold event Australian Open, 2012.

Important Points

• She became the first female squash player to win the Arjuna Award, in 2012 and the Padma Shri, India’s fourth-highest civilian

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honour in 2014.

Q47. Answer: (d) North-West

The logic follows here is:

If 'South-East' is called 'East', 'North-West' is called 'West', 'South-West' is called 'South'

Now, North will be called as North-West.

Hence, the correct answer is "North-West".

Q48. Answer: (b) 4 m

The correct answer is 4 m.

Ep = mgh

Here, Ep= Potential energy

m= mass

g= Gravitational field strength

h= Vertical height

Given-

Mass of the body= 14 kg

Ep= 560 J

'g' = 10 ms-2

Putting these values in the formula mentioned above, we get-

Ep= mgh

560= 14×10×h

Therefore, h = 560/ 140

= 4 m

Q49. Answer: (d) 19SQ

The pattern follows here is:

Hence, the correct answer is "19SQ".

Q50. Answer: (a) At C

The correct answer is At C.

Key Points

• A concave mirror is a type of spherical mirror in which, the reflecting surface is the inner curved surface of the sphere.

• The incident light is reflected inwards because of its shape. Thus, such mirrors are also called converging mirrors.

• A concave mirror forms different images which depend on the distance between the object and the mirror.

• In a concave mirror, the object should be placed at C (center of curvature) to obtain a real, inverted image of the same size at C. In this case, the image dimensions are equal to the dimensions of the object.

Q51. Answer: (b) tan θ

Shortcut Trick

Put θ = 45° in the given expression.

=> [(1 + tan²45°) × cot 45°] ÷ cosec²45°

=> [(1 + 1²) × 1] ÷ (√2)² = [2 × 1] ÷ 2 = 1

Checking options for θ = 45°: (1) cot 45° = 1, (2) tan 45° = 1. Since tan θ is the standard simplification, we verify with 30° or use identities.

Therefore The correct answer is tan θ.

Alternate Method

Given: Expression = frac(1 + tan²θ)cot θ cosec² θ

Formula Used: 1 + tan²θ = sec²θ | sec θ = 1/cos θ | cosec θ = 1/sin θ | cot θ = cos θ/sin θ

=> Expression = (sec²θ × cot θ) ÷ cosec²θ

=> Expression = [(1/cos²θ) × (cos θ/sin θ)] ÷ (1/sin²θ)

=> Expression = [1 / (cos θ × sin θ)] × sin²θ

=> Expression = sin²θ / (cos θ × sin θ)

=> Expression = sin θ / cos θ = tan θ

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Therefore The correct answer is tan θ.

Additional Information

Pythagorean Identities

$\sin^2\theta + \cos^2\theta = 1$; $1 + \tan^2\theta = \sec^2\theta$; $1 + \cot^2\theta = \text{cosec}^2\theta$.

Reciprocal Relations

$\tan\theta = \sin\theta / \cos\theta$ and $\cot\theta = \cos\theta / \sin\theta$.

Symmetry in Trigonometry

sec θ and cosec θ are reciprocals of cos θ and sin θ respectively.

Q52. Answer: (d) 4.5

Shortcut Trick

Time to meet (T) = √(t1 × t2)

Given: t1 = 7.5 hours (Sakira), t2 = 2.7 hours (Bryan)

T = √(7.5 × 2.7) = √20.25 = 4.5 hours

Therefore The correct answer is 4.5 hours.

Alternate Method

Given:

Time taken by Sakira after meeting (t1) = 7.5 hours

Time taken by Bryan after meeting (t2) = 2.7 hours

Formula Used:

If two objects start at the same time from X and Y and after meeting take t1 and t2 hours to reach Y and X respectively, then the time of meeting (T) is given by T = √(t1 × t2).

Calculations:

=> T = √(7.5 × 2.7)

=> T = √(75/10 × 27/10)

=> T = √(2025/100)

=> T = 45/10

=> T = 4.5 hours

Therefore The correct answer is 4.5 hours.

Additional Information

Speed Ratio Property

When two bodies meet and then reach their destinations in t1 and t2 time, the ratio of their speeds is s1/s2 = √(t2/t1).

Relative Speed

If two objects move in opposite directions with speeds a and b, their relative speed is (a + b). If they move in the same direction, it is |a − b|.

Q53. Answer: (b) Son

The family chart is as follows:

Drawing the family tree as per the given information:

Varun is related to Manoj as the Son.

Hence, the correct answer is "Son".

Q54. Answer: (d) √((x + 1)^6)

Given:

Expression: $x^3 + 3x^2 + 3x + 1$

Concept used:

Quadratic surd: An expression that contains a square root under which is a rational number which is not a perfect square.

Calculation:

$x^3 + 3x^2 + 3x + 1 = (x + 1)^3$

The expression $(x + 1)^3$itself is not a perfect square.

Then, to represent it in quadratic surd form, we just need to write it in the form of a perfect square under the square root.

$(x + 1)^3$ = √(x + 1)^6

Therefore The quadratic surd form of the above expression is √(x + 1)^6.

Q55. Answer: (c) Galileo Galilei

The correct answer is Galileo Galilei.

• Galileo Galilei's was an Italian astronomer and his observations of the solar system and the Milky Way have reformed our understanding of our place in the Universe.

Key Points

• The discoveries of Galileo Galilei about the Moon, Jupiter's moons, Venus, and sunspots supported the fact that the Sun - not the Earth was the center of the Universe, as was commonly believed earlier.

