2024-25
ENGLISH MEDIUM
RRB-RPF/RPSF CONSTABLE
PRACTICE BOOK

Youth Competition Times

RRB-RPF/RPSF

Railway Protection Force/Railway Protection Special Force

TCS PATTERN

CONSTABLE

MALE & FEMALE

PRACTICE BOOK

CBT
COMPUTER BASED TEST

SUBJECT	Marks	Questions	Time
ARITHMETIC	35	35	90 Minutes
GENERAL INTELLIGENCE & REASONING	35	35	
GENERAL AWARENESS	50	50	
	120	120	

ANSWERS WITH DETAILED ANALYTICAL EXPLANATION

Content

Section	Marks	Questions	Exam Duration
General Awareness	50	50	90 Minutes
Arithmetic	35	35	
General Intelligence and Reasoning	35	35	
	120	120	

PRACTICE SET - 1

1. Which of the following sites of Indus Valley Civilization is located in Punjab (India)?
(a) Kot Diji (b) Banawali
(c) Balu (d) Ropar

2. Emperor Ashoka sent the apostles to remote places to propagate the ideals of Buddhism so that people could inspire their lives through the teachings of Lord Buddha. There evangelists also included his son ____ and daughter ___?
(a) Manoj and Sanjana
(b) Mahesh and Sangita
(c) Mahendra and Sanghamitra
(d) Mandeep and Suhasana

3. What is the correct chronological order of the rulers given below?
(1) Taimur (2) Mahmud Ghazni
(3) Genghis Khan (4) Muhammad Ghori
(a) 2, 4, 1, 3 (b) 2, 3, 3, 1
(c) 2, 4, 3, 1 (d) 4, 2, 3, 1

4. The Din-i-Ilahi (lit 'Religion of God') was synergetic religion propounded by:
(a) Akbar (b) Aurangzeb
(c) Jahangir (d) Babar

5. Queen of England was crowned as Empress of India in ____.
(a) 1787 (b) 1876
(c) 1877 (d) 1867

6. Who was the first Indian-origin ruler to accept the system of subsidiary alliance ?
(a) Nizam of Hyderabad
(b) Dilip Singh of Punjab
(c) Gaikwad of Baroda
(d) Scindhia of Gwalior

7. When did Sir William Jones found Asiatic Society?
(a) 1854 (b) 1782
(c) 1793 (d) 1784

8. The Delhi Durbar ..... marked the succession of King George V and in this Durbar, the King declared that Capital of India will be transferred from Calcutta to Delhi.
(a) 1903 (b) 1910
(c) 1911 (d) 1877

9. Who is considered as the person responsible for the political integration of India by unifying 562 princely states in the country?
(a) Subhas Chandra Bose
(b) Jawaharlal Nehru
(c) Vallabhbhai Jhaverbhai Patel
(d) Lal Bahadur Shastri

10. Which of the following articles of the Constitution of India lays down that the State shall take steps to organise village panchayats?
(a) Article 40 (b) Article 41
(c) Article 43 (d) Article 42

11. Who among the following was the Speaker of the Second Lok Sabha?
(a) Bali Ram Bhagat
(b) M. Ananthasayanam Ayyangar
(c) Balram Jakhar
(d) K.S. Hegde

12. Who among the following has the power to grant pardons under Article 161 of the Constitution of India?
(a) Prime Minister (b) Chief Justice of India
(c) President (d) Governor

13. Which Amendment of the Indian Constitution added Part IX to the Indian Constitution?
(a) 69 (b) 75 (c) 67 (d) 73

14. Which was the first Municipal Corporation of India?
(a) Amritsar Municipal Corporation
(b) Delhi Municipal Corporation
(c) Calcutta Municipal Corporation
(d) Madras Municipal Corporation

15. Which of the following is related to the 124th Constitutional Amendment Bill?
(a) National Commission for Backward Class
(b) 10% reservation to economically weaker sections in the general category
(c) GST Bill
(d) Right to free and compulsory education till the age of fourteen

16. The Constitution divided the powers between the Centre and the States in the terms of _____lists.
(a) 4 (b)3 (c) 2 (d) 5

17. The different patterns formed by different group of stars are called:
(a) Planets (b) Stars
(c) Celestial bodies (d) Constellations

18. Who discovered the planet Uranus?
(a) Galileo Galilee
(b) Christian Huygens
(c) Sir William Herschel
(d) Nicholas Copernicus

19. Which air mass is warm ?
(a) Continental Polar
(b) Continental Tropical
(c) Maritime Polar
(d) Continental Arctic

20. Select the pair that is NOT matched correctly (the desert to its location).
(a) Kalahari Desert – India
(b) Great Victoria Desert – Australia
(c) Patagonian Desert – Argentina
(d) Sahara Desert – African continent

21. To which country does the famous 'Zulu' tribe belong?
(a) Pakistan (b) South Africa
(c) India (d) China

22. The part of the northern plain of India comprising older alluvium is known as:
(a) Bhangar (b) Terai
(c) Khadar (d) Bhabhar

23. Where is Kandaleru Dam located?
(a) Goa (b) Maharashtra
(c) Kerala (d) Andhra Pradesh

24. National Highway Authority of India (NHAI) was set up in:
(a) 2014 (b) 1988
(c) 2002 (d) 1952

25. _____ in economics is a curve that when plotted on a graph shows all the combinations of two factors that produce a given output.
(a) Isoquant (b) Elasticity
(c) Long run (d) Duopoly

26. Which of the following is depicted on the Indian 200-rupee note?
(a) Red Fort (b) Ellora Caves
(c) Mangalyaan (d) Sanchi Stupa

27. In which year was Service Tax first imposed in India?
(a) 2002 (b) 1995
(c) 1998 (d) 1994

28. The Valmiki Ambedkar Awas Yojana is aimed at providing:
(a) Infrastructure for all the citizens
(b) Financial assistance to slum dwellers living below poverty line
(c) Foodgrains to slum dwellers living below poverty line
(d) Housing and toilet facilities to slum dwellers living below poverty line

29. Which year was the Central Rural Sanitation program started?
(a) 1986 (b) 2006
(c) 1996 (d) 2016

30. The Winter Olympic Games came into being in
(a) 1916 (b) 1912
(c) 1920 (d) 1924

31. Where is located the headquarter of Indian Council Agricultural Research?
(a) New Delhi (b) Bengaluru
(c) Dehradun (d) Mumbai

32. Where is the Golden temple of Dambulla located?
(a) Amritsar (b) Sri Lanka
(c) Indonesia (d) Malaysia

33. Shogatsu is a new year celebration in which of the following country?
(a) France (b) Japan
(c) New Zealand (d) Brazil

34. The hornbill festival is a famous tribal festival. It is celebrated in which of the following North-Eastern states of India?
(a) Arunanchal Pradesh (b) Assam
(c) Nagaland (d) Mizoram

35. Parichakali is a popular folk dance of _____
(a) Lakshadweep (b) Tamil Nadu
(c) Andhra Pradesh (d) Karnataka

36. The unit of resistance is …… .
(a) Ampere (b) Coulomb
(c) Ohm (d) Volt

37. A 40 kg girl quickly climbs up the stairs to 5m height in 4 sec, what will be the power developed by her?
(a) 500W (b) 200W
(c) 2000W (d) 100W

38. Which of the following equations represents the velocity – time relation?
(a) $s = ut + \frac{1}{2}at^2$ (b) $2as = v^2 - u^2$
(c) $v = u + at$ (d) $v = u - at$

39. Through which of the following mediums can sound NOT travel?
(a) Steel (b) Vacuum
(c) Air (d) Milk

40. A rainbow is observed due to refraction of the sunlight through rain drops. This implies that:
(a) Sunlight is monochromatic
(b) Sunlight is polychromatic
(c) refractive index of rain drop is 1
(d) rain drops are not spherical in shape

41. In which of the following states of the matter molecules have maximum attraction force?
(a) Fluid (b) Gas
(c) Plasma (d) Solid

42. The concept that all atoms of an element are equal was falsified by the discovery of ……?
(a) malformation (b) isotopes
(c) Radioactivity (d) Isobars

43. When sodium bicarbonate is placed on a strip of Ph paper, the color of the strip is .....
(a) turns green (b) does not change
(c) turns blue (d) becomes yellow

44. Who invented the periodic table?
(a) Dmitry Mendeleev (b) Louis Pasteur
(c) Marie Curie (d) Antoine lavoisier

45. What happens when methane burns?
(a) Carbon monoxide emits
(b) Carbon ash remains
(c) Carbonate is formed
(d) Carbon dioxide and water emit

46. The cultivation of high value crops such as vegetables, fruits and flowers is called_____.
(a) Sericulture (b) Pisciculture
(c) Apiculture (d) Horticulture

47. Which of the following is the basic unit of classification of living organisms?
(a) Genus (b) Order
(c) Species (d) Family

48. Human growth hormone is secreted by which gland?
(a) Posterior lobe of pituitary gland
(b) Anterior lobe of pituitary gland
(c) Thyroid gland
(d) Pancreas

49. The fungus Puccinia graminis causes:
(a) Red rot of sugarcane
(b) Ringworm in human
(c) Late blight of potato
(d) Black rust in wheat

50. Which of the following statements is correct with respect to Phloem?
(a) Phloem carries photosynthetic products from leaves to other plant parts.
(b) Sieve tubes in phloem are made up o dead cells.
(c) Phloem transport is uni-directional.
(d) Companion cells of phloem have perforated walls.

51. Which of the following numbers is NOT divisible by 9 ?
(a) 49104 (b) 77832
(c) 35253 (d) 45390

52. In a reunion of class XII, out of 45 students, 30 students participated in the function. If all present in the function shake hands with one other, find the total number of handshakes.
(a) 870 (b) 435
(c) 841 (d) 900

53. If 11-digit number 88p554085k6, k ≠ p, is divisible by 72, then what is the value of (3k + 2p)?
(a) 12 (b) 7
(c) 13 (d) 23

54. Which of the following fractions is the largest?
$\frac{7}{9}, \frac{6}{7}, \frac{22}{25}$ **and** $\frac{11}{13}$
(a) $\frac{11}{13}$ (b) $\frac{22}{25}$
(c) $\frac{7}{9}$ (d) $\frac{6}{7}$

55. $\frac{0.3}{1000}$ **equals to :**
(a) 3×10^{-4} (b) 3×10^{-6}
(c) 3×10^{5} (d) 3×10^{-5}

56. The value of $\sqrt{142884}$ **is**
(a) 368 (b) 388
(c) 378 (d) 358

57. If $\left(\sqrt{5}+1\right)^2 = a + b\sqrt{5}$**, then find a, b where (a>b)**
(a) 4, 2 (b) 6, 2
(c) 6, 4 (d) 8, 6

58. Find the value of x
$1\frac{1}{5} - 3\frac{2}{4} \div 1\frac{3}{4} \div \left(x + 3\frac{1}{8}\right) \div 1\frac{1}{7} = 1$
(a) $x = 3\frac{5}{8}$ (b) $x = 3\frac{3}{8}$
(c) $x = 5\frac{5}{8}$ (d) $x = 7\frac{5}{8}$

59. The population of a village increases at the rate of 10% per annum. If its population 2 years ago was 10,000, the present population is :
(a) 12,100 (b) 12,400
(c) 12,000 (d) 11,000

60. In an election, candidate A got 75% of total valid votes. If 15% of total votes were declared invalid and the total number of votes is 560000, then the number of valid votes polled in favour of A is:
(a) 355000 (b) 357000
(c) 356000 (d) 358000

61. Alok saves ₹ 1200 after spending 85% of his salary. What is his monthly salary?
(a) ₹ 8,000 (b) ₹ 8,500
(c) ₹ 10,000 (d) ₹ 12,000

62. If the cost price of an item is ₹4,500 and its selling price is ₹3,500 then the loss percentage is:
(a) $44\frac{2}{9}\%$ (b) $55\frac{2}{9}\%$
(c) $22\frac{2}{9}\%$ (d) $33\frac{2}{9}\%$

63. A trader buys 60 bags of grain at the rate of ₹400 each. If he sells 18 bags at 8% profit. To gets a total profit of 16.4% on 60 bags. On which rate he should sell remaining bags?
(a) ₹ 400 (b) ₹ 480
(c) ₹ 540 (d) ₹ 520

64. The price of an article is increased by 20% and then two successive discounts of 5% each are allowed. The selling price of the article is ..... above its cost price.
(a) 6.9% (b) 7.8%
(c) 9.2% (d) 8.3%

65. An amount of ₹ 1,470 is shared between Anant and Mohan in the ratio 3:4. What is the amount received by Mohan?
(a) ₹ 1,050 (b) ₹ 630
(c) ₹ 1,650 (d) ₹ 840

66. A started a business with a capital of ₹ 50,000. After 3 months, B jointed him with a certain amount of capital. At the end of a year of A's starting the business, the profit was shared in the ratio 3 : 2. How much (in ₹) did B invest ?
(a) 3,60,000 (b) 3,20,000
(c) 4,00,000 (d) 4,20,000

67. How much water should be added to 90 ml of a 38% sugar solution so that it becomes a 17.1% sugar solution?
(a) 81 ml (b) 95 ml
(c) 110 ml (d) 100 ml

68. Quality A and B, rice costing Rs. 35 per kg and Rs. 65 per kg respectively are mixed. The new average cost of the mixture obtained is Rs. 50 per kg. the ratio of the quantity of A and B in the mixture will be:
(a) 1:2 (b) 1:3
(c) 1:1 (d) 1:5

69. Find the simple interest on ₹ 48750 at 16% per annum for 73 days of a non-leap year.
(a) ₹ 1560 (b) ₹ 1500
(c) ₹ 1600 (d) ₹ 1860

70. **Manoj invested ₹15000 in a fixed deposit scheme for 3 years, at 5% per annum compounded annually. What amount will Manoj get on maturity of fixed deposit.**
(a) ₹13,764, .37 (b) ₹17,463.37
(c) ₹17,643.37 (d) ₹17,364.37

71. **Consider a sequence of seven consecutive numbers. If the average of the first five numbers is 'z', then find the average of the last three numbers.**
(a) z + 3 (b) z + 5 (c) z + 1 (d) z + 7

72. **The ratio of the speeds of a bus and a car is 7:11. If the car covers a distance of 396 km in 6 hours, what is the speed of the bus in km/h?**
(a) 42 (b) 45.5 (c) 38.5 (d) 35

