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TNPSC

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Previous Year Questions

(2011 - 2019)



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TNPSC - PREVIOUS YEAR QUESTIONS

MATHS

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TNPSC - GROUP - I PRELIMS – 2011

PREVIOUS YEAR QUESTIONS

MATHS

1. $f(x) = \frac{1}{x^2}$ and $g(x) = e^{-9x}$ then $(f \circ g)(x)$ is.
 A) $\frac{1}{e^{18x}}$ B) $\frac{1}{e^{-18x}}$
 C) $\frac{1}{e^{-18x^2}}$ D) $\frac{1}{e^{18x^2}}$
2. Standard deviation of a set of 50 observation is 6.5. If value of each observation is increased by 5, then the standard deviation is.
 A) 2.5 B) 1.5
 C) 6.5 D) 1.0
3. What is the value of $\frac{(0.0104 - 0.002) \text{ of } 0.12 + 0.36 \times 0.002}{0.12 \times 0.12}$?
 A) 0.1001 B) 0.1101
 C) 0.12 D) 0.13
4. If $A = \begin{pmatrix} 1 & 4 \\ 2 & -1 \end{pmatrix}$, $f(x) = x^2 - 9$, then $f(x)$ is.
 A) $\begin{bmatrix} 8 & 5 \\ -5 & -8 \end{bmatrix}$ B) $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$
 C) -16 D) 12
5. A bought a horse for Rs.10,000 and sold it to B at 10% profit and B sold it to C at 10% loss. The amount paid by C is.
 A) Rs. 10,000 B) Rs.9,900
 C) Rs.9,999 D) Rs.11,000
6. The packing fraction of a face centered cubic lattice is .
 A) 36% B) 52%
 C) 68% D) 74%
7. A shopkeeper marks his goods to gain 30%. But he allows 10% discount for down cash payment. His profit per cent is.
 A) 20% B) 17%
 C) 15% D) 13%
8. Function(s) of statistics is/are.
 A) Collection of data.
 B) Compilation and tabulation of data.
 C) Analysis of data
 D) All of these.
9. The total expenditure of a family is Rs.1.080 and they are spending Rs.450, for food.

Then to draw a pie diagram the degree value is.

- A) 1350 B) 864
 C) 150 D) 100
10. Find out the missing observation of the following data with mean 5. 2,6,5,3,8,2,_, 9,7,7,6,4.
 A) 3 B) 2
 C) 1 D) 0
 11. Relative frequency is defined as.
 A) $\frac{\text{Total frequency}}{\text{Class frequency}}$ B) $\frac{\text{Class frequency}}{\text{Total frequency}}$
 C) $\frac{\text{Class frequency}}{\text{Total frequency}} \times 100$ D) None of these
 12. Marks obtained by 7 students in computer science are 45,40,60,90,80,65,55. The median value for the data is..
 A) 90 B) 60
 C) 80 D) 55
 13. Given the following :

Cause of Accident	Fire	Traffic	Falls	Burns	Falling objects	Misc
No. Of Accident	10	15	20	15	35	5

The suitable diagram for the above data is

- A) Bar – diagram B) Histogram
 B) C) Pie- diagram D) Squares
14. The table below gives the distribution of the age of women at the time of marriage:

Age group (in years)	No. of women
15 - 19	11
20 – 24	36
25 – 29	28
30 – 34	13
35 – 39	7
40 – 44	3
44 – 49	2



The given distribution is.

- A) Not continuous
- B) Continuous.
- C) Cumulative distribution
- D) Smoothened distribution

15. consider the following Statements:

Assertion (A) : Diagrams can be used for comparison only.

Reason (R) : Diagrams cannot study mathematical relationship.

Now select your answer according to the coding scheme given below:

- A) Both (A) and (R) are true
- B) (A) is true, but (R) is false.
- C) (A) is false, but (R) is true
- D) Both (A) and (R) are false.

GROUP – I PRELIMS – 2014

16. _____ is the binary equivalent of $(12)_{10}$

- (A) 0001 0010
- (B) 1100
- (C) 1101
- (D) 1010

17. The mean of 5 observations is 25, if one of the observation is excluded the mean becomes 20. The excluded number is.

- (A) 45
- (B) 40
- (C) 20
- (D) 10

18. The mean of first five prime number is.

- (A) 5.0
- (B) 4.5
- (C) 5.6
- (D) 6.5

19. If 'I' is the standard deviation of the elements α, β, γ . Then the standard deviation of the elements $\alpha + 3, \beta + 3, \gamma + 3$ is

- (A) I+3
- (B) I – 3
- (C) I
- (D) 3

20. If the arithmetic mean of 7, 5, 13, x and a be 10, then the value of x is.

- (A) 10
- (B) 16
- (C) 12
- (D) 15

21. If $\frac{P}{Q} = \frac{1}{3}$ then $\frac{27P-34Q}{36P-3Q}$ is

- (A) $\frac{14}{3}$
- (B) $\frac{-14}{3}$

- (C) $\frac{-25}{9}$
- (D) $\frac{25}{9}$

22. In 2013, the population of a town is 1, 25,000. If it is increased by 7% in the next year. Find the population in 2014.