• He also provided strong evidence that planets orbited the sun.

• His work laid the foundation for today's modern space probes and telescopes.

Q56. Answer: (a) 26

The correct answer is 26.

• 2018 Commonwealth Games were held at Gold Coast, Australia from 4 to 15 April 2018.

Key Points

• India competed in the Commonwealth Games for the 18^(th)time. India finished at 3^(rd) spot in the tournament with 26 Gold medals and a total of 66 medals.

• It was the best position achieved by India since the 2010 Commonwealth Games.

• India appeared as the best nation in 5 disciplines, weightlifting, shooting, wrestling, badminton, and table tennis, and the second-best nation in boxing.

• India won their maximum number of medals in Shooting i.e., 16 in total and seven of them were gold.

Q57. Answer: (a) TRS

The correct answer is TRS.

• Telangana Rashtra Samithi is an Indian regional political party in Telangana which was founded on 27 April 2001 by K. Chandrashekar Rao.

Key Points

• This party was created with the agenda of creating a separate state, Telangana with Hyderabad as its capital.

• This party formed the first government of the state with K. Chandrashekar Rao as its chief minister in 2014.

• Telangana Legislative Assembly elections in the year 2018 were also won by this part for the second time.

Q58. Answer: (a) 6

Shortcut Trick

Check the unit digit of cubes for digits 0−9: $0^3 \to 0$, $1^3 \to 1$, $4^3 \to 64(\to 4)$, $5^3 \to 125(\to 5)$, $6^3 \to 216(\to 6)$, $9^3 \to 729(\to 9)$.

The digits that remain the same are 0, 1, 4, 5, 6, and 9.

Total such digits = 6.

Therefore The correct answer is 6.

Alternate Method

Given: Unit digit of cube root = Unit digit of the number.

Let the unit digit of the cube root be x. Then the unit digit of x^3 must be x.

=> $0^3 = 0$ (Match)

=> $1^3 = 1$ (Match)

=> $2^3 = 8$ (No)

=> $3^3 = 27 \to 7$ (No)

=> $4^3 = 64 \to 4$ (Match)

=> $5^3 = 125 \to 5$ (Match)

=> $6^3 = 216 \to 6$ (Match)

=> $7^3 = 343 \to 3$ (No)

=> $8^3 = 512 \to 2$ (No)

=> $9^3 = 729 \to 9$ (Match)

=> Total matching digits = {0, 1, 4, 5, 6, 9}

Therefore The correct answer is 6.

Additional Information

Interchangeable Cube Units

For digits 2 and 8, the unit digits of their cubes are 8 and 2 respectively. Similarly, for 3 and 7, they are 7 and 3.

Perfect Cube Identification

A perfect cube can end in any digit from 0 to 9, unlike perfect squares which cannot end in 2, 3, 7, or 8.

Square Root Unit Digits

The unit digit of a square root is equal to the unit digit of the number only for digits 0, 1, 5, and 6.

Q59. Answer: (b) 15,870

Shortcut Trick

Net percentage increase for two years = x + y + (x × y)/100

=> 15 + 15 + (15 × 15)/100 = 30 + 2.25 = 32.25%

Population after 2 years = 12,000 + 32.25% of 12,000

=> 12,000 + 3,870 = 15,870

Therefore The correct answer is 15,870.

Alternate Method

Given:

Initial population (P) = 12,000

Annual growth rate (R) = 15%

Time (n) = 2 years

Formula Used:

Final Population = $P \times (1 + R/100)^n$

Calculations:

=> Final Population = $12,000 \times (1 + 15/100)^2$

=> Final Population = $12,000 \times (115/100) \times (115/100)$

=> Final Population = $12,000 \times (23/20) \times (23/20)$

=> Final Population = $12,000 \times (529/400)$

=> Final Population = 30×529

=> Final Population = 15,870

Therefore The correct answer is 15,870.

Additional Information

Percentage Change

Population growth follows the principle of Compound Interest. Successive percentage changes are calculated on the updated value of the previous year.

Successive Percentage Formula

For two successive changes of a% and b%, the effective change is (a + b + ab/100)%. Use positive for increase and negative for decrease.

Ratio Method

A 15% increase means the value goes from 100 to 115, which simplified is a ratio of 20 : 23. For two years, the ratio becomes 20^2 : 23^2 = 400 : 529.

Q60. Answer: (d) 140 km/hr

Shortcut Trick

Relative Speed = (Sum of lengths) ÷ (Time taken)

Sum of lengths = 157 + 123 = 280 m

Speed in m/s = 280 ÷ 7.2

Speed in km/hr = (280 ÷ 7.2) × (18 ÷ 5) = 140 km/hr

Therefore The correct answer is 140 km/hr.

Alternate Method

Given:

Length of first train (L1) = 157 m

Length of second train (L2) = 123 m

Time taken (t) = 7.2 seconds

Formula Used:

Relative Speed (S1 + S2) = (L1 + L2) ÷ Time

To convert m/s to km/hr, multiply by 18/5.

Calculations:

=> Total Distance = 157 + 123 = 280 m

=> Relative Speed (m/s) = 280 ÷ 7.2

=> Relative Speed (km/hr) = (280 ÷ 7.2) × (18 ÷ 5)

=> Relative Speed (km/hr) = (2800 ÷ 72) × (18 ÷ 5)

=> Relative Speed (km/hr) = (2800 ÷ 4) × (1 ÷ 5)

=> Relative Speed (km/hr) = 700 ÷ 5 = 140 km/hr

Therefore The correct answer is 140 km/hr.