73. **A 725 m long train passes through a 235 m long tunnel in 48 sec. Find the speed of the train.**
(a) 82 km/h (b) 72 km/h (c) 54/h (d) 66/h

74. **A man is standing on a 70 metre long platform a train croses the platform in 5.5 seconds but it crosses that man in 2 seconds. What is the length of the train?**
(a) 80 metre (b) 45 metre
(c) 60 metre (d) 40 metre

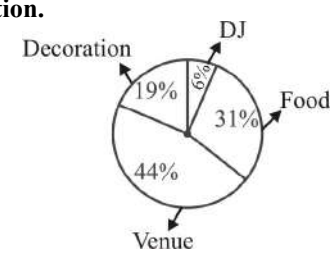
75. **A triangle has sides of length 5 cm, 7 cm and 10 cm. Find the area of the triangle (in cm^2).**
(a) 25 (b) $2\sqrt{66}$ (c) $7\sqrt{10}$ (d) 350

76. **A field is in the shape of a rhombus whose side is 122 m. The length of one of its diagonal's is 240 m. What is the area (in m^2) of the field?**
(a) 1320 (b) 3080 (c) 5280 (d) 1760

77. **The numerical value of the area of a square is equal to half of the numerical value of each of its diagonals. What is the numerical value of diagonal?**
(a) 1 (b) $\sqrt{2}$ (c) 2 (d) $\frac{\sqrt{2}}{2}$

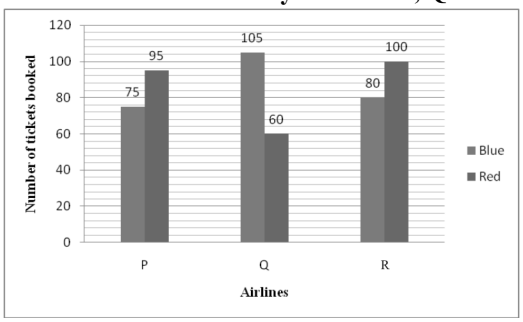
78. **How many cubes of side 3 cm can be formed by melting a cuboid of length 9 cm, breadth 6 cm and height 6 cm?**
(a) 14 (b) 12 (c) 13 (d) 11

79. **The following pie chart shows the expenditure distribution of a party. The blue part represents decoration expense, green part represents DJ expense, red part represents the food expenses and yellow part represents venue expenses.**
Study the pie chart and answer the following question.



How much was spent on decoration and DJ together if the total expenditure was ₹32,700?
(a) ₹7359 (b) ₹8175 (c) ₹8347 (d) ₹7725

80. **question that follows.**
The bar-depicts the number of tickers booked for Delhi and Mumbai by Airlines P, Q and R.



The total number of tickets booked for Mumbai by Airlines Q and R was what per cent more than the number of tickets booked for Delhi by Airline R ?
(a) 150% (b) 100% (c) 200% (d) 50%

81. **What is the sum of the first 25 odd numbers?**
(a) 150 (b) 625 (c) 250 (d) 144

82. **John, Sarah, Tom and Joane bought 3 pizzas of the same size in all. John eat 2/4 of a pizza. Sarah, Tom and Joane eat 3/4 of a pizza each. How much pizza was left?**
(a) $\frac{1}{4}$ of a pizza (b) $\frac{1}{2}$ of a pizza
(c)1 pizza (d) $\frac{3}{4}$ of a pizza

83. **A grasshopper of 63 grams can be eaten by three ants separately in 3, 4 and 6 days respectively if they eat the grasshopper together, find their share (in gram) till they finish it.**
(a) 28, 21, 14 (b) 30, 21, 12
(c) 31, 20, 12 (d) 31, 21, 15

84. **Find the sum of the face value and place value of 6 in the number 206743?**
(a) 6749 (b) 12743
(c) 6006 (d) 12

85. **A root of $x^2 - 12x + 2k = 0$ is x = 4. The other root will be -**
(a) x = 6 (b) x = 8
(c) x = –4 (d) x = –8

86. **Select the option that is related to the third term in the same way as the second term is related to the first term.**
Pediatrics : Children : : Neurology : ?
(a) Veins (b) Eyes (c) Brain (d) Heart

87. **HJP is related to 'KMS' in the same way as 'CDA' is related to _____**
(a) EFC (b) FHE (c) GHE (d) FGD

88. **In a certain code language, MARKS is written QEVOW and CLOSE is written as GPSWI. How will DRIVE be written in the same language?**
(a)HVMZK (b) HVMAJ
(c)GVNZI (d) HVMZI

89. **In a certain code language, 'CREAM' is written as 'FUVEQ' and 'STOVE' is written as 'VWLZI'. How will 'PITCH' be written in that language?**

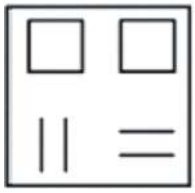
(a) SLXGL (b) SLGGL
(c) TGMKF (d) TMGFK

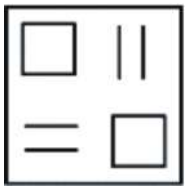
90. **Four natural resources are listed, out of which three are alike in some manner and one is different. Select the odd one.**

(a) Solar (b) Coal
(c) Wind (d) Water

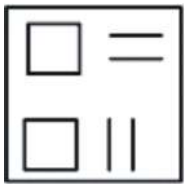
91. **Identify odd one out of the given figures.**

(a) (b)





(c) (d)



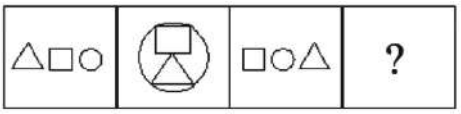
92. **Select the number from among the given options that can replace the question mark (?) in the following series.**

32, 57, 93, 142, 206, ?

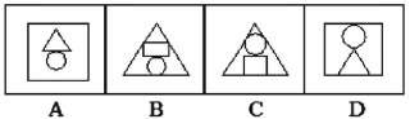
(a) 216 (b) 287
(c) 26 (d) 213

93. **Select that answer figure which will come in the place of '?' in question figure series**

Question figure:

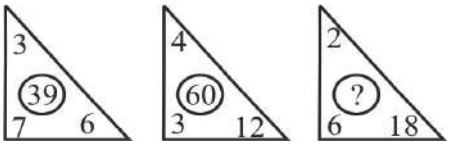


Answer figure



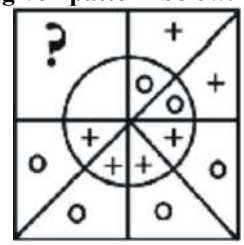
(a) A (b) C
(c) D (d) B

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



(a) 48 (b) 26
(c) 30 (d) 24

95. **Select the figure from given options which is complete the given pattern below.**



(a) (b)

(c) (d)

96. **Amit and Ritu are a couple. Mrinal and Shonal are brothers. Mrinal is the brother of Ritu. How is Shonal related to Amit?**

(a) Brother-in-law (b) Brother
(c) Cousin (d) Uncle

97. **A ÷B means - A is daughter of B**

A × B means - A is husband B

A - B means - A is Mother B

A + B means - A is brother B

If 'U - V ÷ W + Y × Z', then what's the relation of Z to V.

(a) Wife of father's brother
(b) Sister of Mother
(c) Daughter
(d) Wife of mother's brother

98. **If p + q implies p – q, p – q implies p × q, p × q implies p÷ q and p ÷ q implies p + q, then find the value of 5 + 6 – 75 × 15 ÷ 30**

(a) 5 (b) –5 (c) 0 (d) 10

99. **Which two numbers, from among the given options, should be interchanged to make the given equation correct?**

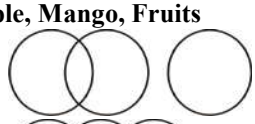
21 ÷ 9 + 99 – 81 × 5 = 3

(a) 9 and 81 (b) 21 and 81
(c) 21 and 5 (d) 9 and 5

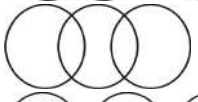
100. **Select the Venn diagram that best represents the relationship between the given set of classes.**

Apple, Mango, Fruits

(a)

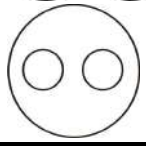


(b)

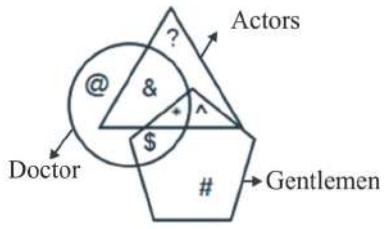


(c)

(d)

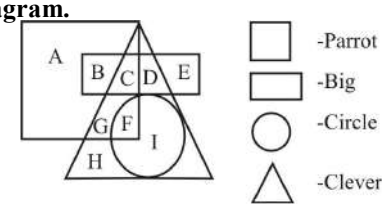


101. In the given diagram, the circle represents 'doctors', the triangle represents 'actors' and the pentagon represents 'gentlemen'. Which of the following symbol(s) represent(s) those 'gentlemen' who are 'actors'?



(a) * ^ (b) ^ # (c) ^ # * (d) ^

102. Select the option that means 'Big, Clever, Parrot' according to the following Venn diagram.



(a) C (b) F (c) B (d) M

103. Each of K, L, M, N and P gave an exam on a different day of a week starting from Monday and ending on Sunday of the same week. No exam is held on Friday and Saturday. Only two persons have exams between N and M. L's exam is held on Wednesday. Only one person has exam between N and L. P's exam is held on Sunday. Whose exam is held on Monday?

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

104. Three statements are given followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements:
All books are papers.
All trees are papers.
All papers are recyclable.
Conclusions:
I. Some books are trees.
II. All trees are recyclable.
(a) Neither conclusion I nor II follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Only conclusion I follows

105. Three statements are given followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements :
All trees are plants.
All leaves are trees.
All greens are leaves.
Conclusions :
I. All plants are greens.
II. All trees are leaves.
III. Some plants are leaves.
(a) Only conclusions I and II follow.
(b) Only conclusions II and III follow.
(c) Only conclusion III follows.
(d) Only conclusion I follows.

106. A statement is given following by two possible conclusions numbered I and II. You has to assume everything in the statement to be true and on the basis of it, decide which of the conclusions logically follow(s).
Statement :
Playing with mud and butterflies in a garden is more beneficial for small children than watching academic videos on computers or mobile phones.
Conclusions :
I. Mobile phones and computers are harmful for small children.
II. Real experiences are more beneficial than virtual experiences for children's development.
(a) Only conclusion II follows.
(b) Neither conclusion follows.
(c) Both the conclusions follow.
(d) Only conclusion I follows.

107. In this question, a statement is followed by two conclusions numbered I and II. You have to assume everything in the statement to be true and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.
Statement-
Price of onions has increased by 60 percent due to shortage of onions in the market.
Conclusion_
I. Government can consider importing onions to bring down prices.
II. People must stop eating onions and switch to potatoes instead.
(a) Only conclusion I follows
(b) Both conclusions I and II follow
(c) Only conclusion II follows
(d) Neither conclusion I nor II follows

108. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.
Statement:
A cab can be booked by the customer using mobile apps.
Assumptions:
I. Sales of luxury cars will increase substantially.
II. Customers will have to pay less.
(a) Both assumptions I and II are implicit
(b) Only assumption I is implicit
(c) Neither assumption I nor II is implicit
(d) Only assumption II is implicit

109. Consider the given question and decide which of the given assumptions is/are implicit in the question.
Question :
Could India become a terror free country in future?
Assumptions:
1. India has declared a zero-tolerance policy
2. India's security establishment is working hard on all the fronts

(a) Both assumptions 1 and 2 are implicit
(b) Either assumption 1 or 2 is implicit
(c) Only assumption 1 is implicit
(d) Only assumption 2 is implicit

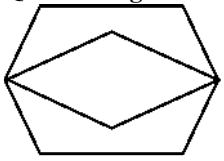
110. Question:-
M, A, N and K are standing in a row. On the basis of following information, we arranged them from smallest to largest, then who stands at end.
Statement:
1. A is smaller than K.
2. M is smaller than A.
(a) Both statement 1 and 2 are not sufficient
(b) Both statement 1 and 2 are sufficient
(c) Statement 1 alone is sufficient
(d) Statement 2 alone is sufficient

111. A question is given followed by two statements labelled I and II, Identify which of the statements is/are sufficient to answer the question.
Question:
How is Damini related to Bhola?
Statements:
I. Tika has only one son, Bhola and only one daughter Kamala.
II. Damini is Roma's son's wife. Kamala is the only daughter of Roma. Meghan is the daughter of Bhola.
(a) Statement I alone is sufficient, while Statement II alone is not sufficient to answer the question.
(b) Both Statements I and II together are sufficient to answer the question.
(c) Statement II alone is sufficient, while Statement I alone is not sufficient to answer the question.
(d) Statements I and II together are not sufficient to answer the question.