- (A) 8750
- (B) 1,33,750
- (C) 1,16,250
- (D) 1,25,000

23. Salaries of Ravish and sumita are in ratio 2:3. If the salary of each is increased by Rs.4,000, the new ratio becomes 40:57 .What is Sumita's present salary?

- (A) Rs.32,000
- (B) Rs.34,000
- (C) Rs.38,000
- (D) Rs.40,000

24. Which is largest in 28%, 2.8%, $\frac{2}{9}$ and 0.25?

- (A) 28%
- (B) 2.8%
- (C) $\frac{2}{9}$
- (D) 0.25

25. A horse and two cows together cost Rs. 680. If a horse cost Rs.80 more than a cow then the ratio of cost of horse and cow is.

- (A) 7:5
- (B) 5:7
- (C) 8:9
- (D) 9:8

26. $\frac{1}{4}$ Of $\frac{3}{5}$ of $\frac{6}{5}$ of a number is 54. Then the number is.

- (A) 280
- (B) 300
- (C) 320
- (D) 350

27. If $A : B = \frac{1}{3} : \frac{4}{9}$, $B : C = \frac{5}{6} : \frac{7}{12}$, $C : D = \frac{2}{7} : \frac{5}{14}$ then A :B:C:D is

- (A) 40:28:35:30
- (B) 30:40:28:35
- (C) 28:30:40:35
- (D) 35:30:28:40

28. If $(3x+2y) : (3x-2y) = 5:2$. Then x: y is.

- (A) 5:2
- (B) 14:9
- (C) 9:14
- (D) 2:5

29. A rectangular carpet has an area of 60sq.m. Its diagonal and longer side together equals 5 times the shorter side. The length of the carpet is

- (A) 5 m
- (B) 12 m
- (C) 13 m
- (D) 14.5 m

30. The number of small cubes with edge 10 cm that can be accommodated in a cubical box of edge 1 m is

- (A) 10
- (B) 100

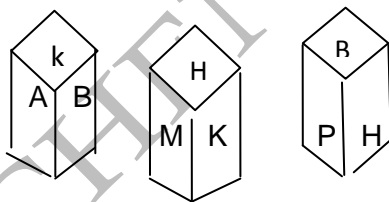


- (C) 1000 (D) 10000
31. The diameter of a sphere is 6cm. It is melted and drawn into a wire of diameter 2mm. The length of the wire is.
 (A) 12 m (B) 18 m
 (C) 36 m (D) 66 m
32. A uniform circular path of width 4 m is laid out around a circular park of radius 48m. Find the area of the circular path.
 (A) 1256 m^2 (B) 1255 m^2
 (C) 400 m^2 (D) 1254 m^2
33. If $B = 2$, $BALL = 27$ then $BOOK = ?$
 (A) 40 (B) 41
 (C) 42 (D) 43

34. Find the missing number:

	3		?	
7	11	27	5	
2	7	14	6	
	9	4		

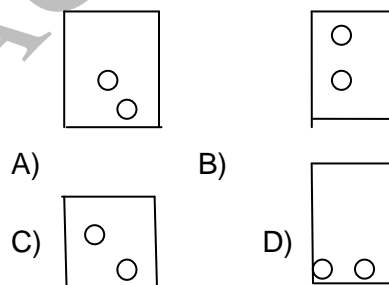
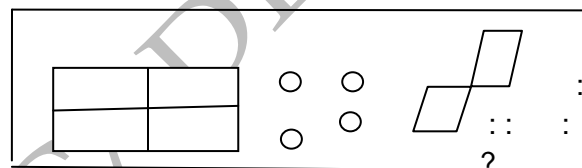
- (A) 10 (B) 9
 (C) 8 (D) 7
35. Three view of a cube are given below. What is the letter opposite to A?



- (A) H (B) P
 (C) B (D) M
36. If
 1. Rama scored more than Rani.
 2. Rani scored less than Rathna.

3. Rathna scored more than Rama and.
 4. Ramya scored more than Rama but less than Rathna then who scored the highest?

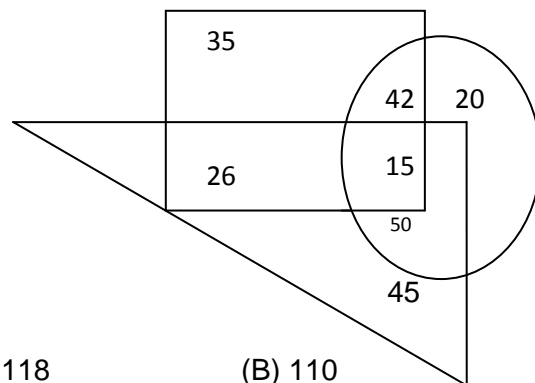
- (A) Rama (B) Rani
 (B) (C) Rathna (D) Ramya.
37. If $8 - 5 \times 4 = 44$ and $15 - 3 \times 3 = 48$ then $16 - 4 \times 5 = ?$
 (A) 0 (B) 69
 (C) 20 (D) 25
38. Find the next diagram :