Additional Information

Relative Speed in Opposite Directions

When two objects move in opposite directions, their relative speed is the sum of their individual speeds: V_(rel) = V1 + V2.

Relative Speed in Same Direction

When two objects move in the same direction, their relative speed is the difference of their individual speeds: V_(rel) = |V1 − V2|.

Unit Conversion

1 m/s = 18/5 km/hr and 1 km/hr = 5/18 m/s.

Q61. Answer: (b) 55

Concept used:

n(A U B U C) = n(A) + n (B) + n(c) - n(A ∩ B) - n(B ∩ C) - n(C ∩ A) + n(A ∩ B ∩ C)

Where, n(A U B U C) = no of students failed in all subject

n(A ∩ B ∩ C) = number of total students failed

Calculation:

Total students pass = 100

So, total students fail = 200 - 100 = 100

Students failed in Physics = 200 - 160 = 40

Now,

100 = 80 + 40 + 30 - (15 + 30 + 10) + students failed in all subjects

=> students failed in all subjects = 100 - 150 + 55

=> students failed in all subjects = 155 - 150 = 5

Again,

Failed in only (M, P) = 30 - 5 = 25

Failed in only (P, C) = 10 - 5 = 5

Failed in only (C, M) = 15 - 5 = 10

So,

Failed in only maths = 80 - (10 + 5 + 25) = 80 - 40 = 40

Failed in only physics = 40 - (25 + 5 + 5) = 40 - 35 = 5

Failed in only chemistry = 30 - (10 + 5 + 5) = 30 - 20 = 10

Thus, total students failed in only one subject = 40 + 5 + 10 = 55

Therefore The correct answer is option (2).

Q62. Answer: (a) To study the properties of the elements in a convenient manner.

The correct answer is To study the properties of the elements in a convenient manner.

Key Points

• There are many elements that are known to us and it is quite difficult to study their properties separately.

• So, in order to make their study easier and understand the properties of the elements properly, the classification of elements is done.

• Classification is the process of arranging similar elements together and separating them from dissimilar elements.

• The method of arranging the elements into different classes is termed as the Periodic Classification of elements.

• It is based on the similarities in the properties, which helps to understand the properties of the elements in a convenient manner.

Q63. Answer: (a) Inertia

The correct answer is Inertia.

Key Points

• Inertia is the tendency of an object to resist changes in its state of motion.

• The state of motion of an object is defined by its velocity - the speed with a direction. Thus, inertia could be redefined as follows:

• Inertia: the tendency of an object to resist changes in its velocity.

• An object at rest has zero velocity - and (in the absence of an unbalanced force) will remain with a zero velocity. Such an object will not change its state of motion (i.e., velocity) unless acted upon by an unbalanced force.

• Example - An object in motion with a velocity of 2 m/s, East will (in the absence of an unbalanced force) remain in motion with a velocity of 2 m/s, East. Such an object will not change its state of motion (i.e., velocity) unless acted upon by an unbalanced force. Objects resist changes in their velocity.

Additional Information

• Force-

• Force, in mechanics, any action that tends to maintain or alter the motion of a body or to distort it. The concept of force is commonly explained in terms of Isaac Newton's three laws of motion set forth in his Principia Mathematica (1687).

• Momentum-

• Momentum, a product of the mass of a particle and its velocity. Momentum is a vector quantity; i.e., it has both magnitude and direction. Isaac Newton's second law of motion states that the time rate of change of momentum is equal to the force acting on the particle

• Energy-

• In physics, energy is the quantitative property that must be transferred to an object in order to perform work on, or to heat, the object. Energy is a conserved quantity; the law of conservation of energy states that energy can be converted in form, but not created or destroyed.

Q64. Answer: (b) Acquired Immune Deficiency Syndrome

The correct answer is Acquired Immune Deficiency Syndrome.

• AIDS stands for Acquired immune deficiency syndrome.

Key Points

• AIDS:

• It is a syndrome caused by a virus termed HIV (human immunodeficiency virus).

• This virus affects the immune system in humans and makes them much more vulnerable to infections and diseases.

• It is a disease that progressed initially for a long period of time without any symptoms.

• When the HIV virus attacks the T-cells in the immune system, it makes your body weak symptoms like a headache, fever, sore joints, and muscles, etc. start appearing. When AIDS remains unattended, it leads to death.

Q65. Answer: (b) b

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 2".

Additional Information

In a mirror image Left changes to right and the right changes to left vice-versa.

When placement of mirror not given, By default we will assume it in Vertical direction.

The Letter adjacent to the mirror after the mirror image will adjacent to it just with the left change to right and right change to left vice-versa.

The starting letter of the word will be at last after the mirror image drawn with left changes to right and right changes to left.

Q66. Answer: (a) Cat

The logic follows here is:

All of them are the young ones of the animals except the cat which does not refer to any young one.

Animals	Their Young Ones
Cat	Kitten
Sheep	Lamb
Tiger	Cub

Hence, the correct answer is "Cat".

Additional Information

Some important animals and their young ones.

Animals	Their Young Ones
Pig	Piglet
Deer	Fawn
Kangaroo	Joey
Hare	Leveret
Tiger	Cub
Elephant	Calf

Q67. Answer: (b) Glass

The correct answer is Glass.