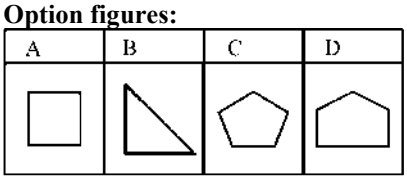
112. A certain number of persons are standing in a straight row facing North. X is standing to the immediate left of W but immediate right of R. Z is standing to the immediate left of R. There is only one person to the left of P.Q is standing to the immediate left of Y. The person standing at the extreme right end is the only one person to the right of Y. Only four persons are standing between P and Q. If no other person is standing in the row, what is the total number of persons standing?
(a) Ten (b) Eight (c) Seven (d) Nine

113. Among five friends, Ravi is taller than Anand but he is not as tall as Sunil. Rohit is taller than Sonu but shorter than Anand. Who is the shortest in their group?
(a) Sunil (b) Rohit (c) Sonu (d) Anand

114. Which of the following cut shape is used on a transparent sheet to make the following figure?
Question figure:

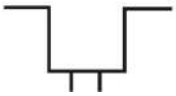


Option figures:

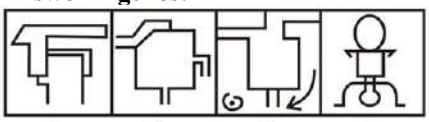


(a) D (b) A (c) B (d) C

115. The below problem figure is embedded in one of the four answer figures. Which of the following figures contain the problem figure?
Problem Figure



Answer Figures:

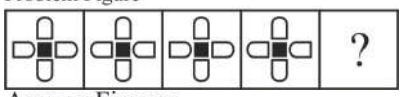


(a) B (b) C (c) A (d) D

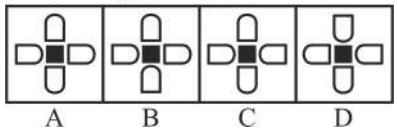
116. 'Minute' is related to 'Hour' in the same way as 'Inch' is related to '———'.
(a) Measure (b) Foot
(c) Centigrade (d) Metre

117. In a certain code language, if HOUSE is coded as 10-13-23-17-7 then REHEARSE will be coded as ?
(a) 20-7-10-7-3-20-21-7
(b) 16-3-6-3-25-16-17-3
(c) 20-3-10-3-3-16-21-3
(d) 18-5-8-5-1-18-19-5

118. Select answer figure that replace the ? mark in question figure-
Problem Figure



Answer Figures



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

119. What will be come in the place of question mark from following options?

A_7	D_9	G_{11}
J_9	?	P_{13}
S_{11}	V_{13}	Y_{15}

(a) M_{11} (b) L_{12} (c) M_{13} (d) N_{14}

120. Statements:
- **All vehicles are bats.**
- **All cows are bats.**

Conclusions:
1. All vehicles are cows.
2. All cows are vehicles.
(a) Both conclusion 1 and 2 follow
(b) Only conclusion 2 follows
(c) Neither conclusion 1 nor 2 follows
(d) Only conclusion 2 follows

SOLUTION : PRACTICE SET- 1

ANSWER KEY

1. (d)	**13. (d)**	**25. (a)**	**37. (a)**	**49. (d)**	**61. (a)**	**73. (b)**	**85.(b)**	**97. (a)**	**109. (a)**
2. (c)	**14. (d)**	**26. (d)**	**38. (c)**	**50. (a)**	**62. (c)**	**74. (d)**	**86. (c)**	**98. (a)**	**110. (a)**
3. (c)	**15. (b)**	**27. (d)**	**39. (b)**	**51. (d)**	**63. (b)**	**75. (b)**	**87. (d)**	**99. (b)**	**111. (b)**
4. (a)	**16. (b)**	**28. (d)**	**40. (b)**	**52. (b)**	**64. (d)**	**76.(c)**	**88. (d)**	**100. (d)**	**112. (d)**
5. (c)	**17. (d)**	**29. (a)**	**41. (d)**	**53. (c)**	**65. (d)**	**77. (a)**	**89. (b)**	**101. (a)**	**113. (c)**
6. (a)	**18. (c)**	**30. (d)**	**42. (b)**	**54. (b)**	**66. (c)**	**78. (b)**	**90. (b)**	**102. (a)**	**114. (d)**
7. (d)	**19. (b)**	**31. (a)**	**43. (b)**	**55. (a)**	**67. (c)**	**79. (b)**	**91. (c)**	**103. (d)**	**115.(d)**
8. (c)	**20. (a)**	**32. (b)**	**44. (a)**	**56. (c)**	**68.(c)**	**80. (b)**	**92. (b)**	**104. (b)**	**116. (b)**
9. (c)	**21. (b)**	**33. (b)**	**45. (d)**	**57. (b)**	**69. (a)**	**81. (b)**	**93. (b)**	**105. (c)**	**117.(c)**
10. (a)	**22. (a)**	**34. (c)**	**46. (d)**	**58. (c)**	**70. (d)**	**82. (a)**	**94. (a)**	**106. (a)**	**118.(a)**
11. (b)	**23. (d)**	**35. (a)**	**47. (c)**	**59. (a)**	**71. (a)**	**83. (a)**	**95. (c)**	**107. (a)**	**119. (a)**
12. (d)	**24. (b)**	**36. (c)**	**48. (b)**	**60. (b)**	**72. (a)**	**84. (c)**	**96.(a)**	**108. (c)**	**120. (c)**

SOLUTION

1. (d)

Indus Valley cites		**Location**
Kot Diji	–	Sindh (Pakistan)
Banawali	–	Haryana
Balu	–	Haryana
Ropar	–	Punjab

2. (c)

Emperor Ashoka sent the apostles to remote places to propagate the ideals of Buddhism so that people could save their lives through the teachings of Lord Buddha. He sent his son Mahendra and Daughter Sanghamitra to Sri Lanka to propagate Buddhism. Emperor Ashoka's name is Devanampriya in the inscriptions. His reign was from 273 BC to 232 BC.

3. (c)

The correct chronological order of the rulers–

- Mahmud Ghazni – (998–1030 AD)
- Muhammad Ghori – (1173–1206 AD)
- Genghis khan – (1206–1227 AD)
- Taimur – (1370–1405 AD)

4. (a)

To fill the gap between different religions, Akbar started a new religion Din-i-Ilahi/'Religion of God' in 1582. It believed in one God. It contained the good element of all religions. Its basis was rational. Although its basic function was monotheism, it also contained glimpses of polytheism. There were only 18 followers of this religion during the reign of Akbar.

5. (c)

In 1877, Benjamin Disraeli, Conservative Prime Minister of the United Kingdom, had proclaimed Queen Victoria as Empress of India. India was already under crown control after 1858, but this title was a gesture to link the monarchy with the empire further and bind India more closely to Britain.

6. (a)

The Nizam of Hyderabad was the first to accept the Subsidiary Alliance in 1798. Subsidiary Alliance was basically a treaty between the British East India Company and the Indian Princely states, by virtue of which the Indian kingdoms lost their sovereignty to English. According to the Subsidiary Alliance system, the Indian rulers were not allowed by the East India Company to maintain their independent armies. The subsidiary alliance in India was planned by Lord Wellesley (Governor-General of India from 1798 to 1805), but this term was introduced by French Governor Dupleix. Order in which the Indian states entered into Subsidiary Alliance-

(i) Hyderabad (1798)
(ii) Mysore (1799 – After Tipu Sultan was defeated in the Fourth Anglo-Mysore War)
(iii) Tanjore (1799)
(iv) Awadh (1801)
(v) Peshwa (Marathas) (1802)
(vi) Scindia (Marathas) (1804)
(vii) Gaekwad (Marathas) (1803)

7. (d)

Asiatic Society of Bengal, a scholarly society, founded on January 15, 1784 by Sir William Jones, a British lawyer. The objective of the society was to promote oriental culture and education. It's headquarters is in Kolkata. The society was included in the list of Heritage Sites of national importance, since 1984.

8. (c)

The Delhi Durbar was held three times in 1877, 1903 and 1911. The 1911 Delhi Durbar was organised to celebrate the coronation of king George V and Queen Mary. The king declared that capital of India will be transferred from Calcutta to Delhi.

9. (c)

Sarday Vallabh Bhai Patel was responsible for the political integration of India by unifying 562 princely states in the country out of 565 in the very first instance. He is the first Home Minister of India.

10. (a)

Article 40- Organisation of village panchayats
Article 41- the State shall within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in certain cases.
Article 42- Provision for securing just and humane conditions of work and maternity relief
Article 43- Living wage, etc, for workers

11. (b)
M. Ananthasayanam Ayyangar was the speaker of the second Lok Sabha (1956-62). Ganesh Vasudev Mavlankar was the first speaker of Lok Sabha (15 May 1952 to 2nd Feb 1956.)

12. (d)
Article 161 grants power of Governor to "grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence." any person convicted of any offence against any law relating to a matter to which the executive power of the state extends.

13. (d)
The 73rd Constitution Amendment Act was passed in 1992 and it came into effect on 24 April 1993. This Act added a new chapter into the Constitution of India called Part IX the Panchayats.

14. (d)
Madras Municipal Corporation was the first Municipal Corporation in India. It was founded on 29 September 1688. After that Calcutta Municipal Corporation (1876) and Delhi Municipal Corporation was established in 1958.

15. (b)
The 124th Constitution Amendment Bill got the amendment status as 103rd Constitutional Amendment Act. It is related with the reservation of seats for Economically Weaker Sections (EWS) of society in education and services.

16. (b)
The Constitution divided the powers between the centre and the state in terms of three lists namely (i) Union List (ii) State List (iii) Concurrent List.

17. (d)
The patterns of stars seen in the sky are usually called Constellations, although more accurately a group of stars that forms a pattern in the sky is called an Asterism. Astronomers use the term constellation to refer to an area of the sky.

18. (c)
Uranus has the seventh position in terms of distance from the sun in our solar system and it is third in terms of diameter and fourth in mass number. The discovery of Uranus was done by Astronomer Sir William Herschel in 1781.

19. (b)
Continental Tropical air masses are hot, dry and warm air masses originating in the lower latitudes over deserts or interiors of land masses.
They usually develop in summer.
Rest of the other air masses are cold and humid.
Continental polar and Arctic → Cold air mass
Maritime polar → Cold.

20. (a)

Desert	–	**Location**
Kalahari Desert	–	South Africa
Great Victoria Desert	–	Australia
Patagonian Desert	–	Argentina
Sahara Desert	–	African continent

21. (b)

Country	-	**Tribes**
Pakistan	-	Pashtuns, Sindhis
South Africa	-	Zulu
India	-	Gonds,Bhils, Munda
China	-	Manchu, Hui

22. (a)
The Part of the northern plains of India comprising older alluvial soil is known as 'Bhangar'. The Bhangar is the older alluvium along the river beds forming terraces higher than the flood plain.
The Barind Plains in the deltaic region of Bengal and the 'Bhur formation' in the middle Ganga and Yamuna doab are regional variations of Bhangar. The Khadar is composed of newer alluvium and forms the floodplains along the river banks.

23. (d)
Kandaleru Dam is an irrigation project, built up in Nellore, Andhra Pradesh.

24. (b)
NHAI was set up in 1988. It's headquarter is situated in New Delhi. The National Highway Authority of India (NHAI) is responsible for managing the network of National highways in India. The National Highway Authority of India comes under the Ministry of Road Transport and Highways. NHAI was set up as an act of 1988, this act ensures the development, maintenance, and management of National highways.

25. (a)
Isoquant in economics is a curve that when plotted on a graph shows all the combinations of two factors that produces a given output. Elasticity is an economic concept used to measure the change in the aggregate quantity demanded of a goods or service in relation to price movements of that goods or service. Duopoly is a market in which two forms sell a product to a large number of consumers.

26. (d)

Rupee Note	**Depicted figure**
200	Sanchi Stupa
500	Red Fort
2000	Mangalyaan
20	Ellora Caves
50	Stone chariot of Hampi
100	Rani ki Vav
10	Konark Sun temple

27. (d)
Service Tax in India is a type of indirect tax charged on the services provided by a service provider. The Service Tax was introduced in India around on 1st July, 1994 on the recommendations of Dr. Raja Chelliah Committee on tax reforms.

28. (d)
Valmiki Ambedkar Awas Yojana (VAMBAY) was launched by the Prime Minister on December 2, 2001, with a view to ameliorate the conditions of the urban slum dwellers living below poverty line by providing them with dwelling units and the facility of community toilets.

29. (a)
The Central Rural sanitation Programme (CRSP) was launched in 1986 primarily with objective of improving the quality of life rural people and also to provide privacy and dignity to women. Good Sanitation practices prevent contamination of water and soil and thereby prevent diseases.

30. (d)
The first Winter Games were held in 1924 in Chamonix, France, but they were originally called "Winter sports week".

31. (a)
The headquarter of Indian Council Agricultural Research (ICAR) is located in New Delhi. It was established in Delhi in 1929.

32. (b)
The Golden Temples of Dambulla also known as Dambulla cave temple is a World Heritage Site located in Sri Lanka. It symbolizes the great Buddhist Culture in ancient Sri Lanka.

33. (b)
Shogatsu is a new year celebration in Japan. It is celebrated from 1 January to 3 January.

34. (c)
Hornbill festival is celebrated every year between December 1 and 10 in Nagaland. This festival showcases the rich cultural heritage and tradition of the Nagas on one platform at Naga Heritage Village Kisama in Kohima district. All the tribes of Nagaland take part in this festival. The festival is named after Hornbill, the globally respected bird and which is displayed in folklore in most of the state's tribes.

35. (a)
Famous folk dances and their concerned states are as follow:

Place		Folk dance
(1) Lakshadweep	→	Parichakali. etc.
(2) Tamil Nadu	→	Kuravanji, Karagattam Koothu, Puliyattam (Tiger dance) etc.
(3) Andhra Pradesh	→	Burrakatha, Vilasini Natyam, Butta bommalu etc.
(4) Karnataka	→	Yakshagaan, Dollu Kunitha, Komb aat etc.

36. (c)
Resistance is a measure of the opposition to current flow in an electrical circuit.
The unit of resistance is ohm.

37. (a)
$W = mgh$
(here m= 40kg, g =10m/sec^2 and h=5m)
$W = 40 \times 10 \times 5 = 400 \times 5 = 2000$
W = 2000 Joule
t = 4 s
$P = \frac{W}{t}$
Hence, $P = \frac{2000}{4} = 500$ watt

38. (c)
The equations of motion are mainly of three types.
$v = u + at$ ..... (1)
$s = ut + \frac{1}{2}at^2$ ..... (2)
$v^2 = u^2 + 2as$ ..... (3)
where u = initial velocity, v = final velocity, s = distance and a = acceleration and t = time
The above equation (1) shows the relation between velocity and time.
Equation (2) shows the relation between position and time.
And equation (3) shows the relation between position and velocity.

39. (b)
Sound is a kind of vibration which travels through solid, liquid and gas. It travels in the form of waves. The velocity of sound depends upon elasticity of medium and its density. It travels slow in gases, faster in liquids and fastest in solids. It does not travel in vacuum. Sound waves are the longitudinal mechanical waves.
Speed of sound in Air → 332 m/s
Speed of sound in Water → 1498 m/s
Speed of sound in Iron (Solid) → 5130 m/s

40. (b)
A rainbow is observed due to refraction of sunlight through rain drops because sunlight is polychromatic and when it refract through rain drops it disperse into 7 colour.

41. (d)
The attraction force between the molecules of a solid is maximum. The solid state of matter is identified by virtue of the structural firmness of the material and its direct resistance to deformation (change in shape, volume, and appearance). Solids have high Young's modulus and deformability modulus. The force of attraction between the molecules of the liquid is less than the molecules of the solid and the attraction force is the lowest among the molecules of the gas.

42. (b)
The concept that all atoms of an element are equal was falsified by the discovery of 'isotopes'. Isotopes are those atoms of an element whose atomic numbers are equal, but atomic mass numbers different.
Such as - ${}_1H^1$ (protium), ${}_1H^2$ (deuterium) and ${}_1H^3$ (tritium) etc.

