Sainik School
Entrance Exam
Solved Paper-2024
(Class-IX)

Note :-

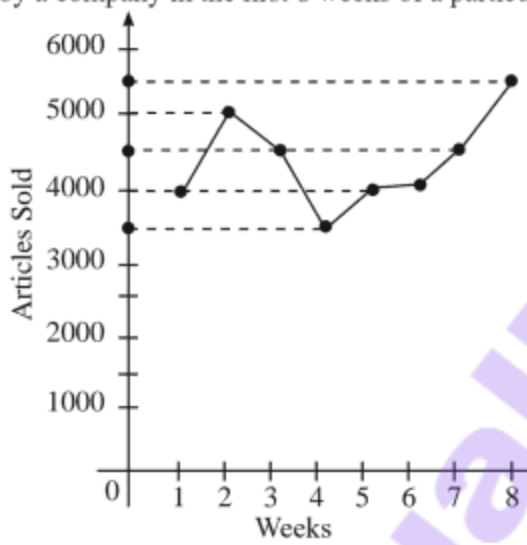
1. This Question Paper Booklet contains five Sections. Section "A" Mathematics contains 50 questions of 4 marks each. Section "B" Intelligence Section "C" English, Section "D" General Science AND Section "E" Social Studies contain 25 questions each of 2 mark per question. In all, the paper consists of 150 questions for a total of 400 marks. Answer all questions.
2. The test is of 3 hours (180 minutes) duration.

SECTION-A: MATHEMATICS

1. If the area of a circle is 2464 m^2, then the radius of the circle (in cm), is (use $\pi = \frac{22}{7}$):

   (a) 24 (b) 26
   (c) 28 (d) 56

2. The given line graph shows the number of articles sold by a company in the first 8 weeks of a particular year.



   What is the average number of articles sold in 8 weeks?

   (a) 5892 (b) 4875
   (c) 4375 (d) 2945

3. If $a = \sqrt{2} + 1$, $b = \sqrt{3} - \sqrt{2}$ and $c = \sqrt{6} + 2\sqrt{2}$ then the value of $a^2 + b^2 - c$, is:

   (a) 8 (b) $8 - 3\sqrt{6}$
   (c) $8 + 4\sqrt{2}$ (d) $11 - 3\sqrt{6}$

4. $(2.5a - 3.5b)^2 - (3.5a - 2.5b)^2 =$

   (a) $-6a^2 - 6b^2$ (b) $6b^2 - 6a^2$
   (c) $6a^2 + 6b^2$ (d) $6a^2 - 6b^2$

5. If 30% of (A + B) = 50% of (A – B), then A: B is:

   (a) 3 : 5 (b) 5 : 3
   (c) 4 : 1 (d) 1 : 4

6. If $\left(a^8 + \frac{1}{a^8}\right)\left(a^4 + \frac{1}{a^4}\right)\left(a^2 + \frac{1}{a^2}\right)\left(a + \frac{1}{a}\right)\left(a - \frac{1}{a}\right) = a^b - \frac{1}{a^b}$, then value of b, is:

   (a) 8 (b) 16
   (c) 32 (d) 64

7. In a fruit store, there are $4\left(a^2 - \frac{2}{3}b^2\right)$ boxes and in each box there are $\left(\frac{3}{4}a^2 + 3b^2\right)$ apples. How many apples are there in the store?

   (a) $3a^4 + 10a^2b^2 - 8b^4$
   (b) $3a^4 + 12a^2b^2 + 8b^4$
   (c) $12a^4 + 10a^2b^2 + 6b^4$
   (d) $12a^4 + 12a^2b^2 - 6b^4$

8. If $x = \frac{4ab}{a+b}$, then the value of $\frac{x+2a}{x-2a} + \frac{x+2b}{x-2b}$, is:

   (a) $\frac{2ab}{(a+b)2}$ (b) 2
   (c) 4 (d) $\frac{4ab}{(a+b)2}$

9. If 8 is multiplies with 7 more than a number, it becomes the same as 15 is added to 3 times the same number. This can be represented by which of the following equations?

   (a) $7(8 + x) = 3x + 15$
   (b) $56 + x = 3x + 15$
   (c) $8(7 + x) = 15 + 3x$
   (d) $56x + 1 = 3(x+5)$

10. $\{44(x^4 - 5x^3 - 24x^2)\} \div \{11x\,(x - 8)\} =$

    (a) $4x\,(x + 3)$ (b) $7x\,(x + 2)$
    (c) $5x\,(x + 4)$ (d) $(x + 2)\,(x + 3)$

11. In a polygon, sum of interior angles is 360°. Its diagonals are equal but not all the sides. What is that polygon?

    (a) Parallelogram (b) Rhombus
    (c) Rectangle (d) Square

12. If circumference of a circle is 88 cm, then the area of the circle (in cm^2) is (use $\pi = \frac{22}{7}$)

    (a) 600 (b) 612
    (c) 616 (d) 620

13. Numbers 1 to 40 are written on different cards (one number on one card) and kept in a box. One card is picked up from the box. What is the probability that the card shows a perfect square number?

(a) $\frac{1}{8}$ (b) $\frac{12}{5}$

(c) $\frac{3}{20}$ (d) $\frac{1}{10}$

14. 6 identical pipes can fill a tank in one hour and 30 minutes. How long will it take to fill the tank if 3 pipes stop working after filling half the tank?
(a) 135 minutes (b) 125 minutes
(c) 110 minutes (d) 130 minutes

15. A certain number of men can complete a work in 50 days. If there were 6 men more, the work can be finished in 10 days less. The number of men originally working are:
(a) 36 (b) 30
(c) 28 (d) 24

16. If one angle of a triangle is 63° and remaining two angles are in the ration 1: 2, then the measure of the largest angle of the triangle, is:
(a) 63° (b) 70°
(c) 78° (d) 82°

17. If a : b : c : d = 1 : 2 : 3 : 5, then the value of $\frac{a^2+b^2+c^2}{b^2+c^2+d^2}$, is:
(a) $\frac{7}{19}$ (b) $\frac{19}{5}$
(c) $\frac{8}{17}$ (d) $\frac{4}{21}$

18. Atul drives a car at a speed of 48 km/h and starts his journey for his hometown 132 km away from residence at 9 am. At what time, will he reach his hometown?
(a) 11 am (b) 11 : 20 am
(c) 11 : 40 am (d) 11 : 45 am

19. If the points A (3, 0) and B (0, 4) are joined, then what will be the area of the triangle formed by AB and the coordinate axes?
(a) 5 unit^2 (b) 6 unit^2
(c) 7 unit^2 (d) 12 unit^2

20. If in polyhedron, V stands for number of vertices, F stands for number of faces and E stands for number of edges, then which of the following cannot be true for a polyhedron?
(a) V = 8 F = 6 E = 12 (b) V = 5 F = 5 E = 8
(c) V = 6 F = 5 E = 10 (d) V = 4 F = 4 E = 6

21. All faces of a cube of side 5 cm are red painted and is cut into smaller cube of side one cm. What is the total volume of smaller cubes formed, which have no face with red colour?
(a) 54 cm^3 (b) 45 cm^3
(c) 34 cm^3 (d) 27 cm^3

22. What is the greatest value of A for which the 6-digit number 326A50 is divisible by 3?
(a) 2 (b) 6
(c) 8 (d) 9

23. $\frac{7}{3}+\frac{7}{3}\div\frac{14}{3}-\frac{1}{7}\div\left(-\frac{14}{49}\right)=$
(a) $\frac{7}{3}$ (b) $\frac{3}{2}$
(c) $\frac{10}{3}$ (d) $\frac{1}{2}$

24. $\sqrt{\sqrt[3]{27}}-2\times\sqrt[3]{8}+\sqrt[3]{125}=$
(a) 4 (b) 3
(c) 2 (d) 1

25. The average of first five prime numbers is:
(a) 3.6 (b) 5
(c) 5.2 (d) 5.6

26. Two cubes have their surface areas in the ratio 4: 9. What is the ratio of their volumes?
(a) 64 : 729 (b) 8 : 27
(c) 9 : 4 (d) 2 : 3

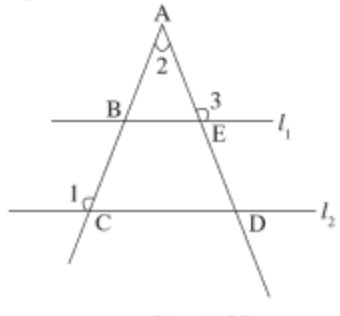
27. 4 equal cuboids with dimensions 6 cm × 10 cm × 4 cm are joined side by side. The volume of the solid so formed, is:
(a) 240 cubic cm (b) 480 cubic cm
(c) 864 cubic cm (d) 960 cubic cm

28. Ritu is four years younger than her brother Varun. After 5 years, the sum of their ages will be 70 years. What is the present age of Ritu?
(a) 30 years (b) $25\frac{1}{2}$ years
(c) 28 years (d) 32 years

29. Out of a certain number of marbles, $\left(\frac{3}{5}\right)^{th}$ are red and half of the remaining are green. If the number of green marbles is 12m then how many are red marbles?
(a) 24 (b) 36
(c) 9 (d) 18

30. How many sides does a regular polygon have if each of its interior angle is 156°?
(a) 9 (b) 12
(c) 15 (d) 20

31. In a figure, L1 is parallel to L2 and <1 = 115°, < 2 = 40°, then < 3 is equal to:

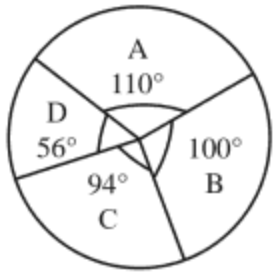


(a) 115° (b) 110°
(c) 105° (d) 100°

32. Survey was done on 900 school children about their choice of TV programmes

A. Sports B. Comedy shows
C. Serials D. News

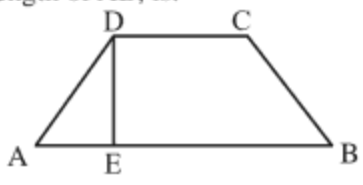
Their choices are shown in the Pie chart.