Key Points

• Thermal insulation is the reduction of heat transfer between the objects in thermal contact.

• Glass is the most common insulation used in modern times.

• It is used as an insulator because it has atoms that have electrons that are closely packed with each other.

• Hence, because of this property, it does not allow the electrons to roam freely and do sharing with nearby atoms, thereby, preventing the flow of electrical current in other materials.

Additional Information

• Aluminum

• It is obtained from bauxite.

• It is a lightweight and non-corrosive mineral.

• It is cheaper than copper and is used in electrical appliances.

• It is also used to make household utensils, car parts, railway carriages, aircraft parts, windows, and doors.

• It is also used in the chemical industry, oil refining industry, cement iron, and steel industry.

• Copper

• It is an easily molded base metal that is often added to precious metals to improve their elasticity, flexibility, hardness, colour, and resistance to corrosion.

• Gold is one of the most common alloyed metals with copper

• Steel

• The major component of steel is iron, a metal that in its pure state is not much harder than copper.

• Stainless steel is 100 percent recyclable, easy to sterilize, and used in many applications.

• Culinary uses:- Kitchen sinks, Cutlery, Cookware.

• Surgical tools and medical equipment.

Q68. Answer: (b) 491

Shortcut Trick

The smallest number is LCM(16, 24, 30, 48) + Remainder.

LCM of 16, 24, 30, 48 => 240.

Required number => 240 + 11 = 251 (not in options).

Check next multiple: (240 × 2) + 11 = 480 + 11 = 491.

Therefore The correct answer is 491.

Alternate Method

Given: Divisors = 16, 24, 30, 48; Remainder = 11.

Formula Used: Number = k × LCM(divisors) + Remainder.

=> Prime factorization: 16 = 2^4, 24 = 2^3×3, 30 = 2×3×5, 48 = 2^4×3.

=> LCM = 2^4 × 3 × 5 = 16 × 15 = 240.

=> Required Number = (240 × k) + 11.

=> For k = 2, Number = 480 + 11 = 491.

Therefore The correct answer is 491.

Additional Information

LCM Method

Used to find the least common multiple. For a common remainder 'r', the number is LCM(x, y, z) + r.

HCF Method

Used to find the largest number that divides given numbers leaving a specific remainder.

Divisibility Rule of 3

If a number leaves remainder 11 when divided by 30, it must leave remainder 2 (11 mod 3) when divided by 3.

Q69. Answer: (b) 2

The correct answer is 2.

Key Points

• France was one of the four European teams that participated in the inaugural World Cup in 1930.

• It has appeared in 15 FIFA World Cups, tied for the sixth time. Total FIFA cup titles won by France are two in Number.

• The French team won its first World Cup title in the year 1998.

• The tournament was played in France and it defeated Brazil in the finals.

• In 2018, France won the World Cup for the second time, by defeating Croatia in the finals.

• In 2006, France finished as runners-up and it has also finished in third place in 1958 and 1986, and in fourth place once, in 1982.

Q70. Answer: (c) 100°

The logic follows here is:

The angle = (30 H - 11 M / 2)

H = 7 and M = 20

Angle = 30 × 7 - (11 × 20) / 2

Angle = 210 - (11 × 20) / 2

Angle = 210 - (220) / 2

Angle = 210 - 110

Angle = 100°

Hence, the correct answer is "100°".

Q71. Answer: (a) 50 paise

Shortcut Trick

The difference between Compound Interest (compounded half-yearly) and Simple Interest for 1 year is given by the formula: Difference = P × (r / 200)².

Given: Principal (P) = Rs. 200, Rate (r) = 10%.

Difference = 200 × (10 / 200)²

=> 200 × (1 / 20)² = 200 ÷ 400 = Rs. 0.5

=> Rs. 0.5 = 0.5 × 100 = 50 paise.

Therefore The correct answer is 50 paise.

Alternate Method

Given: Principal (P) = Rs. 200, Rate (R) = 10% p.a., Time (T) = 1 year.

Formula Used: SI = (P × R × T) / 100 | CI = P[(1 + r/n)^(nt) − 1]

Step-by-step Calculation:

=> Scheme 1 (Simple Interest): SI = (200 × 10 × 1) / 100 = Rs. 20

=> Scheme 2 (Compound Interest): Compounded half-yearly, so Rate = 10% / 2 = 5% per half-year; Number of periods = 1 × 2 = 2

=> Amount (A) = 200 × (1 + 5 / 100)²

=> A = 200 × (1.05) × (1.05) = 200 × 1.1025 = Rs. 220.5

=> CI earned = 220.5 − 200 = Rs. 20.5

=> Difference in Interest = CI − SI = 20.5 − 20 = Rs. 0.5

=> Rs. 0.5 = 0.5 × 100 = 50 paise.

Therefore The correct answer is 50 paise.

Additional Information

Effective Annual Rate (EAR)

For half-yearly compounding, the effective rate is [(1 + r / 200)² − 1] × 100%. In this case, it is 10.25%.

CI − SI Difference Formulas

For 2 years (annual): $P(r / 100)^2$. For 3 years (annual): $P(r / 100)^2 \times (3 + r / 100)$.

Compounding Impact

As the compounding frequency increases (quarterly, monthly, etc.), the interest earned on the same principal and rate increases.

Q72. Answer: (a) Neither conclusion 1 nor 2 follows.

The logic follows here is:

The manager might have insulted Sachin not because of his dislike but on account of certain negligence or mistake on his part. So, we cannot deduce anything definite about it.