43. (b)
The color of the strip does not change when sodium bicarbonate is placed on a strip of Ph paper

44. (a)
The periodic table was invented by Mendeleev in 1869 AD. According to Mendeleev's periodic law, 'the physical and chemical properties of elements are the periodic functions of their atomic weights.' In mendeleev's periodic law element were arranged on the basis of increasing their atomic mass in the periodic table. The number of known elements at that time of was 63. He divided the periodic table into 9 groups and 7 periods.

45. (d)
The burning of methane releases carbon dioxide and water, methane is also known as marsh gas. Methane gas is a biofuel produced due to rotting of animal and plant matter in marshy places. This gas emits as bubbles. Smoke from methane does not occur. A lot of heat is produced in it. It does not cause pollution.

46. (d)
Horticulture is the branch of science in which we deal about plant agriculture dealing with garden crops, generally fruits, vegetables and ornamental plants. Horticulture is divided into the cultivation of plants for food (pomology and olericulture) and plant for ornament (floriculture and landscape horticulture).

47. (c)
Species is the basic unit of classification. A group of organisms with similar characteristics are categorized into species. Species are distinguished based on morphological characters.

- A species is a basic unit of classification and a taxonomic rank, as well as a unit of biodiversity.
- The term taxonomy was originally coined by Augustin Pyramus de Candolle in 1813.

48. (b)

Pituitary gland is an endocrine gland, which secretes pituitary hormones. It is divided into two parts adenohypophysis and neurohypophysis. Adenohypophysis is composed of pars distalis and pars intermedia. The pars distalis is also known as the anterior pituitary gland which secrets growth hormone and hormones like somatotropin, prolactin etc.

49. (d)

Names of the diseases caused by fungus in plants are as follow:

Diseases in Plants	Pathogen (Fungus)
Black worm disease of wheat (Black Rust)	Puccinia graminis triticale
Red Rot Disease of Sugarcane	Colletotrichum falcatum
Peanut tikka disease	Cercospora arachidicola and cercospora personatum
Green ear disease of millet	Sclerospora graminicola

50. (a)

Phloem caries photosynthetic products from leaves to other parts of plant.

Phloem is a plant vascular tissue that conducts foods made in the leaves during photosynthesis to all other parts of the plants. Phloem is composed of various specialized cells called sieve tube, phloem fibres and phloem parenchyma cells.

51. (d)

Divisibility rule of 9 : A number whose sum of its digit is exactly divisible by 9 then the number is always divisible by 9.

from options -

(a) 49104 $\rightarrow$ 4 + 9 + 1 + 0 + 4 = 18, divisible by 9.

(b) 77832 $\rightarrow$ 7 + 7 + 8 + 3 + 2 = 27, divisible by 9.

(c) 35253 $\rightarrow$ 3 + 5 + 2 + 5 + 3 = 18, divisible by 9.

(d) 45390 $\rightarrow$ 4 + 5 + 3 + 9 + 0 = 21, not divisible by 9.

52. (b)

Total number of handshakes

$$= \frac{n}{2}(n-1)$$

$$= \frac{30}{2}(30-1)$$

$$= 15 \times 29$$

$$= 435$$

53. (c)

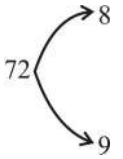
Given,

88p554085k6 Where, $k \neq p$

Note- The number which is divisible by 72 is also divisible by 8 and 9.

Divisibility rule of 8– If the last three digit of the number are divisible by 8, then the number will be divisible by 8.

Divisibility rule of 9– If the sum of the all digits of a given number is divisible by 9, then number will be divisible by 9.



88p554085k6

On putting, k = 3

$\frac{536}{8} = 67$ (Completely divisible by 8)

and On putting p = 2

$$\frac{8+8+2+5+5+4+0+8+5+3+6}{9}$$

$= \frac{54}{9} = 6$ (Completwly divisible)

Then, (3k + 2p)

$= 3 \times 3 + 2 \times 2$

$= 13$

54. (b)

$\frac{7}{9} = 0.777$

$\frac{6}{7} = 0.857$

$\frac{22}{25} = 0.88$

$\frac{11}{13} = 0.846$

Hence, fraction $\frac{22}{25} = 0.88$ is the largest.

55. (a)

$\frac{0.3}{1000} = ?$

$\frac{0.3}{1000}$

$= \frac{0.3}{10^3}$

$= 0.3 \times 10^{-3}$

$= 3 \times 10^{-1} \times 10^{-3}$

$? = 3 \times 10^{-4}$

56. (c)

$x = \sqrt{142884}$

$x^2 = 378 \times 378$

$x^2 = (378)^2$

$\boxed{x = 378}$

Second Method

$$\begin{array}{r|l} & 378 \\ \hline 3 & \overline{142884} \\ 3 & 9 \\ \hline 67 & 528 \\ 7 & 469 \\ \hline 748 & 5984 \\ 8 & 5984 \\ \hline & \times\times\times\times \end{array}$$

57. (b)

$$\left(\sqrt{5}+1\right)^2 = a+b\sqrt{5}$$

$$5+1+2\sqrt{5} = a+b\sqrt{5}$$

$$6+2\sqrt{5} = a+b\sqrt{5}$$

On comparing the both sides,

$a = 6$

$b = 2$

58. (c)

$$1\frac{1}{5}-3\frac{2}{4}\div 1\frac{3}{4}\div\left(x+3\frac{1}{8}\right)\div 1\frac{1}{7}=1$$

$$\frac{6}{5}-\frac{14}{4}\times\frac{4}{7}\times\frac{8}{(8x+25)}\times\frac{7}{8}=1$$

$$\frac{6}{5}-\frac{14}{(8x+25)}=1$$

$$\frac{1}{5}=\frac{14}{(8x+25)}$$

$$8x+25=70$$

$$8x=45$$

$$x=5\frac{5}{8}$$

59. (a)

$$\text{Present population of the village} = 10000\times\left(1+\frac{10}{100}\right)^2$$

$$= 10000\times\frac{11}{10}\times\frac{11}{10}$$

$$= 12100$$

60. (b)

The number of valid votes polled in favour of A is

$$= 560000\times\frac{85}{100}\times\frac{75}{100}$$

$$= 3,\ 57,\ 000$$

61. (a)

Let the monthly salary of Alok is ₹ x

According to the question,

$$1200 = x\times\frac{15}{100}$$

$x =$ ₹ 8000

62. (c)

The cost price of an item (CP) = ₹4500

Selling price (SP) = ₹ 3500

$$\text{loss\%} = \frac{CP-SP}{CP}\times 100$$

$$=\frac{4500-3500}{4500}\times 100$$

$$=\frac{1000}{4500}\times 100$$

$$=\frac{1000}{45}$$

$$=22\frac{2}{9}\%$$

63. (b)

Total cost price = ₹ 400×60 = ₹ 24000

Selling price of 18 bags = $\left(400+400\times\frac{8}{100}\right)$ = ₹ 432

Let the selling price of the remaining bags to make a profit of 16.4% = ₹ x

According to the question,

$$432\times 18 + x\times(60-18) = 24000 + 24000\times\frac{16.4}{100}$$

$42x + 7776 = 24000 + 3936$

$42x = 27936 - 7776$

$42x = 20160$

$x = 480$

So to make a profit of 16.4% of each bag, the rest of the bags should sell at a cost of 480 Rs.

64. (d)

Let the cost price of article = ₹ 100

According to the question,

$$\text{Selling price} = 100\times\frac{120}{100}\times\frac{95}{100}\times\frac{95}{100}$$

$$=\frac{120\times 95\times 95}{10000}$$

$$= ₹\ 108.3$$

$$\text{Required percentage} = \left(\frac{108.3-100}{100}\times 100\right)\%$$

$$= 8.3\%$$

65. (d)

Given, Amount ₹ 1,470

Anant : Mohan

3 : 4

$$\text{Mohan's Share} = \frac{4}{7}\times 1470 = ₹\ 840$$

66. (c)

According to the question,

$50000 \times 12 : B \times 9 = 3 : 2$

A's invest total amount the end of year

$= 50000 \times 12$

$= 600000$

Let profit of A and B are 3x and 2x respectively

$3x = 600000$

$x = 200000$

Hence B invest

$= 2x$

$= 2 \times 200000$

$= 400000$

67. (c)

Quantity of sugar in 90 ml

$$= 90\times\frac{38}{100} = 34.2\text{ml}$$

Let x ml water is added

According to the question,

$$\frac{34.2}{90+x}\times 100 = 17.1$$

$90 + x = 200$

$x = 110$ ml

68.(c)

According to the question-

$$\frac{\text{quantity of A}}{\text{quantity of B}} = \frac{15}{15}$$

Hence, the required ratio = 1:1

69. (a)

Principal (P) = ₹ 48750

Rate (R) = 16% Annual

Time (t) = 73 days or $\frac{1}{5}$ years

$$\text{S.I.} = \frac{P \times R \times T}{100}$$

$$= \frac{48750 \times 16 \times 1}{100 \times 5} = ₹\ 1560$$

70. (d)

From formula-

$$\text{Amount} = \text{Principal}\left(1+\frac{\text{Rate}}{100}\right)^{\text{Time}}$$

$$= 15000\left(1+\frac{5}{100}\right)^{3}$$

$$= 15000 \times \frac{21}{20} \times \frac{21}{20} \times \frac{21}{20}$$

$$= \frac{138915}{8} = ₹\ 17364.37$$

So, Manoj will get ₹ 17364.37 on maturity of fixed deposit.

71. (a)

: Seven consecutive numbers 1, 2, 3, 4, 5, 6, 7

According to the question,

$$\text{Average of the first five numbers} = \frac{1+2+3+4+5}{5}$$

$$Z = \frac{15}{5} = 3$$

Then, z = 3

$$\text{Hence, Average of the last three numbers} = \frac{5+6+7}{3}$$

$$= \frac{18}{3} = 6 \text{ or } z+3$$

72. (a)

$$\frac{\text{Speed of bus}}{\text{Speed of car}} = \frac{7}{11}$$

$$\frac{\text{Speed of bus}}{396/6} = \frac{7}{11}$$

$$\frac{\text{Speed of bus}}{66} = \frac{7}{11}$$

$\therefore$ Speed of bus = 6 × 7 = 42 km/h

73. (b)

Given :

Length of train = 725 m

Length of tunnel = 235 m

time = 48 sec.

According to the question -

$$\therefore \text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Speed of train} = \frac{725+235}{48} \Rightarrow \frac{960}{48} = 20 \text{ n/s}$$

$$\text{Speed of train in km/h} = 20 \times \frac{18}{5} = \boxed{72 \text{ km/h}}$$

74. (d)

Let the length of train = x m.

According to the question,

$$\frac{x}{2} = \frac{x+70}{5.5}$$

$\Rightarrow$ 2x + 140 = 5.5x

$\Rightarrow$ 3.5x = 140

$\Rightarrow$ $x = \frac{1400}{35} = 40$

Hence the length of the train = 40 m.

75. (b)

According to the question,

$$s = \frac{5+7+10}{2} = \frac{22}{2} = 11$$

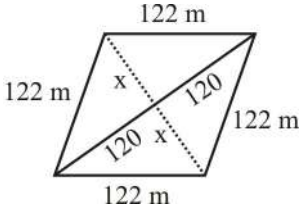
$$\text{Area of the triangle} = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{11(11-5)(11-7)(11-10)}$$

$$= \sqrt{11 \times 6 \times 4 \times 1} = 2\sqrt{66} \text{ cm}^2$$

76.(c)

According to the question,



$x^2 = 122^2 - 120^2$ (From Pythagoras theorem)

= 14884 – 14400

= 484

x = 22 meter

Second diagonal (d_2) = 2x

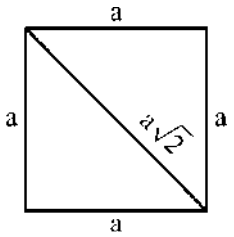
= 2×22

= 44 meter

$$\text{Area of rhombus} = \frac{1}{2} \times d_1 \times d_2$$

$$= \frac{1}{2} \times 240 \times 44 = 5280 \text{ m}^2$$

77. (a)



As per the question,
Area of square = half of the diagonal of square

$$a^2 = a\sqrt{2} \times \frac{1}{2}$$

$$a = \frac{1}{\sqrt{2}}$$

Diagonal of square $= a\sqrt{2}$

$$= \frac{1}{\sqrt{2}} \times \sqrt{2} = 1$$

78. (b)
Required number of cubes

$$= \frac{\text{Volume of cuboid}}{\text{Volume of cube}} = \frac{lbh}{a^3} = \frac{9 \times 6 \times 6}{3 \times 3 \times 3} = 12$$

79. (b)
Total expenditure on decoration and D J
$= 19 + 6 = 25\%$

$\because$ $100\% = 32700$

$$25\% = \frac{32700}{100} \times 25$$

$= ₹\ 8175$

80. (b)
According to the question,
Total number of tickets booked for Mumbai by Airlines Q and R = 60 + 100 = 160
Number of tickets booked for Delhi by Airline R = 80

$$\text{More percentage} = \frac{160 - 80}{80} \times 100$$

$= 100\%$

81. (b)
The first 25 odd numbers will be 1,3,5,7,9.....49 respectively which are in the arithmetic progression.
Where first term (a) = 1
and common difference (d) = 3 – 1 = 2
And number of terms (n) = 25
So, sum of n numbers of term in arithmetic progression

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

$$= \frac{25}{2}[2 \times 1 + (25-1) \times 2]$$

$$= \frac{25}{2}\left[2 + (24) \times 2\right]$$

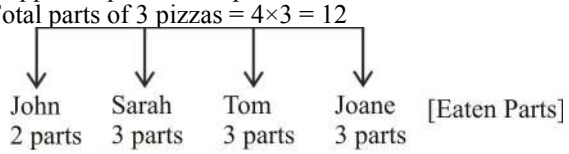
$$= \frac{25}{2}[2 + 48]$$

$$= \frac{25 \times 50}{2}$$

$= 25 \times 25 = 625$

Hence, sum of the first 25 odd number = 625

82. (a)
Suppose a pizza has 4 parts.
Total parts of 3 pizzas = 4×3 = 12



Remaining parts = 12– (2 + 3 + 3 + 3) = 1

Remaining parts of 3 pizzas $= \frac{1}{12} \times 3 = \frac{1}{4}$ of a pizza

83. (a)
Time = 3 : 4 : 6

Therefore, part $= \frac{1}{3} : \frac{1}{4} : \frac{1}{6} = 4 : 3 : 2$

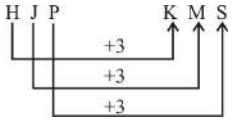
Suppose that their share is 4x, 3x and 2x
4x + 3x + 2x = 63
9x = 63
x = 7
∴ Shares of three = 28, 21, 14

84. (c)
The face value of 6 in the number 206743 = 6
And the place value of 6 = 6 × 1000 = 6000
The required sum (Face value + Place value) = 6 + 6000 = 6006

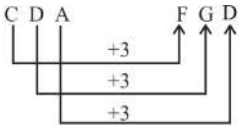
85. (b)
$x^2 - 12x + 2k = 0$, putting x = 4
$(4)^2 - 12 \times 4 + 2k = 0$
16 – 48 + 2k = 0
2k = 32
$\boxed{k = 16}$
New equation
$x^2 - 12x + 32 = 0$
$x^2 - 12x + 32 = 0$
$x^2 - 8x - 4x + 32 = 0$
$x(x-8) - 4(x-8) = 0$
$(x-8)(x-4) = 0$
$x - 8 = 0 \Rightarrow x = 8$
∴ Other root = 8

86. (c)
Just as, pediatrics is related to children. Similarly, neurology is related to brain.