39. If the sum of two numbers is 1020 and their difference is 140 then the numbers are.
 (A) 680,440 (B) 540,580
 (C) 580,440 (D) 520,500
40. The value of $\frac{2.48 \times 2.48 - 1.52 \times 1.52}{0.96}$ is
 (A) 4.0 (B) 4.4
 (C) 1.4 (D) 1.0
41. If $2^{x+y} = 2^{x-y} = 16$ then y is
 (A) 2 (B) 4
 (C) 0 (D) 1
42. If $x+y=12, xy=32$ then $1/x + 1/y$ is
 (A) $1/8$ (B) $1/2$
 (C) $1/4$ (D) $3/8$
43. $1 + \frac{1}{5}$ of $6\frac{3}{10} - \frac{2}{9} = ?$
 (A) 1 (B) 0
 (C) 2 (D) $1/2$



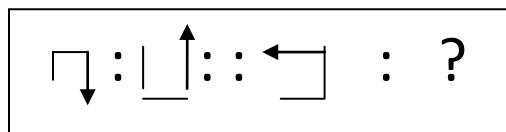
44. By selling an article for Rs.480, a person lost 20% for what amount should he sell it to make a profit of 20%?
(A) Rs.800 (B) Rs.760
(C) Rs.720 (D) Rs.680
45. The highest common factor and lowest common multiple of two numbers are 12 and 144 respectively. If one number is 36. Find the other number.
(A) 49 (B) 50
(C) 36 (D) 48
46. Three numbers are in the ratio 3:4:5 and their LCM is 240. Then the HCF of these numbers is.
(A) 4 (B) 8
(C) 12 (D) 20
47. LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280 then the other number is.
(A) 40 (B) 60
(C) 80 (D) 100
48. The compound interest on Rs.30, 000 at 7% per annum is Rs.4, 347. The period in years is
(A) 2 (B) $2\frac{1}{2}$
(C) 3 (D) 4
49. A sum of money doubles itself in 20 years in simple interest. Then the rate of interest per annum is.
(A) 5% (B) 4%
(C) 5.5% (D) 4.5%
50. The difference between compound interest and the simple interest on Rs.1,250 for 2 years at 8% is
(A) Rs. 2 (B) Rs.4
(C) Rs.6 (D) Rs.8
51. A flower garden is in the shape of a rhombus. The length of its diagonals is 18m and 25m. Find the area of the flower garden.
(A) 450m^2 (B) 225m^2
(C) 324m^2 (D) 18m^2
52. If a square and a rhombus stand on the same base, then the ratio of the area of the square and the rhombus is
(A) Greater than 1 (B) equal to 1
(C) equal to $\frac{1}{2}$ (D) equal to $\frac{1}{4}$
53. Two taps A and B can fill a tank in 10 hours and 15 hours respectively. Both the taps are opened for 4 hours and then B is turned off. The time taken by A to fill the remaining tank is.
(A) $\frac{12}{5}$ hours (B) $\frac{13}{10}$ hours
(C) 6 hours (D) $\frac{10}{3}$ hours
54. A and B can do a work in 12 days B and C can do it in 15 days C and A can do it in 20 days. Then the number of days required to complete the work A, B, C together is.
(A) 5 (B) 10
(C) 15 (D) 20
55. If 9 girls can prepare 135 garlands in 3 hours, number of girls to prepare 270 garlands in 1 hour is.
(A) 20 (B) 54
(C) 43 (D) 19
56. The sum of numbers common to two diagram is



- (A) 118 (B) 110
(C) 108 (D) 130
57. (1) D is taller than C but not as tall as B.
(2) C is taller than A.
Who among A, B, C and D is the tallest?
(A) A (B) B
(C) C (D) D



58. Find the next diagram:



- (A) (B)
 (C) (D)

59. Find the missing number in the following series:

1, 8, 9, 64, 25, ?, 49.

- (A) 210 (B) 212
 (C) 214 (D) 216

GROUP – I PRELIMS – 2015

62. Among the 50 students in a class, what percentage of students biology and chemistry?

Subjects	No. of . Students.
Mathematics	6
Physics	12
Chemistry	15
Biology	8
Computer science	9

- (A) 64% (B) 46%
 (C) 23% (D) 77%

63. For any n observation of data, what is the value of $(\sum x) - n\bar{x}$?

- (A) $n(\sum x)$ (B) $(n-2)\bar{x}$
 (C) $(n-1)\bar{x}$ (D) 0

64. Simplify: $\frac{0.728 \times 0.728 - 0.272 \times 0.272}{0.456}$

- (A) 0.456 (B) 1
 (C) 0.728 (D) 0.272

65. If $\frac{x}{y} = \frac{3}{5}$, then $\frac{5x+2y}{5x-2y}$ is equal to.

- (A) 3 (B) 5
 (C) $\frac{2}{5}$ (D) $\frac{5}{2}$

66. A Person's present age is two-fifth of the age of his mother. After 8 years, he will be one half of the age of his mother. How old is the mother at present?