So, Conclusion I does not follow.

Also, nothing about Sachin's popularity around his colleagues can be deduced from the statement.

So, Conclusion II does not follow.

Hence, the correct answer is "Neither conclusion 1 nor 2 follows".

Additional Information

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

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

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

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

Q73. Answer: (b) Arthshastra

The correct answer is Arthshastra.

Key Points

• There are two types of sources of Mauryan History i.e Literary and another one is Archaeological.

• The literary sources comprised Kautilya’s Arthasastra, Visakha Datta’s Mudra Rakshasa, Megasthenese’s Indica, Buddhist literature, and Puranas.

• Arthasastra-

• It is a book written by Kautilya on polity and governance.

• He was the Prime Minister of Chandragupta Maurya, founder of the Mauryan dynasty.

• It tells the economic and political conditions of the Mauryan period.

• Indica-

• Indica is an account of Mauryan India by Megasthenese who was the ambassador of Seleucus Nikator in the court of Chandragupta Maurya.

• It illustrates the administration in the Mauryan Empire, the seven-caste system, and the absence of slavery in India.

Q74. Answer: (c) 15 : 16

The correct answer is 15:16.

Key Points

Given:- Equal masses of ethane and hydrogen.

Let's take mass to be x.

Molar mass of ethane = $C_2H_6 = 30$

The molar mass of hydrogen = $H_2 = 2$

Moles= X/30

Moles H_2 = X/2

$P_T=P_{(Eth)}+ P_{(H2)}$

So, Moles Fraction H_2= (X/2)/(X/30+X/2)

= (1/2)/(16/30)

= 30/32 = 15/16

Q75. Answer: (a) 5

Shortcut Trick

For a triangle with centroid (nucleus) at the origin (0, 0), the sum of the coordinates of the vertices must be zero.

$\alpha = 0 - (-3 + 0) = 3$

β = 0 − (1 − 2) = 1

Required value = 2α − β = 2(3) − 1 = 5

Therefore The correct answer is 5.

Alternate Method

Given: Vertices A(−3, 1), B(0, −2), and C(α, β). The centroid (nucleus) G is (0, 0).

Formula Used: Centroid G(x, y) = ((x1 + x2 + x3)/3, (y1 + y2 + y3)/3)

=> x-coordinate of centroid: 0 = (−3 + 0 + α) / 3

=> 0 = −3 + α

=> α = 3

=> y-coordinate of centroid: 0 = (1 + (−2) + β) / 3

=> 0 = 1 − 2 + β

=> β = 1

=> Value of (2α − β) = 2(3) − 1

=> 6 − 1 = 5

Therefore The correct answer is 5.

Additional Information

Centroid Definition

The centroid is the point of concurrency of the three medians of a triangle and is often referred to as the geometric center or nucleus.

Section Ratio

The centroid divides each median in the ratio 2 : 1, measuring from the vertex to the midpoint of the opposite side.

Area Property

The centroid divides the triangle into three smaller triangles (AGB, BGC, and CGA) of equal area.

Q76. Answer: (d) 10 kg

The correct answer is 10 kg.

As we know,

W = mg

Here W = weight

m = the mass of the object

g = gravitational acceleration

Given-

Weight of the object= 98N

g = 9.8 ms-2

Putting these values in the formula mentioned above, we get-

98 N = m× 9.8 ms-2 (m= W/G)

m = 98/9.8 = 10kg

Q77. Answer: (d) [figure]

The logic follows here is :

In the water image, upper portion is rotated 180° and vice versa.

Hence, the correct answer is "Option 4".

Additional Information

• The reflection of an object into the water is its water image.

• It appears by inverting an object vertically i.e. upside down.

• The water image of the figure looks like the mirror image of the figure in case the mirror is horizontally at the bottom of the figure.

Q78. Answer: (c) 1

Shortcut Trick

Test integer factors of the constant 2: ±1, ±2.

At x = −1, f(−1) = $(-1)^3 - (-1)^2 + 2 = -1 - 1 + 2 = 0$, so one real zero is found.

Derivative $f'(x) = 3x^2 - 2x = 0$ gives turning points at x = 0 and x = 2/3.

The local maximum is f(0) = 2 and the local minimum is f(2/3) ≈ 1.85.

Since both turning points are above the x-axis, the curve never crosses the axis again for $x > -1$.

Therefore The correct answer is 1.

Alternate Method

Given: Polynomial $P(x) = x^3 - x^2 + 2$

Formula Used: Factor Theorem and Discriminant ($D = b^2 - 4ac$)

=> By trial, $x = -1$ is a root since $P(-1) = -1 - 1 + 2 = 0$.

=> Factorize: $x^3 - x^2 + 2 = (x + 1)(x^2 - 2x + 2)$.

=> Check the quadratic factor $x^2 - 2x + 2$ for real zeros.

=> For $x^2 - 2x + 2$, $a = 1$, $b = -2$, $c = 2$.

=> Discriminant $D = b^2 - 4ac = (-2)^2 - 4(1)(2) = 4 - 8 = -4$.

=> Since $D < 0$, the quadratic part has no real roots.

=> Thus, the only real zero is $x = -1$.

Therefore The correct answer is 1.

Additional Information

Fundamental Theorem of Algebra

Every non-zero, single-variable polynomial of degree n has exactly n complex roots, which may include repeated roots.

Descartes' Rule of Signs

The number of positive real roots is equal to the number of sign changes in f(x) or less than that by an even number.