How many children showed interest for Comedy shows?

(a) 235 (b) 250
(c) 265 (d) 275

33. ABCD is a trapezium in which AB || CD and DE | AB. If AB = 2 DC, DE = 12 cm and area of ABCD = 144 cm^2, then the length of AB, is:



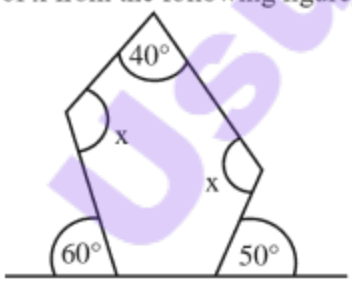
(a) 16 cm (b) 10 cm
(c) 8 cm (d) 20 cm

34. Which of the following statements are true?

A. Cube of any odd number is odd.
B. Cube of a single digit number cannot be a single digit number
C. A perfect cube may end with exactly two zeroes.
D. Cube of a 2-digit number has at least 3 digits.

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

35. The value of x from the following figure, is:



(a) 35° (b) 70°
(c) 125° (d) 250°

36. Madan scored marks given in the following table. Every paper was of 100 marks.

Maths	English	Hindi	Science	Social Science
95	72	80	68	65

His average marks per subject is:

(a) 72 (b) 74
(c) 75 (d) 76

37. Which of the following triangles with given sides is *not* a right-angled triangle?

A. 3, 4, 5 B. 5, 12, 13
C. 6, 7, 8 D. 6, 8, 10

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

38. If two perpendicular sides of a triangle are 9 cm and 40 cm and length of the side opposite to right angle is x cm, then the value of x, is:

(a) 39 (b) 40
(c) 41 (d) 42

39. The value of a car depreciates at 10% per annum. Jayant bought the car for ₹ 8,00,000. What will be its value after 3 years?

(a) ₹ 5,83,000 (b) ₹ 5,83,890
(c) ₹ 5,92,000 (d) ₹ 5,83,200

40. The median of the data set 3,11, 8, 9, 6, 7, 12, is:

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

41. The average height of 6 boys is 5' 3". If one boy is 6' 1" tall, then the average height of remaining boys, is:

(a) 5' (b) 5' 1"
(c) 5' 2" (d) 5' 4"

42. By which smallest number, 2700 must be multiplies so that the new number is a perfect cube?

(a) 6 (b) 10
(c) 15 (d) 18

43. The number of zeros at the end of number $1 \times 2 \times 3 \times 4 \times \ldots\ldots \times 20$, is:

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

44. The cost of 5 kg apples is ₹ 425; the cost of 12 dozen oranges is ₹ 744 and the cost of 4 kg mangoes is ₹ 480. What is the total cost of 8 kg apples, 8 dozen oranges and 8 kg mangoes?

(a) ₹ 1, 416 (b) ₹ 2, 136
(c) ₹ 1, 826 (d) ₹ 2, 756

45. Pawan bought a second hand Tv for ₹ 4, 300. He spent ₹ 500 on its repair and sold it for ₹ 5, 856. In these transactions, his gain was:

(a) 20% (b) 21%
(c) 22% (d) 24%

46. There are 120 students in a hostel and there is food provision for 25 days. How long would these provisions last out if 30 more students join the group?

(a) 30 days (b) 22 days
(c) 20 days (d) 17 days

47. If an item sold at ₹ 1, 292 after giving a discount of 15%, then the marked price of the item is:

(a) ₹ 1, 480 (b) ₹ 1, 500
(c) ₹ 1, 520 (d) ₹ 1, 530

48. 6 kg of metal A and 24 kg of metal B are melt together to form an alloy. The percentage of metal A in the alloy is:
(a) 20% (b) 25%
(c) 33.33% (d) 30%

49. What smallest number should be subtracted from 3142 to get a perfect square?
(a) 5 (b) 6
(c) 7 (d) 8

50. If alphabets A, B, C, … are represented by numbers 1, 2, 3, …., the value of $\sqrt{(Z-A)}$, is:
(a) 5 (b) 4
(c) 7 (d) 11

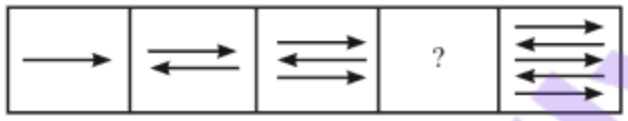
SECTION-B: INTELLIGENCE

51. Find the next pattern in the sequence

(a)  (b) 

(c)  (d) 

52. Replace the question mark in the following series:



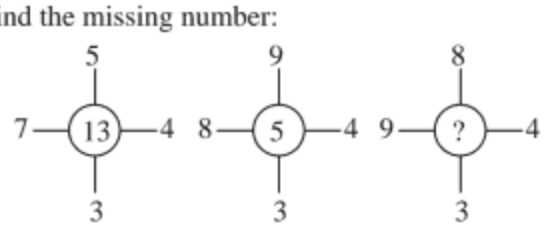
(a)  (b) 

(c)  (d) 

53. Arrange the following words as per order in the dictionary.
A. Consume B. Consciousness
C. Conscience D. Conservation
E. Consequence
Choose the correct answer from the options given below.
(a) C, B, A, E, D (b) C, A, B, E, D
(c) C, E, B, D, A (d) C, B, E, D, A

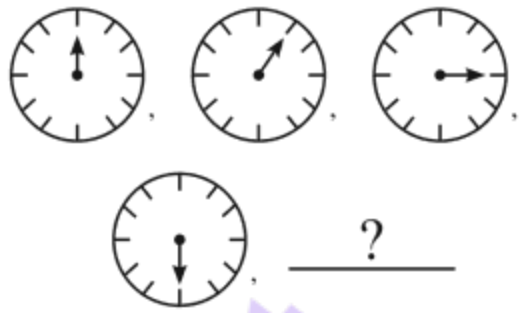
54. Find the odd one out:
(a) 13 (b) 17
(c) 37 (d) 63

55. Find the missing number:



(a) 12 (b) 14
(c) 15 (d) 18

56. Find the next pattern in the sequence:



(a)  (b) 

(c)  (d) 

57. Find the missing number:

(a) 25 (b) 37
(c) 41 (d) 47

58. Complete the analogy:
3 : 11 :: 7 : ?
(a) 42 (b) 29
(c) 38 (d) 51

59. Complete the following analogy:
Y : 2 :: T : ?
(a) 9 (b) 7
(c) 8 (d) 12

60. A number is greater than 3 but less than 8. Also, it is greater than 6 but less than 10. The number is:
(a) 5 (b) 6
(c) 7 (d) 8

61. If DELHI can be coded as CCIDD, how would you code BOMBAY?
(a) AJMTVT (b) AMJXVS
(c) MJXVSU (d) WXYZAX

62. Amit is standing in the North of Bob who is in the West of Chetan on a ground. The position of Amit with respect to Chetan is in the direction
(a) East (b) North West
(c) North south (d) North

63. Complete the analogy.
MAN : PDQ :: WAN : ?
(a) NAW (b) ZDQ
(c) YDQ (d) YQD

64. Complete the analogy.
25 : 125 :: 36 : ?
(a) 126 (b) 206
(c) 216 (d) 318

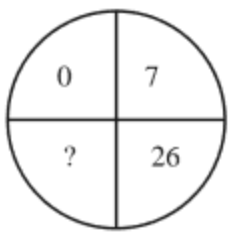
65. Find the odd one out:
(a) Pen (b) sharpener
(c) Scale (d) Stationery

66. How many such 5's are there in the following number sequence each of which is immediately preceded by 3 or 4 but not immediately followed by 8 or 9?
3595455358456735754523
(a) 3 (b) 4
(c) 5 (d) 6

67. Identify the correct water image of the following figure.

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

68. Find the missing number out of the options given below:



(a) 45 (b) 60
(c) 63 (d) 76

69. Arrange the following in a logical order
A. Day B. Week
C. Second D. Minute
E. Hour
Choose the correct answer from the options given below.
(a) A, B, C, D, E (b) C, D, E, B, A
(c) C, D B, E, A (d) C, D, E, A, B

70. Complete the analogy. Lizard: Reptile:: Whale:?
(a) Rodent (b) Amphibian
(c) Mammal (d) Ocean

71. Find the missing number in the following Series:
1, 9, 25, 49, ?, 121
(a) 64 (b) 81
(c) 91 (d) 100

72. Arrange the following in the chronological order.
A. Birth B. Death
C. Funeral D. Marriage
E. Education
Choose the correct answer from the options given below.
(a) A, E, D, C, B (b) A, C, D, E, B
(c) A, E, D, B, C (d) A, E, B, D, C

73. Find the odd one out:
(a) BCD (b) KMN
(c) GHÊ (d) WXY

74. Anil, Bobby, Chetan, Deepak and Elen are five friends. Anil is shorter than Bobby but taller than Elen. Chetan is the tallest. Deepak is shorter than Bobby and taller than Anil. Who is in the middle with respect to their heights?
(a) Bobby (b) Chetan
(c) Deepak (d) Anil

75. If February 1, 2004 was Wednesday, what day was March 12th 2004?
(a) Sunday (b) Saturday
(c) Tuesday (d) Monday

SECTION-C: ENGLISH

Spot the error:

76. He is | the carpenter | who | made my chair.
(A) (B) (C) (D)
(a) A (b) B
(c) C (d) No error

77. Change the given sentence to indirect narration:
Rita said to me, "I never eat junk food."
(a) Rita told me that she never ate junk food.
(b) Rita said to me that she never eats junk food.
(c) Rita said that she never ever eats junk food.
(d) Rita told me that I never ate junk food.