- (A) 42 (B) 40
 (C) 45 (D) 48

67. Find the value of $\frac{1.2 \times 1.2 \times 1.2 - 0.2 \times 0.2 \times 0.2}{1.2 \times 1.2 + 1.2 \times 0.2 + 0.2 \times 0.2}$

- (A) 1.2 (B) 1
 (C) 0.2 (D) 1.4

68. A bicycle marked at Rs.1, 500 is sold for Rs.1, 350. What is the percentage of discount?

- (A) 12 (B) 15
 (C) 11 (D) 10

69. Which one of the following is the smallest ratio?

7:13, 17:25, 7:15, 15:23

- (A) 7:13 (B) 17:25
 (C) 7:15 (D) 15:23

70. In a mixture of 60 litres, the ratio of milk and water is 2:1. If this ratio is to be 1:2 then what is the quantity of water to be further added?

- (A) 20 L (B) 30L
 (C) 50 L (D) 60 L

71. Two numbers are in the ratio 3:5. If 9 be subtracted from each, then they are in the ratio 12:23. Find the second number.

- (A) 52 (B) 53
 (C) 54 (D) 55

72. Sum of square of three positive numbers is 608 and they are in the ratio 2:3:5. Then find the numbers.

- (A) 6, 9, 15 (B) 8, 12, 20
 (C) 10, 15, 25 (D) 14, 21, 35

73. If 30% of A = 0.25 of B = $\frac{1}{5}$ of C, then find the ratio A:B:C

- (A) 15:12:10 (B) 12:15:10
 (C) 10:12:15 (D) 10:15:12



74. What is the third proportional to 0.034 and 0.50?
A) 0.74 B) 0.75
C) 0.76 D) 0.77
75. In a cylinder, if radius is doubled and height is halved then what happens to the curved surface area?
A) Halved B) Doubled
C) Does not change D) Four times
76. The length of side of a rhombus is 5 m and one of its diagonal is 8m. Then what is the length of other diagonal?
A) 5m B) 7m
C) 6m D) 8m
77. A,B and C can complete a piece of work in 24,6 and 12 days respectively. If they work together, in how many days they will complete the same work?
A) $\frac{1}{24}$ day B) $\frac{7}{24}$ day
C) $\frac{24}{7}$ days D) $\frac{24}{11}$ days
78. 12 men complete the 2400 sq.m ploughing work in 10 days. How many men are required to complete 3600 sq.m ploughing work in 18 days?
A) 10 men B) 15 men
C) 18 men D) 20 men
79. 2 men and 7 boys can do a piece of work in 14 days, 3men and 8 boys can do the same in 11 days. In how many days, 3 times the work can be completed by 8 men and 6 boys?
A) 21 days B) 18 days
C) 24 days D) 36 days.
80. The length and height of a hall are 8m, 10m,4m, respectively and the hall has one door of area $3m \times 1.5m$. find the cost of painting the walls at the ratio of Rs.200 per square metre.
A) Rs. 28,800 B) Rs.59,900
C) Rs.27,900 D) Rs.60,800
81. If the capacity of a cylindrical tank is 1848 m³ and the diameter of its base is 14m, then find the depth of the tank?
A) 12m B) 14m
C) 15m D) 18m
82. The length of a chain used as the boundary of a semicircular park is 72m. What is the area of the park?
A) $77 m^2$ B) $91 m^2$
C) $126 m^2$ D) $308 m^2$
83. Find the least number which when divided by 5, 6, and 7 and 8 leaving a remainder 3, but when divided by 9 leaves no remainder.
A) 1677 B) 1683
C) 2523 D) 3363
84. Find the next number in the following series.
4,6,9,13 $\frac{1}{2}$
A) $20\frac{1}{4}$ B) $22\frac{1}{4}$
C) 19 D) $17\frac{1}{2}$
85. If the time taken by a cup of tea to cool from 85°C to 75 °C is 1 minute, then time taken by it cool form 65°C to 55 °C is
A) 50 Seconds B) exactly 1 minute
C) more than 1 minute D) 30 Seconds
86. What is the standard deviation of the first n natural numbers?
A) $\sqrt{\frac{n^2-1}{12}}$ B) $\sqrt{\frac{n^2+1}{12}}$
C) $\sqrt{\frac{n(n+1)}{2}}$ D) $\sqrt{\frac{n(n+1)(2n+1)}{6}}$
87. In the series.
6 4 1 2 2 8 7 4 2 1 5 3 8 6 2 1 7 1 4 1 3 2 8 6
How many pairs of alternate numbers have a different of 2?
A) 2 B) 4
C) 6 D) 8
88. If + means \times , \times means $-$, \div means $+$ and $-$ means \div then what is the value of $(175 - 25) \div (5 + 20) \times (3 + 10)$
A) 265 B) 78
C) 77 D) 35