87. (d)
Just as,

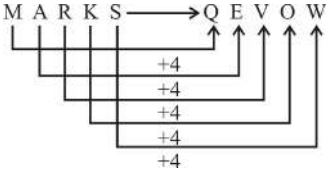


Similarly,

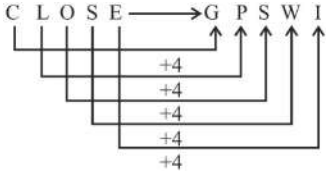


Hence, option (d) is correct.

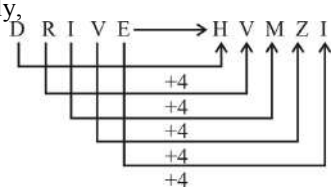
88. (d)
Just as,



And,

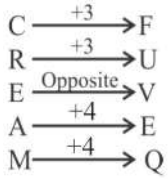


Similarly,

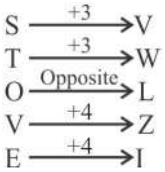


89. (b)

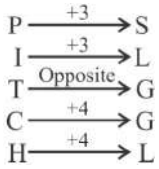
Just as,



And,



Similarly,



90. (b)

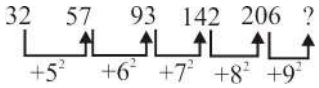
Water, Solar and Wind are renewable resources whereas Coal is non-renewable resource.
Hence, option (b) is odd one.

91. (c)

Option (c) will be different from the other three options because in all the remains options, one line is vertical and the other horizontal while in option (c) both lines are horizontal.

92. (b)

The given series is as follows :-

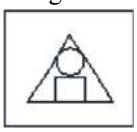


? = 206+81⇒ 287

Hence, $\boxed{? = 287}$

93. (b)

According to the given information a combination will be formed in the answer figure.



Hence, the figure C will be replaced by ?

94. (a)

Just as,

From figure I,

$7 + 6 = 13 \times 3 = 39$

From figure II,

$3 + 12 = 15 \times 4 = 60$

Same as,

From figure III,

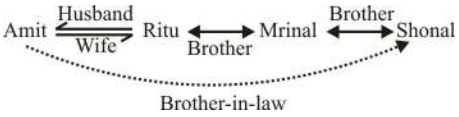
$6 + 18 = 24 \times 2 = \boxed{48}$

95. (c)

Option figure (c) will complete the pattern. So, option (c) is correct.

96.(a)

On drawing blood relation diagram according to the question,

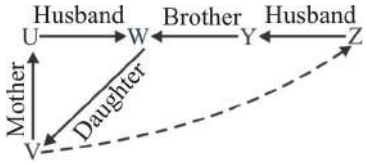


Hence, it is clear from above diagram that Shonal is the brother-in-law of Amit.

97. (a)

Given,

U – V ÷ W + Y × Z



It is clear from the diagram that Z is the wife of the brother of the father of V.

98. (a)

Given,

$5 + 6 - 75 \times 15 \div 30$

As per question, on changing signs –

$= 5 - 6 \times 75 \div 15 + 30$

$= 5 - 6 \times 5 + 30$

$= 5 - 30 + 30$

$= 5$

99. (b)

Given expression-

$21 \div 9 + 99 - 81 \times 5 = 3$

According to the option (b),

On interchanging 21 and 81

$81 \div 9 + 99 - 21 \times 5 = 3$

$9 + 99 - 105 = 3$

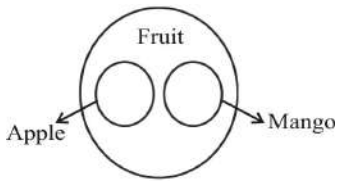
$108 - 105 = 3$

$3 = 3$

LHS = RHS

100. (d)

On drawing the Venn diagram between Apple, Mango and Fruit.



Hence, option (d) is correct.

101. (a)

Symbols (* ∧) represent gentlemen who are also actors.

102. (a)

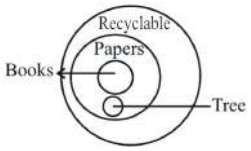
In the given Venn Diagram C means Big, Clever, Parrot.

103. (d)
According to the question,

Person	Exam day of a week	Exam
N	Monday	√
K	Tuesday	√
L	Wednesday	√
M	Thursday	√
	Friday	×
	Saturday	×
P	Sunday	√

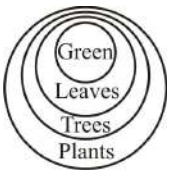
Hence, it is clear from above that N's exam is held on Monday.

104. (b)
On making Venn diagram,



It is clear that only conclusion II follows.

105. (c)
According to the statement, Venn diagram is as follows,



Conclusion:-
(i) ✗
(ii) ✗
(iii) ✓
Hence, it is clear from figure that only conclusion III follows.

106. (a)
According to the statement only conclusion II follows.

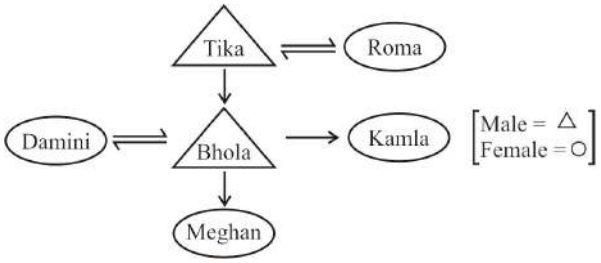
107.(a)
According to statement only conclusion I follows.

108. (c)
In assumption (I) sales of luxury cars will increase substantially. In assumption (II) customers will have to pay less. The things mentioned in both the assumption have nothing to do with the statement. Hence neither assumption I nor II is implicit.

109. (a)
Since, India has declared a zero-tolerance policy thus, off course in a given course of time India will emerges as a terror free country provided that all our security intelligence are working with might and main. Hence, both assumptions 1 and 2 are implicit.

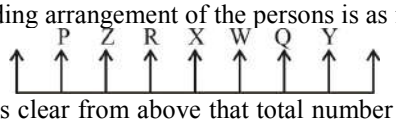
110. (a)
Statement:
I. K > A
II. A > M
Thus, M < A < K
Hence, both statements 1 and 2 are not sufficient to answer the question.

111. (b)
On making a diagram according to the statements,



Hence, it is clear from above diagram that Damini is wife of Bhola.

112. (d)
The standing arrangement of the persons is as follows :



Hence, it is clear from above that total number of person in the row is nine.

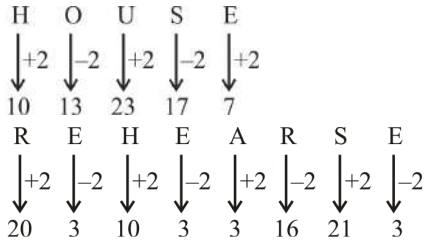
113. (c)
Descending order of their height is as follows
Sunil > Ravi > Anand > Rohit > Sonu
Hence, it is clear that Sonu is the shortest in group.

114. (d)
It is clear from the given question that option figure C is used to create the question figure.

115.(d)
The given question image is embedded in answer figure (D). So, option (d) is correct.

116. (b)
Just as, 'Minute' is related to 'Hour'. Similarly 'Inch' is related to 'Foot'.

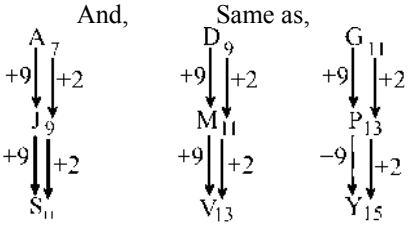
117.(c)



Hence, REHEARSE will be coded as 20–3–10–3–3–16–21–3.

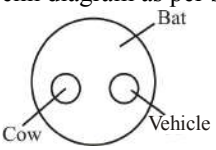
118.(a)
In the given figure series , figure A will be at the place of question mark.

119. (a)
Just as, And, Same as,



Hence, $\boxed{? = M_{11}}$

120. (c)
On drawing the Venn diagram as per statement.



Hence, Neither conclusion 1 nor 2 follows.

PRACTICE SET - 2

1. The famous Indus Valley site Mohenjodaro was first time excavated by the eminent Indian archaeologist:
(a) SR Rao (b) BB Lal
(c) RD Banerji (d) Daya Ram Sahni

2. Which native Indian dynasty issued their own coins with portraits of their rulers on them?
(a) The Peshwa Dynasty
(b) The Rashtrakuta Dynasty
(c) The Satavahana Dynasty
(d) The Pandya Dynasty

3. Al-Biruni wrote his book 'Kitab-ul-Hind' in which language ?
(a) Sanskrit (b) Arabic
(c) Persian (d) Syrian

4. Tomb of Sher Shah Suri is situated in ———.
(a) Fatehpur Sikri (b) Delhi
(c) Sasaram (d) Agra

5. Who was the ruler of India at the inception of East India Company?
(a) Aurangzeb (b) Akbar
(c) Jahangir (d) Shahjahan

6. One of the most important contributions of the British to India in 1853 which enabled people to travel long distance was :
(a) the airways (b) the railways
(c) the roadways (d) the waterways

7. Lala Lajpat Rai was associated with the _____ since 1921.
(a) Satyashodhak Samaj
(b) Chinmaya Mission
(c) Sarbatatyadipika Sabha
(d) Servants of the People Society

8. Which popular tourist destination of India was built in 1911 to commemorate the visit of king Georg V and Queen Marry?
(a) India Gate
(b) Gateway of India
(c) Prince of wales Museum
(d) Victoria Terminus

9. Who was the president of the first meeting of the constituent assembly, which was held on December 9, 1946?
(a) Dr. Sachchidananda Sinha
(b) Jawaharlal Nehru
(c) Manabendra Nath Roy
(d) Dr. Rajendra Prasad

10. In India when a president is to be impeached for violation of the Constitution, the charge is preferred by ……. .
(a) Only Lok Sabha
(b) Either House of Parliament
(c) Only Rajya Sabha
(d) Union Council of Ministers

11. Who presides over the first meeting of a newly constituted Lok Sabha?
(a) Protem Speaker (b) President
(c) Prime Minister (d) Speaker

12. Who is called the head of Administration of union territory in the Republic of India?
(a) Lieutenant Governor (b) Governor
(c) President (d) Prime Minister

13. Which of the following Constitution Amendment Act of India is related to the urban local bodies?
(a) 74th (b) 73rd (c) 75th (d) 72nd

14. In India, the Chief Election Commissioner is appointed by the :
(a) President of India
(b) Chief Justice of India
(c) Lok Sabha speaker
(d) Prime Minister of India

15. Which two words were added to the preamble to the Indian Constitution by the 42 Constitutional Amendment 1976?
(a) Democratic, Republic (b) Secular, Fraternity
(c) Justice, Freedom (d) Socialist, Secular

16. Which of the following keywords best defines the existence of more than one level of government in the country?
(a) Federalism
(b) Deliberative democracy
(c) Dictatorship
(d) Totalitarianism

17. Name the exoplanet which is considered as a pretty close cousin of Earth, and is also known as 'Earth 2.0'.
(a) Kepler-452b (b) Europa-31
(c) Neptune (d) Pluto

18. The lunar eclipse occurs only on_____.
(a) first quarter day (b) new Moon day
(c) full Moon day (d) last quarter day

19. At which of these places is the thickness of the troposphere the greatest?
(a) Above Mountains (b) South Pole
(c) North Pole (d) Equator

20. Where is the Taklamakan desert located?
(a) Saudi Arabia (b) Namibia
(c) China (d) United states

21. Which of the following region is 'Viticulture' a speciality?
(a) Australia (b) Mediterranean region
(c) North California (d) Austria

22. The 'Garo', 'Khasi' and 'Jaintia' hills are part of which physical division of India?
(a) The Himalayan Mountain
(b) The Peninsular Plateau
(c) The Northern Plains
(d) The Coastal Plains

23. Which of the following projects is in Uttarakhand?
(a) Tehri Hydro Power Complex
(b) Koyna Hydroelectric Project
(c) Sharavathi Hydroelectric Project
(d) Chamera Hydroelectric Project

24. Select the INCORRECT pair of railway zone and its headquarters.
(a) West Central – Jabalpur
(b) East Central – Hajipur
(c) North Central – Gorakhpur
(d) South Central – Secunderabad

25. When a proportional increase in all input results in an increase in output by a larger proportion, the production function is said to display _____.
(a) Increasing returns to scale
(b) Constant returns to scale
(c) Decreasing returns to scale
(d) Doubling returns to scale

26. Which of the following could be a description of the term 'Financial Inclusion'?
(a) Use of mobile phone for financial transactions
(b) Implementation of 'Know Your Customer' norm
(c) Facility of transfer of money free of cost
(d) Delivery of financial services at affordable cost to the poor

27. Which of the following is NOT a direct tax in India?
(a) Income Tax (b) Corporate tax
(c) Excise Tax (d) Capital Gain tax

28. Where the Gift city is planned by Government?
(a) Ahmedabad (b) Hyderabad
(c) Mysuru (d) Jaipur

29. The Green Revolution within India led to an increase in agricultural production, especially in ____.
(a) Jharkhand, Punjab, and Uttarakhand
(b) Haryana, Punjab, and Uttar Pradesh
(c) Chhattisgarh, Bihar, and Odisha
(d) Rajasthan, Maharashtra, and Gujarat

30. Which of the following countries hosted the first Commenwealth Games in 1930?
(a) Australia (b) New Zealand
(c) Canada (d) England

31. Where is India's the first oceanarium being set up?
(a) Mumbai (b) Goa
(c) Kochi (d) Vishakhapatnam

32. Who among the following is popularly known as 'Waterman of India'?
(a) Dr. Arun Krishnsnan
(b) Dr. Rajendra Singh
(c) Dr. Hiralal Chaudhuri
(d) Dr. MS Swaminathan

33. In which of the following states of India is 'Sazo' festival celebrated?
(a) Himachal Pradesh (b) Telangana
(c) Karnataka (d) Jharkhand

34. Purna Kumbh Mela is held once in how many years?
(a) In every 8 years (b) In every 12 year
(c) In every 6 years (d) In every 4 year

35. Four places have been given below of which three are same in some way and one is different choose the odd one out.
(a) Kathak - North India (b) Garba - Gujarat
(c) Bhangra - Punjab (d) Bihu - Assam

36. Newton is the unit to measure _____.
(a) Power (b) Force
(c) Pressure (d) Resistance

37. When a compressed spring is released, it converts its potential energy into-
(a) Mechanical energy
(b) Wind power
(c) Elastic potential energy
(d) Kinetic energy

38. The work done by the force of friction is.....
(a) always positive
(b) positive only for small frictional forces
(c) always negative
(d) positive only for large frictional forces

39. What causes sound?
(a) Refraction (b) Vibration
(c) Reflection (d) Rotation

40. What happens when a pencil is immersed in water?
(a) Colour of pencil changes
(b) Pencil appears bright
(c) Pencil appears bent
(d) Pencil looks curved

41. The mixture can be …… in nature?
(a) Homogeneous
(b) Heterogeneous
(c) Both homogeneous and heterogeneous
(d) Pure substance

42. Isobars have the same number of ……?
(a) Ion (b) Nucleus
(c) Electron (d) Proton

43. Which of the following properties is not of alkali?
(a) They react with acids and neutralize them.
(b) They convert red litmus to blue
(c) They convert blue litmus to red
(d) Their taste is bitter.