78. Change the given sentence to indirect narration:
They said to Rahul, "We are watching cricket."
(a) They said Rahul, that they are watching cricket.
(b) They told Rahul that they were watching cricket.
(c) They told Rahul that they are watching cricket.
(d) They told Rahul that they have been watching cricket.

79. Superlative degree of 'Top' is:
(a) Topest (b) Topmost
(c) Toppest (d) Most Top

80. Choose the correct option indicating the meaning of the given sentence:
She is too slow to be a runner.
(a) She is so slow to be a runner.
(b) She is slow to run
(c) She is so slow that she cannot be a runner.
(d) She is too slow, 'she couldn't be a runner.

81. Choose the correct Question Tag for the following sentence:
It is quite hot outside today?
(a) is it (b) isn't it
(c) doesn't it (d) aren't it

82. Choose the correct conjunction for the following:
This is the ring ____ she gifted me.
(a) beside (b) where
(c) that (d) if

83. Fill in the blank:
Neither she ____ he was present in the class.
(a) nor (b) or
(c) and (d) but

84. Fill in the blank:
she lost her daughter.
(a) Hello! (b) Alas!
(c) Hurrah! (d) Look!

85. Choose the most appropriate option;
Reema is too generous not to help the needy.
(a) Reema is so generous not to help the needy.
(b) Reema is so generous that she can help the needy.
(c) Reema is so generous enough to help the needy.
(d) Reema is so generous she will help.

86. Change the given sentence to Passive Voice:
People speak different languages all over the world.
(a) Different languages are spoken all over the world.
(b) Different languages were being spoken all over the world.
(c) Different languages was spoken all over the world.
(d) Different languages were spoken all over the world.

87. Choose the correct meaning of the given Idiom / Phrase:
'Helter skelter'
(a) Natural and simple
(b) Here and there
(c) Merits and demerits
(d) Arrogant and naughty

88. Choose the correct meaning of the following idiom:
'A wolf in a sheep's clothing'
(a) A very relatable person
(b) A weak person
(c) A fair and honest person
(d) A dangerous person pretending to be a harmless person

89. Choose the correct option from the following:
Her uncle who ____ to her was____.
(a) had been kind, dead
(b) was dead, kind
(c) is dead, kind
(d) has been kind, dead

90. Fill in the blank with correct preposition:
I saw him climbing ____ the tree to pluck mangoes.
(a) upon (b) on
(c) up (d) over

91. Choose the correct spelt, word:
(a) Autonomus (b) Autonomous
(c) Autonemous (d) Autenomus

92. Choose the correct sentence having an adverb:
(a) He waited long for me.
(b) He went on a long journey.
(c) He came by an early flight.
(d) He is of my near relation.

93. Change into passive voice:
'Please don't disturb me.'
(a) You are requested not to disturb me.
(b) You are requested not disturb me.
(c) Please do not disturb me.
(d) You are requested do not disturb me.

94. Fill in the blank with correct conjunction:
She is rich __she is not contented.
(a) since (b) yet
(c) as (d) while

Drection: (Qs 95-100): *Read the passage carefully and answer the questions given below:*

The Walt Disney Company became the first major media company to ban advertisements for candy bars and junk food on its television channels, radio stations and websites, to stop food manufacturers from peddling nutritionally challenged fattening junk for kids. The ban covers foods with too much sugar, 'too much salt or a full meal more than 600 calories. Predictably, the outraged public said that banning smoking in public places and artery- blocking trans fats in food was bad enough, but stopping them from' guzzling comfort drinks by the litres was almost a human rights violation.

It seems most people are not just happy choosing their own poison. They also want it in super- sized doses, guaranteed to kill sooner than later, for after tobacco use, obesity is the biggest public health bugbear that triggers more avoidable diseases and deaths than malnutrition. Overweight and obesity are the leading causes for global deaths, killing 2.8 million adults each year. Worldwide obesity has more than doubled since 1980. The reasons for poor lifestyle choices are many, with almost all driven by socio-economic causes such as low education, and limited income. Like killer infections, obesity and the resultant type-2 diabetes affect the poor more than the affluent, largely because processed and fast food are cheaper and take less or no time to prepare than healthy home. Cooked meals. Limiting food choices, however, is not enough.

The need is to get children off their chairs and into the playgrounds. Too much screen time, largely social – networking followed by online and video gaming and television, are making healthy children fat and putting them at risk of type-2 diabetes in the second decade of their lives. The lifestyle disease that interferes with the way the body metabolises glucose typically affects people in their fifties and sixties and is linked with a host of complications.

The official measure of obesity in adults is Body Mass Index (BMI), which is calculated by dividing a person's weight in kilograms by the square of his height in metres (kg/m^2). The WHO definition is: a BMI greater than or equal to 25 is

overweight, 30 is" obese, but the cut- offs for the South Asians are 23 for overweight and 25 for obese.

95. Obesity affects ___ more than the affluent.
(a) the middle class (b) the educated
(c) the poor (d) the sick

96. 'Limiting food choices, however, isn't enough.'
Choose the synonym of underlined word.
(a) Restricting (b) Calculating
(c) Ignoring (d) Restructuring

97. Choose the correct option:
The antonym of 'miser' is
(a) Rich (b) Strong
(c) Popular (d) Generous

98. What did the Walt Disney Company bar
(a) Candy bars
(b) Junk food
(c) The foods were healthy
(d) Advertisement for candy bars and junk food

99. What was purpose behind the ban?
(a) The foods were unhealthy
(b) The foods were healthy
(c) The foods were cheap
(d) The foods were costly

100. Overweight and obesity are the leading causes for global deaths, killing ____ adults each year.
(a) 2.6 million (b) 8 million
(c) 8.2 million (d) 2.8 million

SECTION-D: GENERAL SCIENCE

101. When electric current is passed through the Copper Sulphate solution?
(a) Copper gets deposited on electrode the connected to the positive terminal of the
(b) battery. Copper gets deposited on the electrode connected to the negative terminal of the battery.
(c) No reaction takes place
(d) Copper gets positive deposited either on or on negative terminal of the battery.

102. Match the following:

Heavenly body		Characteristics	
A.	Orion	I	Small objects revolving around Sun between Mars & Jupiter.
B.	Comet	II	Brightest star in the sky located close to Orion.
C.	Sirius	IIII	A constellation can be seen during winter time in late evenings.
D.	Asteroid	IV	An object which revolves around Sun in elliptical orbit and has a bright head and a tail.

Choose the correct option from the answers given below:
(a) A-III, B-IV, C-I, D-II
(b) A-III, B-IV, C-II, D-I
(c) A-IV, B-I, C-II, D-I
(d) A-III, B-II, C-IV, D-I

103. Which of the following gases has the highest concentration in the atmosphere?
(a) Oxygen (b) Carbon dioxide
(c) Nitrogen (d) Sulphur dioxide

104. Global Warming is not responsible for:
(a) Increase in sea level
(b) More severe storms
(c) Increased droughts
(d) More earthquakes

105. Identify the multicellular microorganism from the following:
A. Bacteria B. Aspergillus
C. Paramaecium D. Penicillium
Choose the correct option from the following:
(a) A only (b) A and B only
(c) B, C and D only (d) B and D only

106. Match List I with List II:

List I		List II	
A.	Coke	I	Obtained during the processing of coal to get coke.
B.	Coal Tar	II	Almost pure form of carbon
C.	Coal Gas	III	Petroleum
D.	Petrol	IV	Naphthalene balls

Choose the correct option from the answers given below:
(a) A-1, B-ll, C-I, D-IV
(b) A-II, B-IV, C-III, D-J
(c) A-II, B-IV, C-I, D-III
(d) A-III, B-II, C-IV, D-I

107. A combustible substance catches fire/burn as long as its temperature is its ignition temperature.
(a) Higher than
(b) Lower than
(c) Equal to or higher than
(d) Equal to or lower than

108. Which of the following is/are present only in plant cell?
A. Cell membrane
B. Cell walI
C. Chloroplast
D. Nuclear membrane
Select the correct answer using the code given below:
(a) B and C (b) A and D
(c) B (d) C