89. In a geometric series, if the fourth term is $\frac{2}{3}$ and seventh term is $\frac{16}{81}$, then what is the first term of the series?
- A) $\frac{2}{3}$ B) $\frac{4}{9}$
C) $\frac{8}{27}$ D) $\frac{9}{4}$
90. Find the percentage increase in the area of a triangle if its each side is doubled.
- A) 100% B) 200%
C) 300% D) 400%
91. The sequence follows a regular pattern. Find the correct letter for question mark, to complete the sequence. C E I K O Q?
- A) R B) S
C) T D) U
92. Find the Least Common Multiple of $\frac{4}{5}$, $\frac{3}{10}$ and $\frac{7}{15}$.
- A) $\frac{84}{5}$ B) $\frac{5}{84}$
C) $\frac{2}{15}$ D) $\frac{12}{15}$
93. Three numbers are in the ratio 1:2:3. Their highest common factor is 12. Find the numbers.
- A) 12, 24, 36 B) 24, 48, 72
C) 12, 24, 48 D) 48, 60, 72
94. If the two numbers are in the ratio of 2:3 and the product of their highest common factor and least common multiple is 150, then find the sum of the numbers.
- A) 5 B) 10
C) 20 D) 25
95. Alex invested an amount of Rs.8,000 in a fixed deposit scheme for 2 years at compound interest rate 5% per annum. How much amount will Alex get on maturity of the fixed deposit?
- A) Rs.8,600 B) Rs.8,620
C) Rs.8,820 D) Rs.8,840
96. The difference between the compound interest and simple interest on a certain sum at 8% per annum for 2 years is Rs.240. Find the sum.
- A) Rs.35,000 B) Rs.35,700
C) Rs.37,500 D) Rs.40,000
97. If the rate of simple interest is 12% per annum, then find the amount that would get interest of Rs.6,000 per annum.
- A) Rs.82,000 B) Rs.50,000
C) Rs.72,000 D) Rs.45,000
98. Three solid metal cubes, whose edges are 6 cm, 8 cm and 10 cm are melted and a new cube is made. Find the length of edge of the new cube.
- A) 12 cm B) 24 cm
C) 20 cm D) 48 cm
99. Find the number in the place of question mark:
21, 25, 34, 50, ?, 111, 160
- A) 86 B) 72
C) 75 D) 59
100. A can do a work in 10 days and B can do the same work in 15 days. They earn Rs.1,500 together. How will they share this amount?
- A) Rs.850 and Rs.650
B) Rs. 900 and Rs.600
C) Rs. 950 and Rs.550
D) Rs.1,000 and Rs.500
101. If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same work in 2 days, then what is the time taken by 15 men and 20 boys to complete the same type of work?
- A) 4 days B) 5 days
C) 6 days D) 7 days.
102. A plot of land is in the form of a quadrilateral where one of its diagonals is 100m long. If two vertices on either side of this diagonal are 50 m away from the diagonal. Find the area of the plot of land.



- A) 5000 m² B) 1000 m²
C) 10000 m² D) 500 m²
103. If "NOIDA" is written as 39658, how will "INDIA" be written?
A) 36568 B) 63568
C) 63569 D) 65368
104. Read the following statements:
1. Either A and B are of the same age or A is older than B.
2. Either C and D are of the same age or D is older than C.
3. B is older than C.
Which one of the conclusions can be drawn from the above statements?
A) A is older than C
B) D is older than C
C) A is older than B
D) B and D are of the same age.
105. The minute hand of a circular clock is 14 cm long and that of hour hands is 7 cm. Find how far does the tip of the minute and hour hand move in 30 minutes?
A) 88cm, 3.66 cm B) 22 cm, 0.915 cm
C) 44 cm, 1.83 cm D) 1.83 cm, 88 cm
106. A heap of paddy is in the form of a right circular cone whose diameter is 4.8m and height 1.8m. If the heap is to be covered exactly by a canvas to protect it from rain, find the area of the canvas required.
A) 22.6 m² B) 27.2 m²
C) 13.6 m² D) 11.3 m²
107. If $a^x = b$, $b^y = c$, $c^z = a$, then what is the value of xyz ?
A) 3 B) 4
C) 9 D) 1
- A) 24m B) 21m
C) 30m D) 27m
109. 1, 4, 9, 11, 14, 16, ----- next to 16 is
A) 19 B) 17
C) 18 D) 16
110. A man can do a work in 3 days alone and a women can do the same work in 9 days alone. If both are work together in how many days they finished the same work.
A) $\frac{14}{9}$ days B) 6 days
C) $2\frac{1}{4}$ days D) $3\frac{1}{2}$ days
111. Work in a fort for 300 men had provision for 90 days after 20 days 50 men left the fort. How long would the food last at the same rate?
A) 160 days B) 210 days
C) 84 days D) 80 days
112. Simplify: $\frac{\sqrt[3]{729} - \sqrt[3]{27} + \sqrt[3]{729}}{\sqrt[3]{512} + \sqrt[3]{343} - \sqrt[4]{256}}$
A) $\frac{11}{10}$ B) $\frac{10}{11}$
C) $\frac{9}{10}$ D) $\frac{12}{11}$
113. How many years will take certain amount to double at 8% interest per annum at simple interest?
A) $13\frac{1}{2}$ years B) $12\frac{1}{2}$ years
C) $10\frac{1}{2}$ years D) 9 years
114. Surface Area of a hemisphere is 2772 cm² then the total surface area of hemisphere is
A) 4158 cm² B) 3172 cm²
C) 3882 cm² D) 4258 cm²
115. Choose the correct option to complete the alphabet letter series ---- ABA ---- CABC --- DCBA ---- BAB ----- A
A) ABDCA B) BCADC
C) ABCDD D) CBDAA
116. Simplify : $\frac{x+3}{x^3-1} + \frac{3x+9}{x^2+x+1}$
A) $\frac{1}{3x+1}$ B) $3x + 1$
C) $3x - 3$ D) $\frac{1}{3x+1}$
117. Sasi purchased a house for Rs. 27,75,000 and spent Rs.2,25,000 on its interior

GROUP – I PRELIMS – 2017 **MATHS**

108. There are 8 mango trees in a straight line. The distance between each mango tree with other is 3 metres. What is the distance between the first and the eighth tree?