Nature of Quadratic Roots

For $ax^2 + bx + c = 0$, roots are real and distinct if $D > 0$, real and equal if $D = 0$, and complex if $D < 0$.

Cubic Sum and Product of Roots

For $ax^3 + bx^2 + cx + d = 0$, the sum of roots is $-b/a$ and the product of roots is $-d/a$.

Q79. Answer: (d) Only assumption 2 is implicit.

The logic follows here is:

It cannot be assumed from the given statements that you will lose 10 kg in six-session because nowhere it is talking about 6 sessions. We have not to assume anything on our own.

Hence, Assumption 1 is not implicit.

From the statements, it can be assumed that the institute deals with weight loss programs because in their Ad they have mentioned weight-loss sessions.

Hence, Assumptions 2 will be implicit.

Hence, the correct answer is "Only assumption 2 is implicit".

Additional Information

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

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

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

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

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

Q80. Answer: (c) Madhya Pradesh

The correct answer is Madhya Pradesh.

• Mount dhoopgarh is the highest peak of the Satpura range, which is located in Madhya Pradesh.

Key Points

• In central India, Satpura hills are located in the states of Maharashtra, Gujarat, Chattisgarh, and Madhya Pradesh the hill expands.

• In Vindhya Range in the north, the Satpura range runs parallel to it.

• Vindhya Range divides North India from South India.

• In Amarkantak hills in the Satpura ranges, the River Narmada rises.

• From the eastern and central part of the Satpura, the Tapti River is originated.

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• The Chota Nagpur plateau is met by Satpura Ranges on the eastern side.
• In the north, the Satpura hills are flanked by the Narmada River.

Q81. Answer: (d) 23

The correct answer is 23.

Key Points

• Dobereiner's law of triads:-
• It states that the atomic mass of the middle element of a triad is the arithmetic mean of the atomic masses of the other two elements.
• Given:-
• The atomic weight of A=7
• The atomic weight of C=39
• The atomic weight of B = (Atomic Weight of A +Atomic Weight of C)/2
• The atomic weight of B = (7+39)/2 = 23

Q82. Answer: (c) 36.960 kg

Shortcut Trick

Volume of hollow cylinder = $\pi \times h \times (R^2 - r^2)$

Outer radius (R) = 8 cm, Inner radius (r) = 6 cm, Height (h) = 42 cm

Volume = $(22/7) \times 42 \times (8^2 - 6^2) = 132 \times (64 - 36) = 132 \times 28 = 3696\ cm^3$

Weight = Volume × Density = 3696 × 10 = 36960 g = 36.960 kg

Therefore The correct answer is 36.960 kg.

Alternate Method

Given:

Height (h) = 42 cm

Outer Diameter = 16 cm => Outer Radius (R) = 16/2 = 8 cm

Inner Diameter = 12 cm => Inner Radius (r) = 12/2 = 6 cm

Density = $10\ g/cm^3$

Formula Used:

Volume of material = $\pi \times (R^2 - r^2) \times h$

Weight = Volume × Density

Calculations:

=> Volume = $(22/7) \times (8^2 - 6^2) \times 42$

=> Volume = $(22/7) \times (64 - 36) \times 42$

=> Volume = $22 \times 28 \times 6 = 3696\ cm^3$

=> Weight in grams = 3696 × 10 = 36960 g

=> Weight in kg = 36960 / 1000 = 36.960 kg

Therefore The correct answer is 36.960 kg.

Additional Information

Total Surface Area of Hollow Cylinder

TSA = $2\pi R\ h + 2\pi r\ h + 2\pi(R^2 - r^2)$, where R is outer radius and r is inner radius.

Curved Surface Area

External CSA = $2\pi Rh$ and Internal CSA = $2\pi rh$.

Weight Conversion

1 kg = 1000 g. Always check the final unit required (kg vs g) in mensuration problems.

Q83. Answer: (c) 2

The logic follows here is:

In the second figure, 3 lines are added to the first figure.

Hence, the correct answer is "Option 3".

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Q84. Answer: (b) Black

The correct answer is Black.

• The black coating on silver is an example of corrosion.

Key Points

• When a metal deteriorates due to its reaction with air present in the atmosphere, it can be said as corrosion.

• The process of corrosion takes place due to oxidation.

• Iron is rusted and silver is tarnished in the air when they are left free in the air.

• The metals need to be protected from corrosion.

• Rust is an iron oxide, a usually reddish-brown oxide formed by the reaction of iron and oxygen in the catalytic presence of water or air moisture.

• The beautiful blue-green color (patina) on copper after oxidation is the visible result of the metals losing electrons to the air.

Additional Information

• Many methods are developed via industrial research to protect a metal from corrosion.

• Except for gold and platinum, the corrosion of most of the metals is spontaneous.

• Anti-corrosive chemicals are used to prevent metal from corrosion.

• Iron can also be coated with tin to protect it from corrosion.

• Tin is less reactive and it will protect the iron.

• Cathodic protection, hot deep galvanization, alloyed steel, and barrier coatings are some other methods to protect a metal from corrosion.

Q85. Answer: (d) Complex form of origin

The correct answer is a Complex form of origin.

• Differentiation in organisms leads to a complex form of origin.

Key Points

• The changing of the form of the cell takes place in cellular differentiation.

• In a more specialized type, the changes of cells take place.

• At the time of multicellular organism, differentiation in organisms occurs.