109. Given below are the different stages in the life cycle of frog. Arrange them in order of occurrence
A. Fertilisation B. Tadpole
C. Laying of eggs D. Development of embryos

Choose the correct option from the following:

(a) A, C, B, D (b) C, A, D, B

(c) C, B, D, A (d) D, A, C, B

110. Which source book keeps a endangered record of all animals and plants?

(a) Blue Data Book (b) Green Data Book

(c) Red Data Book (d) White Data Book

111. Identify the endemic flora of the Pachmarhi Biosphere Reserve from the following:

(a) Bison and flying squirrel

(b) Bison and sal

(c) Sal and wild mango

(d) Flying squirrel and wild mango

112. When fertilisation does not occur then the released egg and thickened lining of the uterus is shed off. It is called:

(a) Pregnancy (b) Menarche

(c) Menopause (d) Menstruation

113. Increase in height during puberty depends on:

(a) Genes

(b) inherited from mother only Eating right kind of exercise food and exercise

(c) Exercise and genes inherited from parents

(d) Eating right kind of food and genes inherited from parents

114. Consider the following statements

A. Endocrine glands release hormones into the blood stream to reach a target site.

B. Hormones are not chemical substances.

Select the correct given below answer using the code

(a) Only A is correct

(b) Only B is correct

(c) A and B are correct

(d) Neither A nor B is correct

115. The magnitude of the power of an earthquake is expressed on a scale called

(a) Richter scale (b) Vernier scale

(c) Ratio scale (d) Graphic scale

116. Calorific value of a fuel is expressed in:

(a) Joule (b) Kilo Joule per kg (kJ/kg)

(c) Kilo Joule (d) Kilo Joule/m^2

117. Tin cans are made by electro plating tin on to iron because Tin:

(a) is less reactive than Iron

(b) is more reactive than Iron

(c) does not react with Iron

(d) and Iron both are least reactive

118. Arrange the rolling, sliding and static friction in stage increasing order of friction and choose the correct option.

(a) Rolling, Static, Sliding

(b) Rolling, Sliding, Static

(c) Static, Sliding, Rolling

(d) Static, Rolling, Sliding

119. Which of the following is not a Rabi crop?

(a) Wheat (b) Pea

(c) Mustard (d) Paddy

120. identify the methods for replenishing soil with nutrients from the following:

A. Growing different crops alternately

B. Usage of manures.

C. Sowing healthy seeds.

D. Growing legumes as fodder in one season and wheat crop in the next season.

Choose the correct option from the following:

(a) A, C and D (b) A, B and D

(c) A and D (d) B and C

121. The bulb of the dropper. immersed in water is pressed. When the pressure is released. water gets filled in the dropper. This happens due to

(a) Force of water (b) Force of gravity

(c) Pressure of water (d) Atmospheric pressure

122. An oscillating body is making 360 oscillations in 3 minutes. Its frequency in hertz will be

(a) 120 (b) 2

(c) 20 (d) 12

123. A person who is standing 2m in front of a plane mirror, seems to be _____m away from his image.

(a) 2 m (b) 4 m

(c) 0.5 m (d) 1 m

124. Which of the following statements are not true for metals?

A. Metals are good conductor of heat and electricity.

B. The property of metals by which they can be beaten into thin sheets is called ductility

C. Metals produce ringing sounds So they are said to be Sonorous.

D. In general metallic Oxides are acidic in nature.

Choose the correct option from below:

(a) B and C (b) C and D

(c) B and D (d) A, B and D

125. Polythene and PVC are examples of:

(a) Thermoplastics (b) Thermosetting plastics

(c) Melamine (d) Bakelite

SECTION-E: SOCIAL SCIENCE

126. Match List I with List II:

List I		List II	
A.	Prejudice	I.	Difference in language, food, dress, customs etc.
B.	Stereotype	II.	Judging people 'negatively.
C.	Discrimination	III.	Fixing people into one image.
D.	Diversity	IV.	Inequality

Choose the correct option from the answers given below;

(a) A-II B-II, C-III, D-IV
(b) A-II, B-III, C-IV, D-I
(c) A-III B-II C-I, D-IV
(d) A-IV, B-III, C-II, D-I

127. Which of the following is the main work of Patwari?

(a) Maintaining law and order
(b) Measuring land and keeping lang records
(c) Maintaining accounts of the village
(d) Settles disputes of the villagers

128. Which of the following is a human made resource?

(a) Technology (b) Water
(c) Copper (d) Natural gas

129. Which of the following is NOT a component of maps?

(a) Distance (b) Direction
(c) Plan (d) Scale

130. Which of the following is NOT a natural ecosystem?

(a) Forest (b) Sea
(c) Aquarium (d) Desert

131. Where are mushroom rocks found?

(a) Valleys (b) Glaciers
(c) Hills (d) Deserts

132. 'Which of the following is formed by the material carried by glaciers?

(a) Flood plains (b) Moraines
(c) Beach (d) Loess

133. Which of the following are the key features of the Constitution of India?

A. Federalism,
B. Parliamentary form of Government,
C. Separation of Powers.

Select the correct answer using the code given below:

(a) A and B only (b) B and C only
(c) A and C only (d) A, B and C

134. Ox bow lakes are found in:

(a) Mountains (b) Deserts
(c) Glaciers (d) River valleys

135. Match List I with List II

List I		List II	
A.	Biotic	I.	Rivers, Lakes, Seas, Oceans
B.	Hydrosphere	II.	Thin layer of air
C.	Atmosphere	III.	Hard top layer of the earth
D.	Lithosphere	IV.	The world of living organisms

Choose the correct option from the answers given below

(a) A-I, B-II, C-III, D-IV
(b) A-II, B-III, C-I, D-IV
(c) A-III, B-I, C-II, D-IV
(d) A-IV, B-I, C-II, D-III

136. Who began a campaign against the practice of Sati?

(a) Raja Rammohan Roy
(b) Ishwarchandra Vidyasagar
(c) Jyotirao Phule
(d) Shri Narayana Gara

137. Where is The Tata Iron and Steel Company situated?

(a) On the banks of Hooghly River
(b) On the banks of Son River
(c) On the banks of Ganges
(d) On the banks of Subarnarekha

138. When was The English Education Act introduced?

(a) 1735 (b) 1800
(c) 1835 (d) 1870

139. Match List I with List II:

List I		List II	
A.	Sukta	I.	Slave
B.	Chariots	II.	Sacrifice
C.	Yajna	III.	Used in battles
D.	Dasa	IV.	Well said

Choose the correct option from the answers given below:

(a) A-II, B-IV, C-III, D-I
(b) A-IV, B-I, C-III, D-II
(c) A-III, B-II, C-IV, D-I
(d) A-IV, B-III, C-II, D-I

140. Where is Gangri glacier?

(a) Assam (b) Mizoram
(c) Ladakh (d) Uttarakhand

141. Which one of the following may be called a 'dwarf' planet?

(a) Pluto (b) Saturn
(c) Mercury (d) Venus

142. Where was the Harappan city of Dholavira located?

(a) Rajasthan (b) Rann of Kutch
(c) Gulf of Khambhat (d) Punjab

143. Which of the following is a conventional source of energy?
(a) Biogas (b) Firewood
(c) Solar energy (d) Wind energy

144. Arrange the following steps of terrace farming in chronological order:
A. The sides of each plot are raised to retain water.
B. They cultivate rice on it.
C. The land on a hill slope is made into flat plots.
D. Plots are carved out in steps.
(a) A, B, C, D (b) B, C, D, A
(c) D, B, C, A (d) C, D, A, B

145. For how many years is a Gram Panchayat elected?
(a) 1 (b) 3
(c) 2 (d) 5

146. Which of the, following soldiers was hanged to death on 29 March 1857?
(a) Bhagat Singh (b) Rajguru
(c) Sukhdev (d) Mangal Pandey

147. Where were the Mughal emperor Bahadur Shah Zafar and his wife Begun Zinat Mahal sent to prison?
(a) Delhi (b) Meerut
(c) Rangoon (d) Lucknow

148. Which of the following books contain the ideas of Chanakya?
(a) Upnishads (b) Arthashastra
(c) Yogdarshan (d) Prashasti

149. 'Who created the sacred space Dharmsal
(a) Baba Guru Nanak (b) Kabir
(c) Tukaram (d) Eknath

150. 'What is the place "where a river flows into another water body called?
(a) River's mouth (b) Delta
(c) Basin (d) Tributary

Hints & Explanations

1. (c) Area of the Circle = πr^2

$$2464 = \frac{22}{7} r^2$$

$$\therefore r = \sqrt{\frac{2464 \times 7}{22}} = 28m$$

2. (c) Average Number =

$$\frac{4000 + 5000 + 4500 + 3500 + 4000 + 4000 + 4500 + 5500}{8}$$

$$= 4375$$

3. (b) $(a)^2 = \left(\sqrt{2}+1\right)^2 = 3 + 2\sqrt{2}$

$$b^2 = \left(\sqrt{3}-\sqrt{2}\right)^2 = 5 - 2\sqrt{6}$$

$$\frac{c = \sqrt{6} - 2\sqrt{2}}{a^2 + b^2 - c = 8 - 3\sqrt{6}}$$

4. (b) $(2.5a - 3.5b)^2 - (3.5a - 2.5b)^2$ {From $a^2 - b^2 = (a^2 + b)(a - b)$}

$$= (2.5a - 3.5b + 3.5a - 2.5b)(2.5a - 3.5b - 3.5a + 2.5b)$$

$$= -6(a - b)(a + b) = 6b^2 - 6a^2$$

5. (c) $(A + B) \times \frac{30}{100} = (A + B) \times \frac{50}{100}$

$$\frac{A + B}{A - B} = \frac{5}{3}$$

$$\frac{(A + B) + (A - B)}{(A + B) - (A - B)} = \frac{5+3}{5-3} \Rightarrow \frac{A}{B} = \frac{4}{1}$$