- decoration. He sold the house to make a profit of 40%. What is the selling price of the house?
- A) Rs.31,20,000 B) Rs. 36,00,000
C) Rs.42,00,000 D) Rs.48,00,000
118. Simplify: $(1350 \div 15 - 5)$ $(47.5 - 15 \times 2.5)$
A) 85 B) 10.5
C) 10.5 D) 8.5
119. Choose the correct option to complete the alphabet letter series.
AB ---- B, BC--- C, ----AB ----, AB ---- B
A) CCAAC B) CBABC
C) CACAC D) BCCAB
120. What should come in place of the question mark in the following series?
24, 536, 487, 703, 678, ?
A) 736 B) 842
C) 742 D) 836
121. Sum to n terms of an Arithmetic progression is $2n^2 + n$ then eighth term is
A) 136 B) 36
C) 131 D) 31
122. a, b, c are said to be in Harmonic Progression if their reciprocals $\frac{1}{a}, \frac{1}{b}, \frac{1}{c}$ are in Arithmetic progression. What would be the value of x for which 3, x , 6 are in Harmonic progression.
A) $4\frac{1}{2}$ B) 4
C) 5 D) $5\frac{1}{2}$
123. Value of $\sqrt{3, \sqrt{3, \sqrt{3, \sqrt{3} \dots}}}$
A) 3 B) infinity
C) 0 D) $\sqrt{3}$
124. Introducing a girl, Raj said, "Her mother is the only daughter of my mother-in-law". How is Raj related to the girl?
A) Uncle B) Father
C) Brother D) Husband
125. A fraction is such that if the numerator is multiplied by 2 and the denominator is reduced by 4 we get $\frac{10}{3}$,
But if the numerator is increased by 6 and the denominator is doubled we get $\frac{11}{14}$, what is the fraction?
A) $\frac{7}{5}$ B) $\frac{5}{7}$
C) $\frac{21}{17}$ D) $\frac{17}{21}$
126. A boy cut a sector containing an angle of 140° from a circle of radius 15 cm and he folded the sector into a cone. What is the curved surface area of the cone ($\pi = \frac{22}{7}$)
A) 572 sq.cm B) 527 sq. cm
C) 275 sq.cm D) 257 sq.cm.
127. If radii of two cylinders are in the ratio 5: 3 and their heights are in the ratio 3:5 then ratio of their volumes is
A) 5:5 B) 3:3
C) 9:25 D) 5:3
128. Product of two position number is 34560. The LCM is sixty times of its GCD. Then the difference of LCM and GCD is
A) 1416 B) 1424
C) 1460 D) 1464
129. Find the compound interest on Rs. 31,250 at 8% p.a for 3 years compounded annually?
A) Rs. 8006 B) Rs. 8106
C) Rs. 8096 D). 8116
130. A number is increased by 10% and then decrease by 10%. Find the net decrease percent.
A) 0% B) 1%
C) 2% D) 3%
131. A school boy walks from his house to school at the rate of 4 kmph. He reaches the school 20 minutes earlier than the schedule time. If he walks at the rate of 3 kmph, he reaches the school 20 minutes late. What is the distance of the school from his house?
A) 12 km B) 480 km
C) 21 km D) 8 km
132. If $\frac{1}{2(2x+3y)} + \frac{12}{7(3x-2y)} = \frac{1}{2}$ and $\frac{7}{2x+3y} + \frac{4}{3x-2y} = 2$ then values of x and y are respectively