44. In the Mendeleev periodic table, gaps were left for undiscovered elements. Which of the following elements later found a place in the periodic table?
(a) Ge (b) F
(c) Ca (d) Mg

45. Leakage of LPG can be easily detected by spreading ..... in air?
(a) methyl isocyanate (b) nitrous oxide
(c) ethyl mercaptan (d) methyl mercaptan

46. Under which branch of soil science is the study of the effect of soil on living things?
(a) Andrology (b) Edaphology
(c) Agrobiology (d) Desmology

47. What is the basic difference in food intake by Amoeba and Paramecium?
(a) Amoeba can take up food from entire cell surface Paramecium only through specific spot
(b) Amoeba takes up food through specific spot while Paramecium can take up from 2 spots
(c) Both of them can take up through the entire cell surface
(d) Amoeba can take up through entire cell surface and Paramecium through 4 spots on its cells surface

48. **Which of the following is NOT a part of the female reproductive system?**
(a) Fallopian tubes (b) Ovaries
(c) Urethra (d) Uterus

49. **Which of the following reproduce through spore formation?**
(a) Rhizopus (b) Bryophyllum
(c) Planaria (d) Hydra

50. **.....promotes cell growth and cell differentiation in plants.**
(a) Cytokinin (b) Abscisic acid
(c) Gibberellin (b) Auxin

51. **If the 7 digit number 504x5y3 is divisible by 11, then one of the values of the sum of x and y is:**
(a) 11 (b) 5 (c) 17 (d) 7

52. **If $x + y = 11$, then $(-1)^x+(-1)^y$ is equal to ..... (where x and y are whole numbers).**
(a) -1 (b) 1 (c) 2 (d) 0

53. **How many numbers of the first 100 positive integers are divisible by 3 or 4 without a remainder?**
(a) 50 (b) 5 (c) 58 (d) 85

54. **Which is the smallest fraction among the following fractions?**

$\frac{3}{9}, \frac{8}{14}, \frac{5}{8}, \frac{4}{9}$

(a) $\frac{4}{9}$ (b) $\frac{8}{14}$
(c) $\frac{3}{9}$ (d) $\frac{5}{8}$

55. $2\frac{1}{25} = ?$
(a) 0.24 (b) 2.4
(c) 2.004 (d) 2.04

56. **What is the square root of 34596 ?**
(a) 174 (b) 176
(c) 204 (d) 186

57. **If** $x = \frac{\sqrt{3}+1}{\sqrt{3}-1}$ **and** $y = \frac{\sqrt{3}-1}{\sqrt{3}+1}$ **then** $3(x + y) = ?$
(a) 13 (b) 8 (c) 12 (d) 10

58. **Solve the following.**

$\left(1+\frac{1}{x}\right)\left(1+\frac{1}{x+1}\right)\left(1+\frac{1}{x+2}\right)\left(1+\frac{1}{x+3}\right) = ?$

(a) $x+4$ (b) $\frac{x+4}{x}$
(c) $1+\frac{1}{x+4}$ (d) $\frac{1}{x}$

59. **20% of the population of a city died due to war and of the remaining population, 5% died in an epidemic. If the present population of the city is 15,200, then find the population of the city before the war.**
(a) 20,000 (b) 19,680
(c) 23,500 (d) 20,100

60. **In an election, there were only two candidates. The losing candidate got 48% of the total votes. His opponent got 6000 votes more and won by a margin of 3% votes. What was the number of invalid votes?**
(a) 2000 (b) 3200
(c) 6000 (d) 3000

61. **A person pays as his debt ₹8960 per month for repayment of loan, which is 28% of his monthly salary. Calculate his monthly salary.**
(a) ₹32,000 (b) ₹34,000
(c) ₹28,000 (d) ₹30,000

62. **The initial profit percentage on the sale of an item was 74%. If the cost price of the item went up by 50%, but the selling price remained the same, what would be the new profit percentage?**
(a) 8% (b) 16% (c) 13% (d) 24%

63. **Himani bought a washing machine for ₹8000 and spent ₹500 on its repairs. She sold it at 20% profit with the money she got by selling it, she bought another washing machine and sold it at 10% loss. What is her overall loss / profit?**
(a) Profit ₹640 (b) Loss ₹640
(c) Profit ₹680 (d) Loss ₹600

64. **A single discount equivalent to successive discounts of 10%, 15% and 20% is :**
(a) 45% (b) 36.6% (c) 40% (d) 38.8%

65. **A certain amount of money was divided between x and y in the ratio 4 : 3. If y's share is ₹2,400, the total initial amount is _____.**
(a) ₹8,000 (b) ₹7,200
(c) ₹5,600 (d) ₹6,000

66. **An amount of 48,000 is divided between two brothers Anil and Aditya in the ratio 11 : 13. What is the share of Aditya?**
(a) ₹24,000 (b) ₹26,000
(c) ₹2,000 (d) ₹22,000

67. **In a mixture of 90 litres, the ratio of milk to water 4 : 1 , In another mixture of 90 litres, the ratio of milk to water is 3 : 2, What is the positive difference between the quantities of milk in the two mixtures ?**
(a) 22 litres (b) 18 litres
(c) 23 litres (d) 16 litres

68. **The amount of alcohol in two different medicines is 1.5% and 2.5%. In what ratio they should be mixed so that the amount of alcohol in the new obtained mixture is 3.5%**
(a) 1 : 2 (b) 2 : 1
(c) 3 : 2 (d) 2 : 3

69. **The simple interest on ₹1280 at 5% p.a. for 3 years is:**
(a) ₹195 (b) ₹180
(c) ₹192 (d) ₹480

70. **What will be the amount of ₹5000 after 2 years. When there is an annual compound interest at the rate of 9% per annum.**
(a) ₹5,940 (b) ₹9,950
(c) ₹5,970 (d) ₹5,936

71. **The average of 7 numbers was given as 53. Later it was found that one number was misread as 16 instead of 58. What is the correct average of the given 7 numbers?**
(a) 55 (b) 56 (c) 59 (d) 52

72. **A man covers a certain distance in 8 hours at the speed of 75 km/h. To cover the same distance in 6 hours, what should be his speed ?**
(a) 150 km/h (b) 100 km/h
(c) 300 km/h (d) 200 km/h

73. **A train is travelling at a speed of 45 km/hr. Calculate the distance that will be covered by the train in 64 seconds.**
(a) 0.8 km (b) 4 km
(c) 2.94 km (d) 8 km

74. **A 200 metre long train crosses a 300 metre long bridge in 30 seconds what time will it take to cross a man standing in the middle of 150 metre long platform? In both the cases the speed is same.**
(a) 9 second (b) 11 second
(c) 12 second (d) 10 second

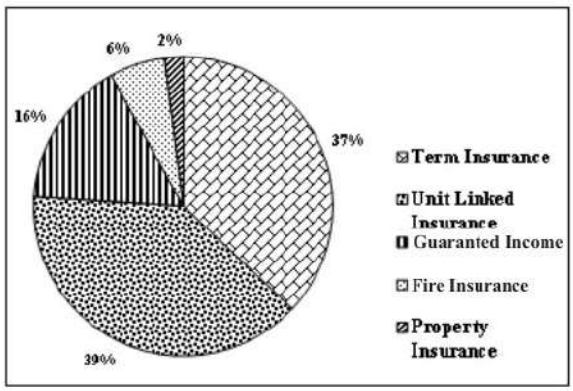
75. **If the area of an equilateral triangle is $25\sqrt{3}$ cm^2, then the length of each side of the triangle is:**
(a) 12 cm (b) 5 cm (c) 8 cm (d) 10 cm

76. **The area of a rhombus is 440 cm^2. If the length of one of its diagonals is 20 cm, then what is the length of its other diagonal?**
(a) 22 cm (b) 11 cm
(c) 44 cm (d) 88 cm

77. **The side of a square field is 110 m. Two routes 5 m wide pass through the middle of the square field parallel to the sides, intersects each other. Find the area of the routes.**
(a) 1000 m^2 (b) 1100 m^2
(c) 1075 m^2 (d) 975 m^2

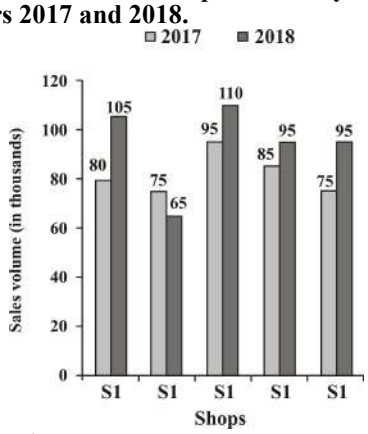
78. **A tank 4 m long, 2 m wide and 1.5 m deep is dug in a field 22 m long and 14 m wide. If the earth dug out is evenly spread out over the remaining field, then the level of the field will rise by:**
(a) 4.75 m (b) 5 cm (c) 3.5 cm (d) 4 cm

79. **Study the given pie-chart and answer the question that follows.**
The pie-chart presents the total share of different insurance products offered by an insurance company.



If the total insurance sold by the company in a given year was 36000, then how many fire and property insurances were sold in that year?
(a) 2160 (b) 2880
(c) 5760 (d) 720

80. **Study the graph and answer the question that follows. The following bar chart shows the sales volume of Philips bulbs (in thousand) from five different electric shops in a city during two years 2017 and 2018.**



What is the average sales volume of Philips bulbs (in numbers) from all the shops for the year 2017?
(a) 83000 (b) 80000
(c) 81000 (d) 82000

81. **How many numbers are there between 1000 and 3000 that are completely divisible by 7 ?**
(a) 281 (b) 284
(c) 286 (d) 283

82. **If 2/5 of the number of girl students attending a school function is equal to 3/5 of the number of boys attending the function. What fraction of the total students attending the function will be 2/5 of the number of girl students attending the function?**
(a) $\frac{5}{6}$ (b) $\frac{2}{3}$
(c) $\frac{1}{5}$ (d) $\frac{6}{25}$

83. **Jane won the lottery and get 1/3 of the prize money she makes a donation of Rs. 6000 which is 1/6th part. The total amount of lottery is:**
(a) 36000 (b) 18000
(c) 54000 (d) 108000

84. **The difference between two place values of 3 in 935071360 is-**
(a) 29999700 (b) 29999701
(c) 2999600 (d) 29999400

85. **Solve the following equation to find the value of 'x'. $(x-2)^2 - 36 = 0$; $x \in N$**
(a) 4 (b) –8 (c) –4 (d) 8

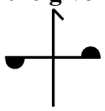
86. **Select the option that is related to the third term in the same way as the second term is related to the first term.**
Patient : Doctor :: Student: ?
(a) Monitor (b) School
(c) Teacher (d) Lecture

87. **Find the missing term for the related pair of letter clusters.**
RAMA : MARA : : SITA : : .....
(a) TSAI (b) TIAS
(c) SIAT (d) TISA

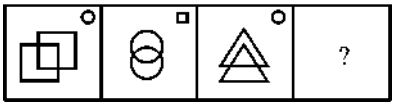
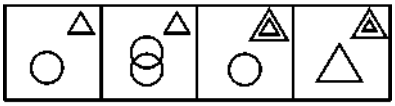
88. **In a certain code language, TOTAL is written as 68 and PEN is written as 35. In the same language, what will OIL be written as?**
(a) 36 (b) 46
(c) 56 (d) 66

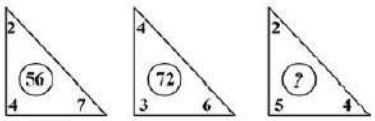
89. **In a certain code language CRUDE is written as BSTED. How is MOIST written that language?**
(a) LPHTS (b) NNJRU
(c) NPJTU (d) LNHRS

90. **Four words are given, out of which three are alike in some way and one is inconsistent. Select the inconsistent one.**
(a) Chair (b) Desk
(c) Table (d) Fan

91. **Identify odd one out of the given figures.**
(a)  (b) 
(c)  (d) 

92. **Which of the following numbers will replace the question mark (?) in the given series?**
47, 48, 52, 79, 95, ?
(a) 212 (b) 202
(c) 220 (d) 221

93. **Which figure will come in the place of (?) in given series.**
Question figure:

Answer figure:

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

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


(a) 11 (b) 30
(c) 86 (d) 40

95. **Pointing to a photograph, Rohit said, "She is the daughter of the only son of my father." How is Rohit related to the girl in the photograph?**
(a) Cousin (b) Brother
(c) Father (d) Uncle

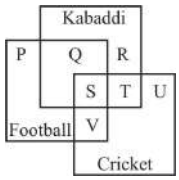
96. **A is the paternal grandfather of B, D is the brother of A and E is the son of D. How is E related to B?**
(a) Brother (b) Paternal Uncle
(c) Grandfather (d) Cousin

97. **A × B means A is the mother of B.**
A/B means A is the brother B.
A @ B means A is the sister of B.
A % B means A is the father of B.
Based on the above information. Which of the following means the maternal uncle?
(a) P × Q @ N / B (b) Q / N × M @ P
(c) Q / S % P (d) P / M × N @ Q

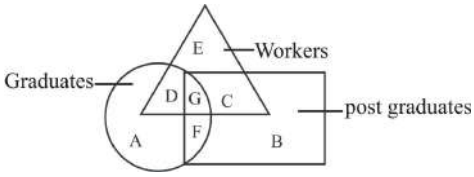
98. **If '+' means '–', '–' means '×', '×'means '÷' and '÷' means '+', what will come in place of the question mark (?) in the following equation?**
100 + 136 × 17 – 12 ÷ 6 = ?
(a) 4 (b) 14
(c) 8 (d) 10

99. **Which two numbers should be interchanged to make the given equation correct?**
7 × 8 + 9 – 6 ÷ 3 = 59
(a) 3 and 6 (b) 8 and 9
(c) 7 and 3 (d) 6 and 9

100. **Select the Venn diagram that best represents the relationship between the given set of classes:**
Circle, Triangle, Quadrilateral
(a)  (b) 
(c)  (d) 

101.