6. (b) $\left(a + \frac{1}{a}\right)\left(a - \frac{1}{a}\right) = a^2 - \frac{1}{a^2}$

$$\left(a^2 + \frac{1}{a^2}\right)\left(a^2 - \frac{1}{a^2}\right) = a^4 - \frac{1}{a^4}$$

$$\left(a^4 + \frac{1}{a^4}\right)\left(a^4 - \frac{1}{a^4}\right) = a^8 - \frac{1}{a^8}$$

$$\left(a^8 + \frac{1}{a^8}\right)\left(a^8 - \frac{1}{a^8}\right) = a^{16} - \frac{1}{a^{16}}$$

$\therefore b = 16$

7. (a) Number of apples $= 4\left(a^2 - \frac{2}{3}b^2\right)\left(\frac{3}{4}a^2 + 3b^2\right)$

$$= \left(4 \times \frac{1}{3} \times \frac{3}{4}\right)\left(3a^2 - 2b^2\right)\left(a^2 + 4b^2\right)$$

$$= 3a^4 + 10a^2b^2 - 8b^4$$

8. (b) $x = \frac{4ab}{a+b}$

$$= \frac{x + 2a}{x - 2a} + \frac{x + 2b}{x - 2b}$$

$$= \frac{\frac{4ab}{a+b} + 2a}{\frac{4ab}{a+b} - 2a} + \frac{\frac{4ab}{a+b} + 2b}{\frac{4ab}{a+b} - 2b}$$

$$= \frac{4ab + 2a(a+b)}{4ab - 2a(a+b)} + \frac{4ab + 2b(a+b)}{4ab - 2b(a+b)}$$

$$= \frac{2a(a+3b)}{2a(b-a)} + \frac{2b(3a+b)}{2b(a-b)}$$

$$= \frac{a + 3b}{(b-a)} - \frac{(3a+b)}{(b-a)}$$

$$= \frac{2(b-a)}{(b-a)} = 2$$

9. (c) Let number is x.

Then, 7 more then x = (x+7)

8 multiplied with 7 more then x = 8 (x+ 7)

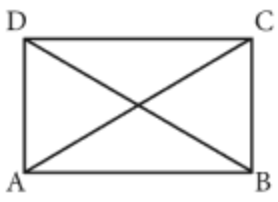
This equal 15 +3x

$\therefore 8(x+7) = 15 + 3x$

10. (a) $= \frac{44(x^4 - 5x^3 - 24x^2)}{11x(x-8)} = \frac{44x^2(x^2 - 5x - 24)}{11x(x-8)}$

$$= 4x\frac{(x-8)(x-3)}{(x-8)} = 4x(x+3)$$

11. (c)



In rectangle, side AB $\neq$ CD

but diagonal AC = BD and sum of angles $\angle A + \angle B + \angle C + \angle D = 360^\circ$

12. (c) Circumference = $2\pi r$

$$88 = 2 \times \frac{22}{7} \times r \Rightarrow r = \frac{88 \times 7}{2 \times 22} = 14 \text{ cm}$$

Area of circle = $\frac{22}{7}(14)(14) = 616 \text{ cm}^2$

13. (a) Perfect square number between 1 to 40 are

4, 9, 16, 25 and 36. i.e. 5 numbers.

Number of way of selecting 1 number out of

$5 = {}^5C_1 = 5$

Again, Number of way of selecting 1 number out of

$40 = {}^{40}C_1 = 40$

$\therefore$ Required Probability = $\frac{{}^5C_1}{{}^{40}C_1} = \frac{5}{40} = \frac{1}{8}$

14. (a) 6 identical pipes fill 1000 liter tank in 1 hour 30 minutes or 90 minutes.

$\therefore$ 6 identical pipes fill 500 liter tank in $\frac{90}{2}$

= 45 minute.

Now, 3 pipes stop working, so remaining

3 pipes can fill remaining 500 litres tank in 45 ×2 = 90 minutes

$\therefore$ total time taken = 45 + 90 = 135 m

15. (d) Let number of men originally = x

Then, 1 man can finish whole work in = 50x days = 50x days

When number of men = (x + 6)

Then, work will finished in 50 –10 = 40days

$\therefore$1 man can finish whole work in = 40 (x + 6) days

On equating 2 values, 50x = 40 (x+6)

$$10x = 240$$

$$x = 24$$

$\therefore$Original number of men = 24

16. (c) Remaining two angles sum = 180 –63 = 117

Now, x + 2x = 117

$$x = \frac{117}{3} = 39$$

$\therefore$Largest angle = 2 × 39 = 78

17. (a) Let a,b,c and d are K, 2K, 3K and 5K

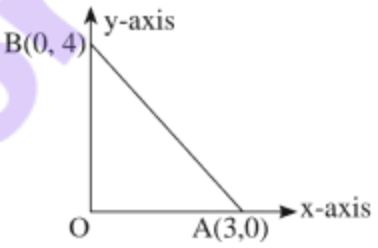
Now, $\frac{a^2+b^2+c^2}{b^2+c^2+d^2} = \frac{k^2+(2k)^2+(3k)^2}{(2k)^2+(3k)^2+(5k)^2} = \frac{14}{38} = \frac{7}{19}$

18. (d) Time of travel = $\frac{\text{Distance}}{\text{Time}} = \frac{132}{48}$ hr

$\frac{132}{48} \times 60$ minute = 165 minutes = 2 hr 45 minutes

Hence, Atul will reach hometown at 11:45 am.

19. (b)



From ΔAOB, $\angle AOB = 90^\circ$ as two axis are at = 90

and OA = 3 unit = 90°, OB = 4 units

Now, Area of

$$AOB = \frac{1}{2} \times OA \times OB = \frac{1}{2} \times 3 \times 4 = 6 \text{ units}^2$$

20. (c) Formula for polyhedron = V + F –E = 2

Option (a) : 8 + 6 –12 = 2

Option (b) : 5 + 5 –8 = 2

Option (c) : 6 + 5 –10 = 1 $\neq$ 2 (Not true)

Option (d) : 4 + 4 –6 = 2

21. (d) Volume of smaller cube = 1 × 1 × 1 = 1 cm^3

Number of cubes having no face with red colour

$= (n-2)^3 = (5-2)^3 = (3)^3 = 27$

$\therefore$ Volume of such cube which have no colour faces

$= 1 \times 27 = 27 \text{ cm}^3$.

22. (c) Number is divisible by 3 if sum of its digit be multiple of 3.

i.e. $3 + 2 + 6 + A + 5 + 0 = 16 + A$

For maximum value of A = 9, 16 + 9 = 25; but 25 is not divisible by 3.

For A = 8, 16 + 8 = 24 and 24 is divisible by 3.

Hence, A = 8

23. (c) $\frac{7}{3}+\frac{7}{3}\times\frac{3}{14}-\frac{1}{7}\times\left(-\frac{49}{14}\right)$

$\frac{7}{3}+\frac{1}{2}+\frac{1}{2}=\frac{10}{3}$

24. (c) $\sqrt{\{\sqrt[3]{27}-2\times\sqrt[3]{8}+\sqrt[3]{125}\}}$

$= \sqrt{\{3-2\times2+5\}} = \sqrt{3-4+5} = 2$

25. (d) Average $= \frac{2+3+5+7+11}{5} = 5.6$

26. (b) Surface area of cube = 6 × (side)²

$\frac{4}{9}=\frac{6\times(\text{Side}_1)^2}{6\times(\text{Side}_2)^2}$

$\therefore \frac{\text{Side}_1}{\text{Side}_2}=\sqrt{\frac{4}{9}}=\frac{2}{3}$

Now, volume of cube = (side)³

$\therefore \frac{\text{Volume}}{\text{Volume}}=\left(\frac{2}{3}\right)=\frac{8}{27}$

27. (d) Volume of one cube = 6 × 10 × 4

$\therefore$ Volume of 4 such cube = 4 × 6 × 10 × 4 = 960 cm³

28. (d) Let Varun age = x years

then, Ritu's age = (x + 4) years

ATQ,

After 5 years, their age sum = 70

$(x + 5) + (x + 4 + 5) = 70 \Rightarrow x = \frac{70-14}{2} = 28$

$\therefore$ Ritu's present age = 28 + 4 = 32 years

29. (b) Let total marble = n

$\therefore$ Red marble $= n\times\frac{3}{5}=\frac{3n}{5}$

Green marble $= \frac{n-\frac{3n}{5}}{2}=\frac{2n}{5\times2}=\frac{n}{5}$

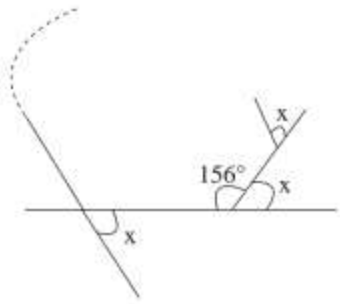
ATQ,

$\frac{n}{5}=12$

$\therefore$ Red marble $= \frac{3n}{5}=3\times12=36$

30. (c) Let Polygon have n sides

And, we know that,



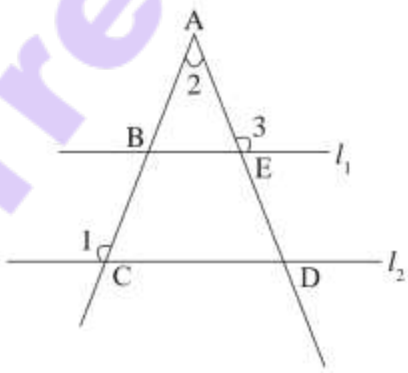
Sum of exterior angles of any polygon = 360°