- A) 2, 1 B) 1, 2
C) -1, -2 D) -2, 1
133. The radii of two right circular cylinders are in the ratio 4:3 and their heights are in the ratio 7:4 then the ratio of their curved surface areas is in the ratio
A) 3:5 B) 5:3
C) 3:7 D) 7:3
134. A wall to be constructed with length 60m, breadth 3 m height 5m. How many bricks are required to construct a wall with length 30 cm, breadth 15 cm and height 20cm?
A) 1,50,000 B) 1,25,000
C) 1,00,000 D) 1,75,000
135. The ratio of boys and girls in a class 4:5 if the number of boys is 24, find the number of girls
A) 20 B) 19
C) 16 D) 30
136. In a certain code word ACEG is written as 16 and DFGH is written as 25 then how can be written HIKM
A) 36 B) 41
C) 40 D) 39
137. If $1^2+2^2+2^2=3^2$
 $2^2+3^2+6^2=7^2$
 $3^2+4^2+12^2=13^2$
then $6^2+7^2+42^2=?$
A) 45^2 B) 49^2
C) 43^2 D) 42^2
138. A certain sum of money amounts to Rs. 20,160 in 5 years at 8% interest. Find the principal
A) Rs. 14,000 B) 14,100
C) 14,440 D) 14,400
139. How many prime numbers lie between 1 to 100
A) 26 B) 25
C) 24 D) 20
140. The value of $\sqrt[3]{0.015625}$
A) 0.05 B) 0.25
C) 0.5 D) 2.5
141. Median of 12, 17, 5, 8, 13, 6, 9 is
A) 8 B) 9
C) 12 D) 17
142. Range and Range coefficient of the data -3, -2, -1, 0, 1, 2, 3, are respectively
A) 0 and 6 B) 6 and 0
C) 0 and 0 D) 6 and ∞
143. Find out unknown number?
20 13 07
30 08 22
40 ? 28
A) 10 B) 12
C) 16 D) 20
144. The diameter of a circle is 10 cm. "p" is the point lying outside the circle. From that point "p" two tangents are drawn to the circle. The length of each tangent is 12 cm. What is the distance between "p" and the centre of the circle.
A) 12cm B) 13 cm
C) 15cm D) 10cm
145. Raju starts walking towards south. After walking 20 m he turns towards North and walks 8 m. Again he turns towards East and walks 5 m. How far and in which direction is he from his starting point.
A) 15 m, south B) 17m, North-West
C) 7m, East D) 13m, South-East
146. The sides of 14 Squares are 11 cm, 12cm, 13 cm, 24 cm, then find the total area of 14 squares.
A) 3515 cm^2 B) 4515 cm^2
C) 2115 cm^2 D) 3215 cm^2
147. A Train travelled a certain distance at a uniform speed. If the train had been 7km/hr faster, it would have taken 14 hours less than the scheduled time. If the train were slower by 3 km/hr then it would have taken 10 hours more than the scheduled time. Find the distance covered by the train.
A) 600 Km B) 700 Km
C) 800 Km D) 900 Km



148. Find the average of first 'n' natural numbers

- A) $\frac{n(n+1)}{2}$ B) $\frac{n(n+1)(2n+1)}{2}$
C) $\frac{n+1}{2}$ D) n^2

149. A gardener wanted to reward a girl for her good deeds by giving some apples. He gave 2 apples on the first day, 4 on the second day, 8 on the day, 16 apples on the fourth day and so on for ten days. How many apples did she get from the gardener at the end of the tenth day

- A) 1024 B) 2060
C) 1760 D) 2046

150. Using the clay, Malar makes a cone, a hemisphere and a cylinder have equal bases and the heights of the cone and a cylinder are equal. They same as the common radius then find the ratio of their respective volumes.

- A) 1 : 2 : 3 B) 1 : 2 : 4
C) 1 : 2 : 5 D) 1 : 2 : 6

151. Spherical metal ball of radius 6 cm is melted and casted into small spherical balls having diameter 6 mm. How many small balls can be casted

- A) 8000 B) 1000
C) 6000 D) 2000

152. The radii of two circular ends of a frustum shaped bucket are 15 cm and 8 cm. If its depth is 63 cm, find the capacity of the bucket in litres (Take $\pi = \frac{22}{7}$)

- A) 2.6994 litres B) 26.994 litres
C) 269.94 litres D) 2699.4 litres

153. The present age of A and B are in the ratio 4:5 and after five years they will be in the ratio 5:6 then their sum of present age is

- A) 55 years B) 45 years
C) 35 years D) 25 years

154. If A and B can do a work in 6 days. B and C do it in 12 days, C and A can do it in 4 days how many days it would take to finish the same work by all the three together?

- A) 8 days B) 4 days

- C) 10 days D) 2 days

155. A and B can complete a work individually in 12 days and 18 days. They started doing the work together but after 4 days A had to leave and B alone completed the remaining work. The whole work completed in

- A) 30 days B) 20 days
C) 12 days D) 8 days

156. A Function $f: (-7, 6) \Rightarrow \mathbb{R}$ is defined as follows $f(x) = x^2 + 2x + 1$ $-7 \leq x < -5$

$$\begin{cases} X+5 \\ X-1 \end{cases} \begin{cases} -5 \leq x \leq 2 \\ 2 < x < 6 \end{cases} \text{ what is the}$$

Value of $\frac{4f(-3) - 2f(4)}{f(-6) - 4f(1)}$?

- A) $\frac{2}{7}$ B) $\frac{7}{2}$
C) 2 D) $\frac{1}{2}$

157. Mala and Latha each had a number of bangles. Mala said to Latha "If you give me 4 of your bangles, my number will be thrice yours". Latha replied "If you give me 36, my number will be thrice yours". What is the total bangles together with them?

- A) 70 B) 80
C) 90 D) 100

GROUP - I [PRELIMS] - 2019
MATHS

158. In a right triangular ground, the sides adjacent to the right angle are 50 m and 80 m. Find the cost

- of cementing the ground at Rs.5/sq.m
(A) Rs 20,000 (B) RS 15,000
(C) Rs 10,000 (D) Rs 12,500

159. The average of 5 numbers is 180. If one of the numbers is removed then the average becomes 155.

Find the removed number?