According to the given Venn diagram, the total number of students who play cricket as well as Kabaddi but not football is _____.
(a) V (b) T
(c) R (d) U

102. **In the given figure, the circle represents the graduates, the triangle represents the workers and the square represents the post graduates. Which field represents the graduates and the post graduates but not the workers?**


(a) D (b) C

(c) F (d) G

103. Each of D, E, F, G, H, I and J has a football match to participate on a different day of a week, starting from Monday to Sunday of the same week. E has a match on the day immediately after I. G has a match immediately after H. J has a match immediately after E, but not on Sunday. D has a match on Wednesday. Who among the following has a match on Sunday ?

(a) G (b) F
(c) H (d) E

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

Statements:
All pens are pencils.
No pencil is a cutter.
All cutters are rubbers.
Conclusions:
1. All rubbers are pencils.
2. No pen is a cutter.

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

105. Statements:

A. All mothers are aunt.
B. All aunt are women.
Conclusions:
I. All women are mothers.
II. All women are aunts.

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Neither conclusion I nor II follows

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

Statement:
Villagers have a cooperative attitude towards any stranger.
Conclusions:
I. Urban people have an uncooperative attitude towards strangers.
II. Urbanization destroys our moral values.

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

107. Statement:
A friend of Mrinal said, "The time spent in the zoo by me and Mrinal was fantastic."
Conclusion:
I. Mrinal went to the zoo.
II. His friend is a zoologist.

(a) Neither I nor II follow
(b) Only conclusion I follows
(c) Both conclusion follow
(d) Only II conclusion follows

108. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.
Statement :
On his second visit, the doctor changed the prescription
Assumptions
I. The patient did not show improvement with the earlier prescription
II. The patient did not take the earlier prescription seriously

(a) Both assumptions I and II are implicit
(b) Only assumption I is implicit
(c) Only assumption II is implicit
(d) None of the assumptions is implicit

109. Consider the given statement and decide which of the given assumptions is/are implicit in the statement.
Statement:
"In the latest edition of your book, we misspelled your name of the book cover. We are very sorry Ma'am". A novel editor told his client.
Assumptions:
(I) It is crucial to print the correct name of the author on the book cover
(II) It is not very important to print the correct name of the author on the book cover

(a) Only assumption II is implicit.
(b) Only assumption I is implicit.
(c) Both assumptions are implicit.
(d) Neither assumptions are implicit.

110. Question:
Four boys A, B, C and D live in a colony. Who is heaviest among them?
Statement:
1. A is heavier than C and D.
2. D is lightest among them.
3. B is heavier than A.

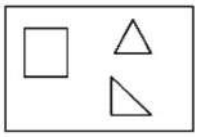
(a) Only statement 2 is sufficient.
(b) Neither statement 1 nor statement 2 is sufficient.
(c) Only statement 1 is sufficient.
(d) Statement 1, 2 and 3 together are sufficient.

111. Question:
Which direction is X from Y?
Statement:
1. X is to the immediate east of W.
2. W is to the immediate south of Y.
(a) Only 1 is sufficient while only 2 is not sufficient
(b) Either only 1 or only 2 is sufficient
(c) Both 1 and 2 together are sufficient
(d) Only 2 is sufficient while only 1 is not sufficient

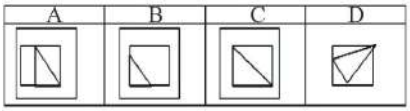
112. All 28 students of a class are standing in a straight row facing north. Jay is 14th from the right end, while Bela is 12th from the left end. How many students stand between Jay and Bela?
(a) 2 (b) 3
(c) 4 (d) 1

113. Six friends P, Q, R, M, N and O prepared together for a class test each one score different marks. Only 3 friends scored less marks than R. N scored less marks than only 1 friend. Only O scored marks between the marks of P and M. Who scored the highest marks ?
(a) R (b) M
(c) P (d) Q

114. Which answer figure is formed using the figure given in the question figure?
Problem figure:

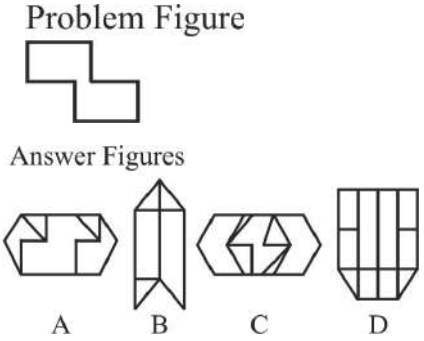


Answer figure :



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

115. The problem figure is embedded in one of the four answer figures. Which of the four figures contains the problem figure?

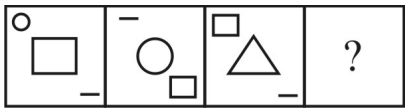


(a) B (b) D (c) A (d) C

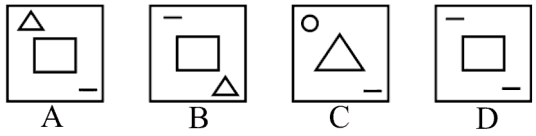
116. Select the option that is related to the third word on the same basis as the second word is related to the first word.
Vacant : Empty :: Sedate : ?
(a) Calm (b) Cat
(c) Car (d) Defect

117. In a certain code language, if 'EXAMINATION' is coded as 89123416354 then how is '456354' written in that code?
(a) NATION (b) STATION
(c) NOTION (d) RATION

118. Select the next figure of following question figure series from answer figure-
Question figure

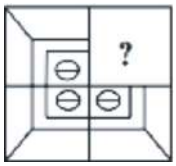


Answer figure



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

119. Select the figure from given options which is complete the given pattern below.



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

120. Statements:
All hats are cap.
All caps are cup.
Conclusions:
1. All cups are cap.
2. All hats are cup.
(a) Neither conclusion 1 nor 2 can be extracted
(b) Only conclusion 1 can be extracted
(c) Either conclusion 1 or 2 can be extracted
(d) Only conclusion 2 can be extracted

SOLUTION : PRACTICE SET- 2

ANSWER KEY

1. (c)	**13. (a)**	**25. (a)**	**37. (d)**	**49. (a)**	**61. (a)**	**73. (a)**	**85.(d)**	**97. (d)**	**109. (b)**
2. (c)	**14. (a)**	**26. (d)**	**38. (c)**	**50. (a)**	**62. (b)**	**74. (c)**	**86. (c)**	**98.(d)**	**110. (d)**
3. (b)	**15. (d)**	**27. (c)**	**39. (b)**	**51. (c)**	**63. (c)**	**75. (d)**	**87. (d)**	**99. (d)**	**111. (c)**
4. (c)	**16. (a)**	**28. (a)**	**40. (c)**	**52. (d)**	**64. (d)**	**76. (c)**	**88. (a)**	**100. (b)**	**112. (a)**
5. (b)	**17. (a)**	**29. (b)**	**41. (c)**	**53. (a)**	**65. (c)**	**77.(c)**	**89. (a)**	**101.(b)**	**113.(d)**
6. (b)	**18. (c)**	**30. (c)**	**42. (b)**	**54. (c)**	**66. (b)**	**78. (d)**	**90. (d)**	**102. (c)**	**114. (c)**
7. (d)	**19. (d)**	**31. (c)**	**43. (c)**	**55. (d)**	**67. (b)**	**79. (b)**	**91. (c)**	**103.(b)**	**115. (c)**
8. (b)	**20. (c)**	**32. (b)**	**44. (a)**	**56. (d)**	**68. (a)**	**80. (d)**	**92. (c)**	**104. (a)**	**116. (a)**
9. (a)	**21. (b)**	**33. (a)**	**45. (c)**	**57. (c)**	**69. (c)**	**81. (c)**	**93. (b)**	**105. (d)**	**117. (c)**
10. (b)	**22. (b)**	**34. (b)**	**46. (b)**	**58. (b)**	**70. (a)**	**82. (d)**	**94. (d)**	**106. (b)**	**118. (a)**
11. (a)	**23. (a)**	**35. (a)**	**47. (a)**	**59. (a)**	**71. (c)**	**83. (d)**	**95. (c)**	**107. (b)**	**119. (a)**
12. (a)	**24. (c)**	**36. (b)**	**48. (c)**	**60. (a)**	**72. (b)**	**84. (a)**	**96. (b)**	**108. (b)**	**120. (d)**

SOLUTION

1. (c)
The famous Indus Valley site Mohenjodaro (Mound of Dead) was firstly excavated by the eminent Indian archeologist R.D Banerjee in 1922. The site is situated on the Bank of river Indus in Larkana district of Punjab (Pakistan).

2. (c)
The Satavahanas issued coins with portraits of their rulers on them. Satavahana's were also the one to issue lead coins. Other than this they also issued silver, copper, bronze coins. This dynasty was founded by Simuka, with its capital Pratishthana.

3. (b)
Al-Biruni is the author of 'Kitab-ul-Hind'. It contains comments on Indian sciences, Indian religious beliefs, customs, and social organization in the 11th century. Al-Biruni was an Iranian scholar and polymath from Khwarezm, modern day Uzbekistan and Turkmenistan. Most of his works including Kitab-ul-Hind are in Arabic. It is a comprehensive treatise divided into eighty chapters on the basis of topics like religion and philosophy, festivals, astronomy, alchemy, customs and practices, social lifeweight and measurement methods, sculpture and law of sciences, etc.

4. (c)
Tomb of Sher Shah Suri is in the Sasaram town of the Bihar India. The system of tri-metalism which came to characterise Mughal coinage was introduced by Sher Shah.

Ruler	**Place of the tomb**
Babur	Kabul
Humayun	Delhi
Akbar	Sikandra (Agra)
Jahangir	Shahdara (Lahore)
Shah Jahan	Agra
Aurangzeb	Aurangabad

5. (b)
In 1600, a group of London merchants led by Sir Thomas Smythe petitioned Queen Elizabeth I to grant them a royal charter to trade with the countries of the east, and so, the company of Merchants of London trading with the East Indies or East India Company came into existence. At the same time, as Queen Elizabeth I was signing the royal charter for East India Company, the Mughal emperor Akbar (1556 to 1605) was the ruler of India.

6. (b)
The most important contributions of the British to India in 1853 which enabled people to travel long distance was first passenger train started from Mumbai (Bori Bunder) to Thane. Under tenure of Lord Dalhousie, it was started on 16 April, 1853 and ran for 34 km with 400 people.

7. (d)
Servants of the People Society was founded by Lala Lajpat Rai in 1921 at Lahore, which was inaugurated by Mahatma Gandhi. The objective of the society is to enlist and train national missionaries for the service of the motherland. It is their duty to work for the educational, cultural, social, economic and political advancement of the country under the supervision of the society.

8. (b)
During the period of Viceroy Lord Harding II Delhi Durbar was organised in 1911 AD in which King George V & Queen Mary were invited. The popular tourist destination of India, Gateway of India was erected to commemorate the landing of King George V and Queen Mary at Apollo Bunder. Gateway of India is situated in Mumbai & it was laid on 31 March 1911, later it was used as symbolic ceremonial entrance to India for viceroy and New Governors of Bombay.

9. (a)
The assembly first met on 9 December 1946. Dr Sachchidanand Sinha was the temporary president in the first meeting. After elections were held-Dr. Rajendra Prasad was a elected as the President and H C Mukherjee was elected as vice president. B. N . Rao was appointed as the constitutional advisor of the assembly.

10. (b)
When a President is to be impeached for violation of the Constitution; the charge shall be preferred by either House of Parliament. The impeachment charges are signed by 1/4 of the member of the house. A 14 day notice is given to the President of India. Both House of Parliament pass the impeachment charge with the 2/3 majority (with Separate investigation), and then the President is removed. This procedure is explained in Article 61.

11. (a)
The Protem speaker presides over the first sitting of the Lok Sabha and administers the oath of office to the newly elected MPs.
The duty of protem speaker is to conduct the vote for the Speaker and Deputy speaker. He also administers the floor test.

12. (a)
According to Article 239, a Lieutenant Governor is the Constutitonal head of administration of five of eight Union Territories. Lieutenant Governor is appointed by the President of India for a term of 5 year. On other hand, the other three U.T. (Daman and Diu, Dadra and Nagar Haveli and Chandigarh) are governed by an administrator.

13. (a)
74^{th} Amendment Act of India is related to the Urban local bodies. The 74^{th} Constitutional Amendment Act was passed to constitutionalize the system of urban local government also known as Municipalities. It provides a framework for the decentralization of obligations and duties to the municipal bodies at different levels of a state.

14. (a)
Under Article 324(2) of the Constitution of India, the President of India is empowered to appoint the Chief Election Commissioner and the Election Commissioners. They have a tenure of six years or upto the age of 65 years whichever is earlier.

15. (d)
the preamble of Indian Constitution has been amended by 42^{nd} constitutional amendment act 1976 which added socialist, secular and integrity three new words.

16. (a)
Federalism is a system of government in which the same territory is controlled by two levels of government i.e. Central Government and State Government. Example – United Sates.