Exterior angle = 180 – 156° = 24°

Now, 24 × n = 360°

$\therefore n = \frac{360°}{24} = 15$

31. (c)



$\angle1 = 115°$

$\angle2 = 40°$

$\angle ACD = 180° - \angle1$

$= 180° - 115° = 65°$

$\angle ABC = \angle ACD = 65°$

From ΔABE, $\angle A + \angle B + \angle E = 180°$

$40° + 65° + \angle E = 180°$

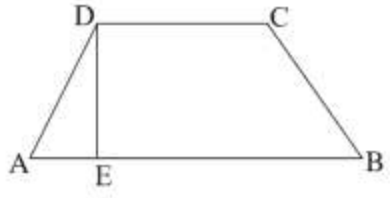
$\therefore \angle E = 180° - 40° - 65° = 75°$

$\therefore \angle3 = 180° - \angle E = 180° - 75° = 105°$

32. (b) Number of children have interest in comedy shows

$= \frac{100}{360}\times900 = 250$

33. (a) Area of trapezium



$= \frac{1}{2}\times$ Height × (Sum of parallel sides)

$144 = \frac{1}{2}\times12\times(AB + CD)$

$AB + CD = 24$

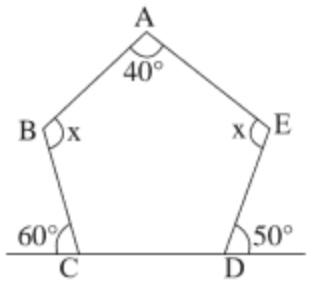
$2CD + CD = 24$

$\therefore CD = 8$

$\therefore$ Side AB = 2CD = 16 cm

34. (d) A. Cube of odd number is always odd $(3)^3 = 27$, $(5)^3 = 125$, ... These are odd number.
B. $(2)^3 = 8$, so, statement B is incorrect.
C. $(10)^3 = 1000$; A perfect cube ends with 3 zero.
D. $(11)^3 = 1331$; $(12)^3 = 1728$ .....
Hence, A and D are true.

35. (c)



$\angle BCD = 180° - 60° = 120°$

and $\angle EDC = 180° - 50° = 130°$

Now, sum of internal angle of pentagon = 540°

$\therefore \quad 120° + 130° + 40 + 2x = 540°$

$2x = 540 - 290 = 250°$

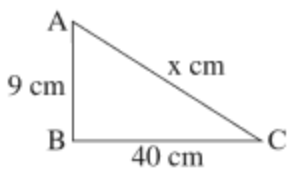
$\therefore \quad x = \frac{250}{2} = 125°$

36. (d) Average Marks $= \frac{95+72+80+68+65}{5} = 76$

37. (d) In right angle triangle: $a^2 + b^2 = c^2$

A. $(3)^2 + (4)^2 = 9 + 16 = 25 = (5)^2$
B. $(5)^2 + (12)^2 = 25 + 144 = 169 = (13)^2$
D. $(6)^2 + (8)^2 = 36 + 64 = 100 = (10)^2$
C. $(6)^2 + (7)^2 = 36 + 49 = 85 \neq (8)^2$

38. (c)



$x = \sqrt{(9)^2 + (40)^2} = \sqrt{81+1600} = \sqrt{1681} = 41\text{cm}$

39. (d) Value of Car after 1 year $= 800000 \times \left(1 - \frac{10}{100}\right)$

Value of Car after 2 year

$= 800000 \times \left(1 - \frac{10}{100}\right)\left(1 - \frac{10}{100}\right)$

Value of Car after 3 year

$= 800000 \times \left(1 - \frac{10}{100}\right) \times \left(1 - \frac{10}{100}\right)\left(1 - \frac{10}{100}\right)$

$= 800000 \times \frac{90}{100} \times \frac{90}{100} \times \frac{90}{100} = ₹583200$

40. (c) Arranging data in ascending order:
3, 6,. 7, 8, 9, 11, 12
Number of data = 7 (odd number)

$\therefore$ Median data $= \frac{7+1}{2} = 4^{th}$ data

and 4^{th} data is 8.

41. (b) Total height = Average height × Number of boys.
$= 5'3" \times 6 = 30'18"$
Now, 18" = 1'6"
$\therefore$ Total height = 31'6"
Total height of remaining 5 boys = 31'6" – 6'1' = 25'5"
New Average height $= \frac{25'5"}{5} = 5'1"$

42. (b) Number = $2700 = 3 \times 3 \times 3 \times 10 \times 10$
when, multiply by 10,
New number $= 3 \times 3 \times 3 \times 10 \times 10 \times 10$
$= (3 \times 10)^3 = (30)^3$
Hence, required number = 10.

43. (b) $N = 1 \times 2 \times 3 \times 4 \times .... \times 20$
To get a zero, we need to count power of 2, 5 and 10.
Multiple of 5 in multiplication from 1 to 20 core,
5, 10, 15 and 20.
$\therefore$ Number of zero = 4

44. (b) Cost of 5 kg apple = 425
$\therefore$ Cost of 5 kg apple $= \frac{425}{5} \times 8 = ₹680$
Similarly cost of 8 dozen oranges $= \frac{744}{12} \times 8 = ₹496$
and cost of 8 kg mangoes $= \frac{480}{4} \times 8 = 960$
$\therefore$ Total cost = 680 + 496 + 960 = ₹2136.

45. (c) Pawan total expenses on T.V. is his effective
Cost price = 4300 + 500 = 4800
Selling Price = 5856.
Profit % $= \left(\frac{5856-4800}{4800}\right) \times 100 = 22\%$

46. (c) Total food item = 120 × 25 units.
Total students when 30 more students joined
= 120 + 30 = 150
$\therefore$ Number of days $= \frac{120 \times 25}{150} = 20$ days

47. (c) Selling price = Marked price $\times \left(\frac{100 - \text{discount \%}}{100}\right)$.
$\therefore$ Markedprice $= 1292 \times \frac{100}{(100-15)} = 1292 \times \frac{100}{85} = 1520$

48. (a) Alloy weight = 6 + 24 = 30 kg
$\therefore$ Metal A% $= \frac{6}{30} \times 100 = 20\%$

49. (b) $56 \times 56 = 3136$

$\therefore$ Required number to be subtracted = 3142 – 3136 = 6

50. (a) $\sqrt{Z-A} = \sqrt{26-1} = \sqrt{25} = 5$

51. (d) Dot are rotating anticlockwise by 45°, 90°, 135°, 180°....

52. (c) In every next fig. one arrow is added in opposite direction.

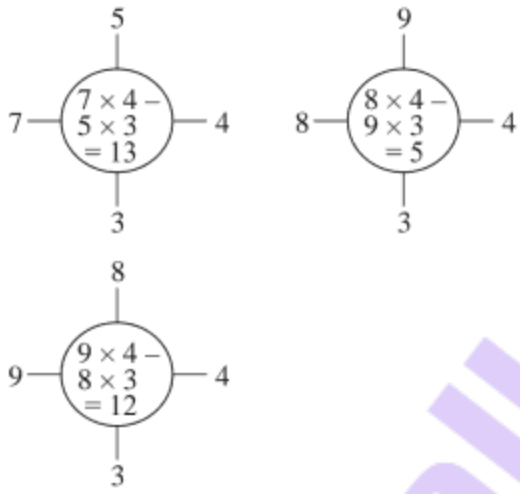
53. (d) Arrangement as per dictionary.

Conscience, Consciousness, Consequence,
(C) (B) (E)

Conservation, Consume
(D) (A)

54. (d) 13, 17 and 37 are prime number but 63 is a composite number

55. (a)



56. (d) Hand of the clock moves in the clockwise direction at the gap of 0, 1, 2, 3 .....

57. (c)

58. (d) 3 : 11

$\Rightarrow (3)^2 + 2 = 9 + 2 = 11$

Similarly, $(7)^2 + 2 = 49 + 2 = 51$.

59. (b) y : 2 :: T : 7

↓ ↓

y letter positon in reverse alphabet is 2 — T position in reverse alphabet is 7

60. (c) Number = x

$3 < x < 8$ and $6 < x < 10$

$\therefore$ $6 < x < 8 \Rightarrow x = 7$.