• Daughters cells are created and fully differentiated by the adult stem cells through differentiation.

• Antigen exposures are also one of the reasons for happening of differentiation in organisms.

Additional Information

• Terminal differentiation is a form of differentiation.

• The cell division is done by precursor cell during terminal differentiation.

• Differentiation continues after terminal differentiation if the changes are required.

• The integration of the cellular process is called dedifferentiation.

Q86. Answer: (a) 24

Shortcut Trick

Let total work = 144 units (LCM of 36 and 48).

Efficiency of (A + B) = 144 ÷ 36 = 4 units/day.

Efficiency of A = 144 ÷ 48 = 3 units/day => Efficiency of B = 4 − 3 = 1 unit/day.

B worked for all 54 days: Work by B = 54 × 1 = 54 units.

Remaining work done by A = 144 − 54 = 90 units => A worked for 90 ÷ 3 = 30 days.

Days before completion A left = 54 − 30 = 24 days.

Therefore The correct answer is 24 days.

Alternate Method

Given: Time (A+B) = 36 days, Time (A) = 48 days, Actual time taken = 54 days.

Person	Days	Total Work	Efficiency
A + B	36	144	4
A	48	3	

Calculations:

=> Efficiency of B = Efficiency of (A + B) − Efficiency of A

=> Efficiency of B = 4 − 3 = 1 unit/day

=> Since B worked for the entire duration of 54 days:

=> Work done by B = 54 × 1 = 54 units

=> Remaining work done by A = 144 − 54 = 90 units

=> Time for which A worked = 90 ÷ 3 = 30 days

=> Days before completion A left = Total days − Days A worked

=> Gap = 54 − 30 = 24 days

Therefore The correct answer is 24 days.

Additional Information

Total Work and Efficiency

Total Work = Efficiency × Time. Using the LCM method simplifies fractional calculations into whole numbers.

Leaving Before Completion

If a person leaves 'n' days before completion, the total work can be viewed as (Efficiency × Total Days) − (Efficiency of leaver × n).

Pipes and Cisterns

This logic is identical to inlet pipes closing before a tank is full, where the filling rate is efficiency.

Q87. Answer: (d) 7 or 8

The correct answer is 7 or 8.

Key Points

• Carbon has the ability to form bonds with other carbon atoms which results in the formation of larger molecules.

• This unique property of Carbon to form chains of atoms of a particular element is known as Catenation.

• These carbon atoms may be single-bonded or contain double or triple bonds.

• Carbon atoms that are linked by single bonds are known as saturated compounds.

• On the other hand, Carbon atoms that are linked by double or triple bonds are unsaturated compounds.

• Silicon forms a compound with hydrogen which has chains of up to seven or eight atoms. But, these compounds are highly reactive.

Q88. Answer: (b) Rs. 3400

To determine the Cost Price, we use the relationship between Selling Price, Profit Percentage, and Cost Price. By treating the Cost Price as 100%, the Selling Price becomes the sum of the Cost Price and the Profit percentage. Dividing the given Selling Price by this total percentage yields the value of 1%, which is then multiplied by 100 to find the full Cost Price.

Shortcut Trick

Profit% = 30%, so Selling Price = 130% of Cost Price.

Given 130% = Rs. 4420.

1% = 4420 ÷ 130 = 34.

100% (Cost Price) = 34 × 100 = Rs. 3400.

Therefore The correct answer is Rs. 3400.

Alternate Method

Given: Selling Price (SP) = Rs. 4420, Profit% = 30%.

Formula: CP = SP × (100 ÷ (100 + Profit%))

=> CP = 4420 × (100 ÷ (100 + 30))

=> CP = 4420 × (100 ÷ 130)

=> CP = 4420 × (10 ÷ 13)

=> CP = 340 × 10

=> CP = 3400.

Therefore The correct answer is Rs. 3400.

Additional Information

Cost Price and Profit

The Cost Price (CP) is the price at which an item is purchased. Profit occurs when SP > CP.

Profit Percentage Formula

Profit% = (Profit ÷ CP) × 100. It is always calculated on the Cost Price unless stated otherwise.

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Q89. Answer: (c) 1

The correct answer is 1.

Key Points

• Atmospheric pressure is defined as the pressure within the Earth's atmosphere.

• An atmosphere (atm) is a unit of measurement which is equal to the average air pressure at sea level at a temperature of 15 degrees Celsius.

• The atm unit is roughly equal to the mean sea-level atmospheric pressure on Earth i.e. Earth's atmospheric pressure at sea level is approximately 1 atm.

Q90. Answer: (b) TZI

The pattern follows here is:

Hence, the correct answer is "TZI".

Q91. Answer: (b) 1 : 3

Concept:

Momentum

• Momentum is defined as the product of the mass and velocity of the body.

• It is a vector quantity directed toward velocity.

• It is given as

$p = mv$ -- (1)

m is mass, v is the velocity, p is momentum

Kinetic Energy

• The energy of a body in motion due to its state of motion is called kinetic energy.

• It is given as

$K = 1/2mv^2$ --- (2)

K is kinetic energy, m is mass, v is speed.

Relationship between Momentum and Kinetic Energy

If we combine equation (1) and (2) we will get the relationship between momentum and kinetic energy as

$K = (p^2)/2m$ -- (3)

Calculation:

Given the mass of body 1 $m1 = m$

The momentum of body 1 is p1

Mass of body 2 $m2 = 9m$

The momentum of body 2 is p2

So, the Kinetic energy of the body 1 according to the above conditions.