17. (a)
Kepler-452b is sometimes called “Earth's Cousin” or “Earth 2.0”, and some astronomers have nicknamed it “Coruscant”, which is the name of the home of the Galactic Empire in the Star Wars films.

18. (c)
When the earth comes between the sun and the Moon, the light of sun does not reach the Moon and due to shadow of the earth, there is darkness over the Moon. This situation is called lunar eclipse. The lunar eclipse always occurs on the full Moon night.

19. (d)
The troposphere is the lowermost layer of the atmosphere. Its average height is 13 km and extends roughly to a height of 8 km near the poles and about 18 km at the equator. The Thickness of the troposphere is greatest at the equator because heat is transported to great heights by strong convectional currents.

20. (c)
The Taklamakan Desert, also known as the "Place of Ruins" or the "Sea of Death", is the largest desert in China, at over 620mi (1000 km) long an 250 mi (400 km) wide.

21. (b)
Viticulture in the Mediterranean region has been improved by agronomic methods based on ecophysiological and genetic knowledge of the species and varieties cultivated. Viticulture is the science related to production and study of grapes.

22. (b)
Garo, Khasi and Jaintia Hills are part of the Peninsular plateau.

23. (a)

Dam (Hydroelectric)	Constructed on River	Location
Tehri Dam, Koteshwar Dam	Bhagirathi	Tehri Garhwal, Uttarakhand
Ramganga Dam	Ramganga	Garhwal, Uttarakhand
Ichari Dam	Tons	Dehradun, Uttarakhand
Koyna Dam	Koyna	Satara, Maharashtra
Gerusoppa Dam	Sharavathi	Uttara Kannada, Karnataka
Chamera Dam	Ravi	Chamba, Himachal Pradesh

24. (c)

Railway Zone	Zonal headquater
Central Railway	Mumbai
Eastern Railway	Kolkata
North Central Railway	Prayagraj
North Eastern Railway	Gorakhpur
North Western Railway	Jaipur
Western Railway	Churchgate
West Central Railway	Jabalpur
East Coast Railway	Bhubaneswar
Northern Railway	Baroda House, New Delhi

25. (a)
Increasing returns to scale: If increase in outputs are proportionately more than an increase in quantity of all inputs, returns to scale are said to be increasing. If a firm doubles its inputs and the output increases by 2½ times then the production function exhibits increasing returns to scale.

26. (d)
Financial Inclusion is the process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as weaker sections and low income groups in particular at an affordable cost in a fair and transparent manner by mainstream institutional.

27. (c)
Excise duty is a form of indirect tax that is levied by the Central government of India for production, sale, or license of certain goods.

28. (a)
Gift city is planned by Government in Ahmedabad city. This will be the first Smart city of the country. GIFT full form is Gujarat International Finance Tech City.

29. (b)
The Green Revolution within India led to an increase in agricultural production, especially in Haryana, Punjab, and Uttar Pradesh.

30. (c)
The first Commonwealth Games were held in 1930 in Hamilton, Canada. The 2022 Commonwealth Games were held in Birmingham, England.

31. (c)
Kochi in Kerala, nick named the land of God's Own country set up India's first oceanarium in 2010. An oceanarium is a simulated ocean and contains all living organisms found in the water body inducing large species like Whales and Shark.

32. (b)
Rajendra Singh is an Indian water conservationist and environmentalist from Alwar district, Rajasthan in India, he is also known as "Waterman of India".

33. (a)
Sazo is an ancient festival celebrated in Kinnaur district of Himachal Pradesh.

34. (b)
Kumbh Mela is a major pilgrimage and festival in Hinduism. It is celebrated in a cycle of approximately 12 years at four river bank pilgrimage sites namely Allahabad (Prayagraj), Haridwar, Nashik and Ujjain.

35. (a)
Famous dances and their concerned states are as follow:

Dance	State/Region
Kuchipudi	Andhra Pradesh
Bihu	Assam
Bhangra	Punjab
Garba	Gujarat
Kathak	Uttar Pradesh
Tarangmel	Goa
Kathakali	Kerala
Odissi	Odisha
Bharatnattayam	Tamilnadu

36. (b)

Quantity	SI - Unit
Power	Watt
Force	Newton
Pressure	Pascal
Resistance	Ohm

37. (d)
When the compressed spring is released the stored potential energy is converted into kinetic energy and a transfer of momentum takes place between the spring and the object.

38. (c)
Frictional force is always opposite to the relative motion of the body. When a body is dragged along the rough surface, the frictional force will be acting in the direction opposite to the displacement. The angle between the friction force and the displacement of the body will 180^0. Thus, the work done by the frictional force will be negative.

39. (b)
Sound is a form of energy that arises due to vibration or disturbance and is heard by reaching the audio senses. It is necessary to have a medium for transmission of sound. There is no transmission of sound in vacuum.

40. (c)
When a pencil is immersed in water then it appears bent because of refraction of light.

41. (c)
In nature, the mixture is both homogeneous and heterogeneous. The mixture has a uniform composition throughout the solution is called homogeneous mixture. For example- mixture of salt in water and mixture of sugar in water. While the mixture has a non-uniform composition throughout the solution is called heterogeneous mixture. Example- mixture of sand and water

42. (b)
Atoms of different substances or elements that have the same atomic mass but have different atomic numbers, such elements are called **Isobars**. In isobars, the nucleus (the sum of the number of protons and neutrons) is the same and the number of protons is different. Isotopes have the same number of protons.

43. (c)
Alkali is a compound that reacts with acid to give water and salts. It turns red litmus to blue litmus and is bitter in taste. Therefore the statement given in option (c) is not the property of alkali. The aqueous solution of the acid converts blue litmus to red.

44. (a)
Mendeleev made the periodic table by classifying the elements based on their atomic weights. In which some places were left blank, although Mendeleev had already predicted their chemical properties etc. Later on Mendeleev's periodic table arranged the elements on the basis of their atomic numbers, letter germanium was placed with titanium in IV group and fourth period.

45. (c)
Ethyl mercaptan is used to detect LPG leakage easily. The chemical formula of ethyl mercaptan is C_2H_5SH.

46. (b)
Edaphology $\rightarrow$ Study of the effect of soil on living things

Agrobiology $\rightarrow$ Study of soil science in plant nutrition and its application to crop production.

Desmology $\rightarrow$ Branch of anatomy which concerns ligaments.

47. (a)
Amoeba and Paramecium are both unicellular organisms undergoing a similar method of digestion. The only difference is Amoeba can take up food from the entire cell surface and Paramecium can take up food only through special spot.

48. (c)
Urethra is the tube through which urine leaves the body. It discharges urine from the bladder. It is not the part of female reproductive system.
The female reproductive organs include several key structures, such as the ovaries, uterus, fallopian tubes vagina, and vulva. These organs are involved in fertility, conception, pregnancy, and childbirth.

49. (a)
Rhizopus reproduce through spore formation. Like the class fungus, members of this class are achlorophyllous. They have thalloid like body structure, that is, there is no differentiation in their body tissues. In Hydra and Planaria, reproduction occurs through asexual reproduction.

50. (a)
Cytokinin promotes cell growth and cell differentiation in plants.

51. (c)
Given, 504x5y3
Divisibility rule of 11:- If the difference of the sum of digits at even place and at odd place is zero or divisible by 11 then the given number will be divisible by 11.
504x5y3
$(0 + x + y) – (5 + 4 + 5 + 3)$
$x + y – 17 = 0$
$x + y = 17$
Hence, Sum of $x + y = 17$

52. (d)
Given –
$x + y = 11$
$(–1)^x + (–1)^y = ?$
Note- When the sum of two whole numbers is an odd number then one will be even and second will be odd.
Hence,
$(–1)^{even/odd} + (–1)^{odd/even} = 0$

53. (a)
Total number of positive integers which is divisible by

$3 = \frac{100}{3} = 33$

Total number of positive integers which is divisible by

$4 = \frac{100}{4} = 25$

Total number of positive integers which is divisible by

$12 = \frac{100}{12} = 8$

Hence, the total number of positive integers which is divisible by 3 or 4.

$= (33 + 25 - 8)$

$= 50$

54. (c)
From question,

$\frac{3}{9} = 0.33 \qquad \frac{8}{14} = 0.57$

$\frac{5}{8} = 0.62 \qquad \frac{4}{9} = 0.44$

The smallest fraction is $\frac{3}{9}$

55. (d)

$2\frac{1}{25} = \frac{51}{25} = 2.04$

56. (d)
Square root of 34596

	186
1	34596
+1	1
28	245
+8	224
366	2196
6	2196
	××××

So, the required square root of the given number is 186.

57. (c)

$x = \frac{\sqrt{3}+1}{\sqrt{3}-1}, y = \frac{\sqrt{3}-1}{\sqrt{3}+1}$

$3(x+y) = 3\left(\frac{\sqrt{3}+1}{\sqrt{3}-1} + \frac{\sqrt{3}-1}{\sqrt{3}+1}\right)$

$= 3\left(\frac{3+1+2\sqrt{3}+3+1-2\sqrt{3}}{2}\right)$

$= 12$

58. (b)

$\left(1+\frac{1}{x}\right)\left(1+\frac{1}{x+1}\right)\left(1+\frac{1}{x+2}\right)\left(1+\frac{1}{x+3}\right)$

$= \left(\frac{x+1}{x}\right)\left(\frac{x+1+1}{x+1}\right)\left(\frac{x+2+1}{x+2}\right)\left(\frac{x+3+1}{x+3}\right)$

$= \frac{x+1}{x} \times \frac{x+2}{x+1} \times \frac{x+3}{x+2} \times \frac{x+4}{x+3}$

$= \frac{x+4}{x}$

59. (a)
Let the population of the city before the war be x.
According to the question,

$x \times \frac{80}{100} \times \frac{95}{100} = 15200$

$x = \frac{15200 \times 100 \times 100}{80 \times 95}$

$x = \frac{15200000}{760}$

$x = 20000$

60. (a)
Let total votes = 100%
Votes obtained by losing candidate = 48%
Votes obtained by winning candidate = 52%
Difference of obtained votes = 52 – 48 = 4%
As per question,
Difference of votes = 3%
It means that 1% votes are illegal/invalid

$\therefore$ 3% → 6000

1% (Invalid votes) = 2000

61. (a)
According to the question,

28% = ₹8960

$\therefore 100\% = \frac{8960}{28} \times 100 = 32000$

So, the monthly salary = ₹32000

62. (b)
Let initial cost price of the item (C.P.) = 100

↓ + 74% Profit

Selling price (S.P.) = 174

According to the quesiton,
When CP increase 50%

Cost Price = 150 ┐
24 Profit
But, Selling price is same = 174 ┘

New Profit% = $\frac{24}{150} \times 100$

= 16%

63. (c)
Total Cost Price of first washing machine

= 8000 + 500

= ₹8500

Profit on first washing machine $= 8500 \times \frac{20}{100}$

= ₹1700

$SP_1 = CP_1 + Profit$

= 8500+1700 = ₹10200

Loss on second washing machine = $CP_2 \times \frac{10}{100}$

$= 10200 \times \frac{10}{100}$

= ₹1020

Because, Selling Price of first washing machine (SP_1) = Cost Price of second washing machine (CP_2)

$\therefore$ $SP_2 = CP_2 - Loss$

= 10200 – 1020

= ₹9180

Overall Profit of Himani = $SP_2 - CP_1$

= 9180 – 8500 = ₹680

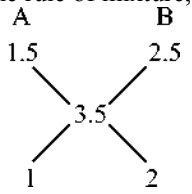
64. (d)
We know that,
Single equivalent discount of three successive discount of x, y and z = $-(x+y+z)+\frac{(xy+yz+zx)}{100}-\frac{(xyz)}{10000}$
Equivalent discount % = –
$-(10+15+20)+\frac{(150+300+200)}{100}-\frac{(10\times15\times20)}{1000}$
= –45 + 6.5 – 0.3
⇒ – 38.8% (– sign denotes discount)
Hence, 38.8% is correct.

65. (c)
Let Amount found by x = 4a
and amount found by y = 3a
According to the question
3a = 2400
a = 800
Hence total initial amount = 7a = 7 × 800
= ₹ 5600

66. (b)
∴ Share of Anil and Aditya = 11 : 13
Share of Aditya = $\frac{13}{24}\times48000$
=₹26000

67. (b)
Amount of milk in I[st] mixture-
$90\times\frac{4}{5}=72$ litre
Amount of milk in second mixture
$90\times\frac{3}{5}=54$ litre
Intended difference = (72 – 54) = 18 litres

68. (a)
From the rule of mixture,



Hence, the required ratio = 1 : 2

69. (c)
Given,
P = ₹ 1280
R = 5%
T = 3 years
Simple Interest = $\frac{P\times R\times T}{100}$
$=\frac{1280\times5\times3}{100}$
= ₹ 192

70. (a)
Given- Principal (P) = ₹ 5000
Time (t) = 2
Rate (r) = 9%
Amount = Principal $\left(1+\frac{\text{Rate}}{100}\right)^{\text{Time}}$
$=5000\left(1+\frac{9}{100}\right)^2$
$=5000\times\frac{109}{100}\times\frac{109}{100}$
$=\frac{5\times109\times109}{10}=5940.5\approx$ ₹ 5940

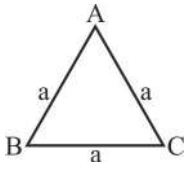
71. (c)
Sum of 7 members = 7 × 53 = 371
According to the question,
Sum = 371 + 58 – 16
Correct Average $=\frac{413}{7}=59$

72. (b)
When distance is equal.
$s_1\times t_1=s_2\times t_2$
$75\times8=6\times s_2$
$s_2=\frac{75\times8}{6}$
s_2 = 100 km/h

73. (a)
Speed of the train = 45 km/hr
$\text{Time}=\frac{64}{3600}\text{hr}$
$=\frac{4}{225}\text{hr}$
Distance = Speed × Time
$=45\times\frac{4}{225}$
$=\frac{3\times4}{15}=0.8\,\text{km}$

74. (c)
According to the question,
$\text{Speed}=\frac{200+300}{30}=\frac{500}{30}=\frac{50}{3}$ m/s
Time taken to cross a person = $\frac{\text{Distance}}{\text{Speed}}$
$=\frac{200}{\frac{50}{3}}=12$ seconds

75. (d)
Given,



The area of An equilateral triangle is $25\sqrt{3}$ cm^2
So, $\frac{\sqrt{3}}{4}a^2=25\sqrt{3}$
$a^2=100$
a = 10
Hence, the length of each side of the triangle is 10 cm