61. (b)

D	E	L	H	I
–1↓	–2↓	–3↓	–4↓	–5↓
C	C	I	D	D

Similarly,

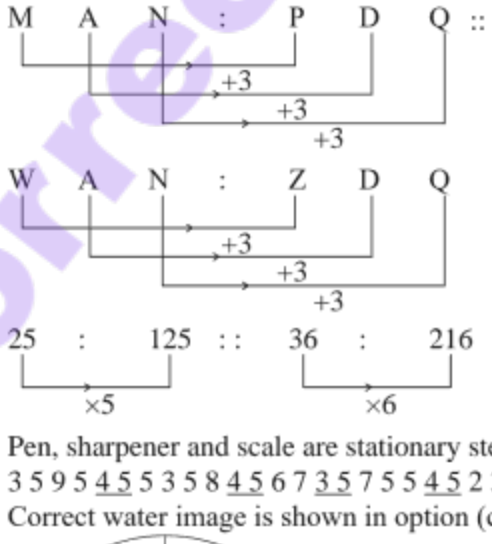
B	O	M	B	A	Y
–1↓	–2↓	–3↓	–4↓	–5↓	–6↓
A	M	J	X	V	S

62. (b) Amit

Bob — Chetan

Hence, Amit is North-west to Chetan.

63. (b)



64. (c) 25 : 125 :: 36 : 216

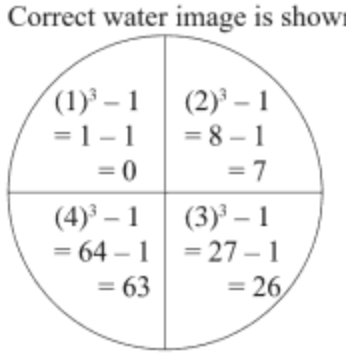
×5 ×6

65. (d) Pen, sharpener and scale are stationary stems.

66. (b) 3 5 9 5 4 5 5 3 5 8 4 5 6 7 3 5 7 5 5 4 5 2 3.

67. (c) Correct water image is shown in option (c).

68. (c)



69. (d) Arrange from smaller to larger duration :
Second, Minute, Hour, Day, Week

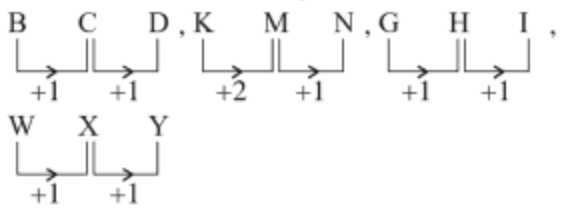
70. (c) Lizard comes under Reptile class, like that whale comes under mammal class.

71. (b) Given Series :

1,	9	25,	49,	81,	121
↑	↓	↓	↓	↓	↓
$(1)^2$	$(3)^2$	$(5)^2$	$(7)^2$	$(9)^2$	$(11)^2$

72. (c) Chronological order :
Birth, Education, Marriage, Death, Funeral

73. (b)



74. (c) Arrangement from top height to short height:
Chetan > Bobby > Deepak > Anil > Elen

75. (d) Number of days between Feb 1, 2004 to 12th 2004
= 28 + 12 = 40 days
5 weeks 5 days
∴ 12th 2004 is Monday.

76. (d) The sentence is grammatically correct. In this sentence, 'the carpenter' is a defining relative clause specifying the carpenter who made the chair. A relative clause is one which has a subject and a verb, but cannot stand alone as a sentence.

77. (a) Rita told me that she never ate junk food. In this sentence, the reporting verb changes to 'told' and the pronoun 'I' changes to 'she'.

78. (b) They told Rahul that they were watching cricket. In this sentence, the reporting verb changes to 'told', and the pronoun 'to Rahul' will be included.

79. (b) topmost. The superlative degree of 'top' is 'topmost'.

80. (c) She is so slow that she cannot be a runner. This is the correct way of explaining the above statement- 'She is too slow to be a runner.'

81. (b) isn't it. The correct 'question Tag' for the statement is 'isn't it', thus, the improved sentence will be- "Isn't it quite hot outside today?"

82. (c) The correct conjunction to be used her is 'that'. It introduces a defining relative clause specifying the ring. The complete sentence will be- "This is the ring that she gifted me."

83. (a) Neither she nor he was present in the class. Whenever we use 'neither', it will be followed by 'nor'.

84. (a) Alas! The improved sentence will be – "Alas! She lost her daughter." The word, 'alas' is an expression of sadness or sympathy, and is appropriate to expressing the loss of a person.

85. (b) Reema is so generous that she can help the needy. This is an appropriate option that accurately conveys the reason behind Reema's generosity.

86. (a) Different languages are spoken all over the world. This is the most accurate and grammatically correct way of converting the sentence to passive voice. Here, the subject (different languages) is undergoing the action of the verb (being spoken).

87. (b) The idiom, 'helter skelter' refers to confusion or doing something in haste. From the options given in this question, 'here and there' will be the correct and appropriate answer to the idiom.

88. (d) The idiom, 'A wolf in a sheep's clothing' refers to "a dangerous person pretending to be a harmless person".

89. (a) had been kind, dead. The complete sentence will be- "Her uncle who had been kind to her was dead." The sentence is in past perfect tense, so 'had been' will be used.

90. (c) I saw him climbing up the tree to tree to pluck mangoes. This is the grammatically correct way of framing the sentence as when we use 'climb' for trees, we will use 'up' as an appropriate word.

91. (b) Autonomous is the correct spelling for the word. It means 'independent' or 'self-governing'.

92. (a) "He waited long for me" is the appropriate sentence that uses an adverb. The word, 'long' modifies the verb, 'waited' to describe the duration of the wait.

93. (a) You are requested not to disturb me. This is the correct sentence in passive voice. In this sentence, the subject (me) undergoes the action of the verb (disturb). Using the proper verb form, a polite request is retained.

94. (b) She is rich yet she is not contented. The sentence indicates a contrast between her wealth and unhappiness.

95. (c) the poor. The complete sentence is, "Obesity affects the poor more than the affluent." From the following lines of the passage, it can be seen that obesity affects the poor – "Like killer infections, obesity and the resultant type-2 diabetes affect the poor more than the affluent, largely because processed and fast food are cheaper and take less or no time to prepare than healthy home. Cooked meals."

96. (a) Restricting. The synonym for 'limiting' is restricting, which means 'putting a limit on somebody or something'.

97. (d) Generous. The antonym of 'miser' is generous, meaning that one is able to give more money or help than is usual or expected.

98. (d) The Walt Disney Company banned advertisements for candy bars and junk food. From the first sentence of the passage, it can be seen- "The Walt Disney Company became the first major media company to ban advertisements for candy bars and junk food on its television channels, radio stations and websites…"

99. (a) The purpose behind the ban was that the foods were unhealthy. It is evident from the first sentence of the passage- "…to stop food manufacturers from peddling nutritionally challenged fattening junk for kids."

100. (c) Overweight and obesity are the leading causes for global deaths, killing 2.8 million adults each year.

101. (d) Copper is deposited on the plate connected to the negative terminal of the battery.When electricity is passed through the copper sulphate solution, copper sulphate dissociates into copper ionsand sulphateions . The copper ions move towards the electrode connected to the negative terminal of the battery (cathode) and gets deposited on it.

102. (b) A constellation can be seen during winter time in late evenings.

Comet: An object which revolves around Sun in elliptical orbit and has a bright head and a tail.

Sirius: Brightest star in the sky located close to Orion.

Asteroid: Small objects revolving around Sun between Mars & Jupiter.

103. (c) The nitrogen gas comprises 78% of the atmospheric air along with other gases like oxygen, carbon dioxide and other gases etc.

104. (d) Earthquakes are the due to the disturbances created by movement of tectonic plates and their collision. Hence it is not arise due to global warming

105. (d) As Aspergillus and Pencillium are the members of the kingdom Fungi, so they represent multicellular microorganisms. Bacteria and Paramoecium belongs the kingdom Monera and Protista respectively , so they are unicellular.

106. (c)

1. A true coke is a fuel with few impurities and a high carbon content usually made from coal. It is almost pure form of the carbon.
2. Naphthalene balls are obtained from coal tar and are used as a moth repellant .
3. Coal gas is obtained during the processing of coal to get coke. It is used as a fuel in many industries situated near coal processing plants.
4. Petroleum is a mixture of many substance such as gas, coal , petrol ,diesel and lubricating oil .

107. (b) The ignition temperature of a substance is the minimum temperature which is required to start or cause the combustion .A combustible substance cannot catch fire or burn as long as its temperature is lower than its ignition temperature.

108. (a) As cell wall and chloroplast are the characteristic features of plant cell, so they are present exclusively in plants. Cell membrane and nuclear membrane are present in all eukaryotic cells.

109. (b) The frog undergoes external fertilization in which he lays eggs in the water. Followed by fertilization with sperms released in water, the tadpoles will develop from the developed embryo.

110. (c) The Red Data Book stores the record of all the extinct and endangered species of plants and animals recorded so far. It is prepared by the organisation IUCN (International Union for conservation of nature and natural resources).

111. (c) The Pachmarhi biosphere reserve have sal and wild mangoendemic plant species, as they are found exclusively in this reserve. The endemic animals that are found in this reserve are bison, indian giant squirrel and flying squirrel.

112. (d) If fertilization does not occur, the inner lining of the womb (endometrium) is shed during menstruation.. The average menstrual cycle lasts 28 days. The onset of menstruation is known as menarche (occurs at the age of puberty) and cessation of menstruation takes place at the age of around 50 years known as menopause.