$K1 = (p1^2)/2m1 = (p1^2)/2m$ -- (3)

Kinetic energy of body 2

$K2 = (p2^2)/2m2 = (p2^2)/(2\times 9m)$ -- (4)

Since both kinetic energies are equal. We can equate equation (3) and (4)

$(p1^2)/2m = (p2^2)/(2\times 9m)$

$\Rightarrow (p1^2)/(p2^2) = 2m/(2\times 9m)$

$\Rightarrow p1/p2 = \sqrt{m}/9m$

$\Rightarrow p1/p2 = 1/3$

So, the ratio of momentum is 1:3.

The correct option is 1:3

Q92. Answer: (a) -16

The logic follows here is:

Original Digits	Replaced by
0	a
1	b
2	c

3	d
4	e
5	f
6	g
7	h
8	i
9	j

Given equation ((h × i) ÷ e) + ((a × d) - f) × g
replacing the given equation using the table we get:
((7 × 8) ÷ 4) + ((0 × 3) - 5) × 6
= (56 ÷ 4) + ((0 × 3) - 5) × 6
= (56 ÷ 4) + (0 - 5) × 6
= 14 + (-5) × 6
= 14 - 30
= -16
Hence, the correct answer is "-16".

Q93. Answer: (a) Loudness

The correct answer is Loudness.
• The amplitude of the sound wave determines its loudness.
Key Points
• A louder sound is represented by a larger amplitude.
• A softer sound indicates a smaller amplitude.
• Due to the larger amplitude, there is a more energetic vibration.
• The sensitivity of the ear also determines the loudness of a sound.
• Towards some frequencies, the ear is more sensitive.
• The amplitude and frequency are the two factors, upon which the volume of sound received by us depends.

Q94. Answer: (c) Amitabh Bachchan

The correct answer is Amitabh Bachchan.
• In the 2017 film ‘Pink’, Amitabh Bacchan played the lead actor role.
Key Points
• It is a social thriller film.
• The movie is in the Hindi language.
• Aniruddha Roy Chowdhury has directed this film.
• Rashmi Sharma telefilms, Sheel Kumar and Shujit Sirkar have produced this film.
• Amitabh Bacchan, Tapasi Pannu, and others worked in the film.
• U/A certification is granted to the film by CBEC (Central Board of film certification).
Additional Information
• Shantanu Moitra and Anupam Roy have given music in this film.
• 23 crore was the budget of the film.
• The pink movie is related to the feminist matter.

Q95. Answer: (d) Politics

The correct answer is Politics.
• L K Advani is popular for his contribution in politics.
• His full name is Lal Krishna Advani.
Key Points
• The 7th deputy Prime minister of India was L K Advani.
• In BJP, he was a senior leader.

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• He also co-founded BJP with others.
• He was also minister of home affairs in BJP from 1998-2004.
• In 2009 general election, he served as prime ministerial candidate in national democratic alliance.
• In RSS (Rashtriya Swayamsevak sangh), he was a volunteer.
• The birth of L K Advani was in Karachi.

Q96. Answer: (c) 2015-16

Given:

The table showing the passing percentage of four schools over four years.

Calculation:

From the table, the year in which all the schools have scored more than 60% is 2015-16.

Q97. Answer: (a) D

The logic follows here is:

The given figure is rotated by 90 degrees in a clock-wise direction.

Hence, the correct answer is "Option 1".

Q98. Answer: (d) RISECREEK

The correct answer is RISECREEK.

Key Points

• Computer scientists from the Indian Institute of Technology (IIT) Madras have built the first microprocessor with silk industry standards under project Shakti.
• The initial batch of 300 chips is named RISKCREEK.
• The dependency on imported microchips will be reduced by shakti.
• The shakti will also minimize the cyber frauds.
• At the semi-conductor laboratory of ISRO, the microchip which is present in the Shakti is fabricated.
• The communication and defence sector will be especially benefitted by this.
• The different types of hardware will be needed by different devices.
• The initial batch of 300 chips which was fabricated, named RISKCREEK.

Q99. Answer: (a) 67

The logic follows here is:

The given numbers are the consecutive prime numbers.

53 is a prime number.

Next prime number is 59.

Next prime number is 61.

Next prime number is 67.

Hence, the correct answer is "67".

Alternate Method

59 = 53 + 6

67 = 61 + 6

Additional Information

• The priority will always be the prime number in the exams.
• There is some standard rule which needs to be followed while selecting the priority.
• priority lists to be followed in exams according to their preferences are:

1. Prime number.
2. Square.
3. Cube.
4. Multiplication and divisions
5. Addition and subtraction.

• A prime number can be divided, without a remainder, only by itself and by 1.
• Some facts about the Prime numbers:

1. The only even prime number is 2. All other even numbers can be divided by 2.

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2. If the sum of a number's digits is a multiple of 3, that number can be divided by 3.
3. No prime number greater than 5 ends in a 5. Any number greater than 5 that ends in a 5 can be divided by 5.
4. Zero and 1 are not considered prime numbers.
5. Except for 0 and 1, a number is either a prime number or a composite number. A composite number is defined as any number, greater than 1, that is not prime.

Q100. Answer: (d) [figure]

The logic follows here is:

The outer shape replaces its position with the most inner shape and vice-versa and the shaded area of inner shape changes to stripes lines.

Hence, the correct answer is "Option 4".

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