113. (d) Genetically height is defined by the paternal and maternal genes. However, balanced diet and the right kind of food is very important during the growing years. This helps in the overall development of bones, muscles and other parts of the body .

114. (a) The endocrine glands pour their secretion (hormones) directly into the blood. After reaching target cells hormones stimulates changes in the body by binding with the specific cellular receptors .

Hormones are chemicals that are secreted in trace amounts and act like messengers that affect and controls several metabolic processes.

115. (a) The magnitude of the power of an earthquake is measured on the scale of Richter scale.

116. (b) Calorific value refers to the amount of heat produced by unit volume of a substance by complete combustion.The calorific value of a fuel is expressed in a unit called kilo joule per kilogram (kJ/kg). Calorific value is used to measure fuel efficiency.

117. (a) Tin cans are thin electroplated on iron. These tin cans are used to preserve food items. Because

Tin is less reactive than iron as it will prevent food from being poisoned.

Electroplating is the process of plating one metal onto another by hydrolysis, most commonly for decorativepurposes or to prevent corrosion of a metal.

118. (b) Static friction is the highest while rolling friction is the lowest among rolling, sliding and static friction

119. (d) Rabi crops or rabi cultivated during winters and harvested in springs. Wheat, barley, gram, peas, mustard, rapeseed and linseed are the examples of Rabi crops. The season of Rabi crops starts from October and ends in march).So paddy is not a rabi crop.

120. (b) In north India legumes are grown as fodder in one season and cereal crops like wheat is grown in another season. This method is known as crop rotation. This helps in the replenishment of the soil with nitrogen. Another method of nutrient enrichment is crop rotation. This can be done by growing different crops alternately with each other. Manures are rich in various nutrients and organic matter, so addition of manures is also very helpful.

121. (c) Water gets filled in the dropper because water or any fluid moves from high pressure to low pressure

122. (b) Frequency

So, = 120 oscillation/min or 2 oscillation/sec = 2 Hz

123. The correct option is 1

Object distance and image distance remain same in the case of plane mirror.

123. (b)

124. (c) Metal are the substance that form naturally. Metals are inorganic which means they are made of substance that were never alive.

Metals are ductile. They can be drawn into wires.

- Metals are a good conductor of heat and electricity.
- Metals are sonorous. It means when we strike them, they make a ringing sound.
- Metal oxides are basic in nature. Because they react with weak acids to produce salt and water.

125. (a) Thermoplastic: Plastic which gets deformed easily on heating and can be bent easily are known as thermoplastics. Polythene and PVC are some of the examples of thermoplastics.

Thermosetting plastic ; Plastics which are made up from long chains of molecules that are cross linked. They have very rigid structure.

Melamine; Plastic which is found in many reusable plates utensils and cups.

Bakelite ;Polymer made up of the monomer phenol and formaldehyde This phenol formalehyde resin is thermosetting polymer.

126. (b) Prejudice: an unfair feeling of dislike for a person or group because of race, sex, religion, etc.

Stereotypes: an often unfair and untrue belief that many people have about all people or things with a particular characteristic.

Discrimination means treating some people differently from others.

"Diversity" is defined as "the practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations, etc."

127. (b) The duties of a Patwari include recording all the crops grown in the village, to keep updated records of all the lands and their ownership. The Patwari also collects land revenues, irrigation dues, and other taxes. The Patwari is known by different names in different states - in some villages, such officers are called Lekhpal, in others Kanungo or Karamchari or Village Officer.

128. (a) Technology is also a man-made resource. When humans use natural things to create something new that brings convenience and value to our lives, it is called man-made resources.

129. (c) There are three Components of Maps – distance, direction and symbol. Maps are drawings, which reduce the entire world or a part of it to fit on a sheet of paper.

130. (c) Even though an aquarium is a functioning ecosystem, it is not a natural ecosystem. It is an artificial ecosystem. A natural ecosystem is the result of interactions between organisms and the environment and it does not need assistance from humans i.e., they are self sustaining. Few examples include deserts, forests, oceans, lakes, etc.

131. (d) Mushroom rocks are found in the deserts. These landforms are formed from the erosion of the rocks. When the erosive power increases from the ground level, the rocks that are resistant take the shape of mushroom with a large top and a small neck.

132. (b) A moraine is material left behind by a moving glacier. This material is usually soil and rock. Just as rivers carry along all sorts of debris and silt that eventually

builds up to form deltas, glaciers transport all sorts of dirt and boulders that build up to form moraines.

133. (d) The Constitution of India establishes a federal system of government. It contains all the usual features of a federation, such as two governments, division of powers, written constitution, the supremacy of the constitution, the rigidity of the Constitution, independent judiciary and bicameralism.

134. (d) Oxbow lakes are found in river valleys. An oxbow is a crescent-shaped lake lying alongside a winding river. The oxbow lake is created over time as erosion and deposition of soil changes the river's course.

135. (d) Biotics describe living or once living components of a community; for example organisms, such as animals and plants. Biotic may refer to: Life, the condition of living organisms. Biology, the study of life.

The hydrosphere is the combined mass of water found on, under, and above the surface of a planet, minor planet, or natural satellite.

An atmosphere is a layer of gasses that envelop an astronomical object, held in place by the gravity of the object. A planet retains an atmosphere when the gravity is great and the temperature of the atmosphere is low.

The lithosphere is the solid, outer part of Earth, including the brittle upper portion of the mantle and the crust.

136. (a) In 1812, Raja Ram Mohan Roy, founder of Brahmo Samaj, began to champion the cause of banning sati practice. He was motivated by the experience of seeing his own sister-in-law being forced to die by sati.

137. (d) Jamshedpur Steel Plant/Tata Iron and Steel Company Limited: Located in Jamshedpur, Jharkhand. This steel plant has a strategic location at the confluence of the Subarnarekha River and Kharkai River.

138. (c) The English Education Act was introduced in the year 1835. English was to be made the medium of instruction for higher education. Lord William Bentick passed the act. Lord Macaulay presented his education policy titled “Minute on Indian Education” in the year 1835.

139. (d) The hymns in the Vedas have been referred to as 'Sukta' which means 'well-said'.

Chariots: a two-wheeled vehicle drawn by horses, used in ancient racing and warfare.

Yajna in Hinduism refers to any ritual done in front of a sacred fire, often with mantras. Yajna has been a Vedic tradition, described in a layer of Vedic literature called Brahmanas, as well as Yajurveda.

Dasa is a Sanskrit word found in ancient Indian texts such as the Rigveda and Arthasastra. The term 'dasa' means slave.

140. (c) Indus is the most important river flowing through Ladakh. The rivers form gorges and deep valleys in Ladakh. Many glaciers are found in Ladakh. An example of an important glacier found in Ladakh is the Gangri glacier.

141. (a) A dwarf planet, as defined by the International Astronomical Union, is a celestial entity that orbits the sun. There are now five known celestial bodies in our Solar System that qualify as dwarf planets: Pluto, Eris, Ceres, Makemake and Haumea.

142. (b) Dholavira's location is on the Tropic of Cancer. It is one of the five largest Harappan sites and the most prominent of archaeological sites in India belonging to the Indus Valley Civilization. It is located on Khadir bet island in the Kutch Desert Wildlife Sanctuary in the Great Rann of Kutch.

143. (b) Firewood is an example of a conventional source of energy. It comes under a non-commercial group of conventional energy. Conventional sources of energy are available in limited quantity apart from hydro-electric power. Conventional sources include: firewood, cattle dung cake, coal, petroleum, natural gas and electricity (both hydel and thermal). Non-conventional sources include solar, wind, tidal, geothermal, biogas and atomic energy.

144. (d) Terrace farming method of farming uses "steps" that are built into the side of a mountain or hill. On each level, various crops are planted. When it rains, instead of washing away all of the nutrients in the soil, the nutrients are carried down to the next level. These steps prevent water from washing away the soil and plants.

145. (d) Every Gram Panchayat shall continue for a term of five years from the date appointed for its first meeting and no longer: Provided that a Gram Panchayat which is functioning immediately before the commencement of this Act shall continue till the expiration of its duration. The Panchayat is chaired by the president of the village, known as a Sarpanch.

146. (d) Mangal Pandey was the Indian soldier in the British Army, one of the key figures in India's first war of Independence. He was hanged to death for attacking his officers in Barrackpore, on 29th March 1857.

147. (c) Bahadur Shah Zafar and his wife Begum Zeenat Mahal were sent to prison in Rangoon in 1858. Bahadur Shah Zafar died in the Rangoon jail in 1862. After the death of Bahadur Shah Zafar, his family was shifted out of the Red Fort and given another place in Delhi to reside in.

148. (b) Many of Chanakya's ideas were written down in a book called the Arthashastra written in Sankrit. According to Kautilya, the Arthashastra is a comprehensive guide to statecraft. It provides instructions on effective governance, administration, and strategies for maintaining and expanding the power of the state.

149. (a) Baba Guru Nanak created sacred place which was known as dharmsal. It is now known as Gurudwara.

150. (a) The place where a river merges with a larger water body is known as the river's mouth. A river mouth is where a river flows into a larger body of water, such as another river, a lake/reservoir, a bay/gulf, a sea, or an ocean. At the river mouth, sediments are often deposited due to the slowing of the current, reducing the carrying capacity of the water.