- (A) 240 (B) 280
(C) 320 (D) 360



160. A person crosses 600 m long street in 5 minute. What is his speed in km per hour.
(A) 3.6 (B) 7.2
(C) 8.4 (D) 10
161. A man travelled $\frac{2}{11}$ of his journey by coach, $\frac{17}{22}$ by rail and walked the remaining 1 km.
How far did he go?
(A) 22 km (B) 20 km
(C) 33 km (D) 27 km
162. A ramp for unloading a moving truck has an angle of elevation of 30° . If the top of the ramp is 0.9 above the ground level then find the length of the ramp.
(A) 2 m (B) 1.5 m
(C) 1.8 m (D) 1.6 m
163. The Standard deviation of 10 values is 3. If each value in increase by 4. Find the variance of new set of Value.
(A) 30 (B) 12
(C) 9 (D) $\sqrt{3}$
164. Find the next term of this sequence 11, 13, 17, 19, 23, _____.
(A) 25 (B) 27
(C) 29 (D) 31
165. Find the mean of 2, 4, 6, 8, 10, 12, 14, 16.
(A) 10 (B) 9
(C) 12 (D) 14
166. Shyam's monthly income is Rs.12,000. He saves Rs.1200. Find the percent of his savings and his expenditure.
(A) 10%, 80% (B) 10%, 90%
(C) 80%, 10% (D) 90%, 10%
167. Due to increase of 30% in the price of a colour TV the sale is reduced by 40%.
What will be the
Percentage change in income?
(A) 10% increase
(B) 10% decrease
(C) 35% decrease
(D) 22% decrease
168. Find the least number which when divided by 24, 32 and 36 leaves the remainders 19, 27 and 31 respectively.
(A) 280 (B) 290
(C) 283 (D) 300
169. If LCM of "a" and "b" is a and LCM of "b" and "c" is b, then what is the LCM of "c" and "a".
(A) a (B) b
(C) c (D) abc
170. Which one is correct?
(A) $-\frac{3}{5} < \frac{-13}{40} < \frac{-15}{80} < \frac{-1}{20} < \frac{1}{2}$
(B) $-\frac{3}{5} < \frac{-1}{20} < \frac{-13}{40} < \frac{-15}{80} < \frac{1}{2}$
(C) $-\frac{15}{80} < \frac{-13}{40} < \frac{-1}{20} < \frac{-3}{5} < \frac{1}{2}$
(D) $\frac{1}{2} < \frac{-3}{5} < \frac{-1}{20} < \frac{-13}{40} < \frac{-15}{80}$
171. Simplify $\frac{x^2-25}{x+3} \div \frac{(x+5)^2}{x^2-9}$
(A) $\frac{(x-5)(x+3)}{(x-3)}$ (B) $\frac{(x-5)(x-3)}{(x+5)}$
(C) $\frac{(x+5)(x-3)}{(x+3)}$ (D) $\frac{(x+5)(x+3)}{(x-5)}$
172. Simplify $\frac{2}{7} - \left\{ \left(\frac{1}{4} \div \frac{2}{3} \right) - \frac{5}{6} \right\}$
(A) $\frac{168}{125}$ (B) $\frac{125}{160}$
(C) $\frac{125}{168}$ (D) $\frac{160}{125}$
173. The exterior angles of a pentagon are in the ratio 6:3:4:3:2. Find all its interior angles.
(A) $60^\circ, 120^\circ, 80^\circ, 160^\circ, 120^\circ$
(B) $80^\circ, 110^\circ, 150^\circ, 120^\circ, 80^\circ$
(C) $100^\circ, 170^\circ, 160^\circ, 40^\circ, 70^\circ$
(D) $60^\circ, 120^\circ, 100^\circ, 120^\circ, 140^\circ$
174. Which one of the following cannot be the sides of a triangle?
(A) 4, 5, 6 (B) 3, 4, 5
(C) 2, 3, 4 (D) 1, 2, 3
175. Without using logarithm table find approximate value for $\log_{10} 2$.
(A) 0.2401 (B) 0.3
(C) 0.3802 (D) 1.414



176. The cost of levelling and turfing a square lawn at Rs.2.50 per m^2 is Rs.13322.50. Find the cost of fencing if at Rs.5 per metre.
- (A) Rs. 1500 (B) Rs. 1380
(C) Rs. 1225 (D) Rs. 1460
177. The diameter of a semicircular grass plot is 70 m. Find the cost of fencing the plot at Rs. 12 per metre.
- (A) Rs. 7700 (B) Rs. 840
(C) Rs. 2160 (D) Rs. 4320
178. A circus tent is to be erected in the form of a cone surmounted on a cylinder. The total height of the tent is 49 m diameter of the base is 42 m and height of the cylinder is 21 m. Find the cost of canvas needed to make the tent, if the cost of canvas is Rs. 12.50/ m^2
- (A) Rs. 63552 (B) Rs. 65352
(C) Rs. 63525 (D) Rs. 65532
179. Calculate the compound interest on Rs.9,000 in 2 years when the rate of interest for successive years are 10% and 12% respectively.
- (A) Rs. 1,188 (B) Rs. 2,088
(C) Rs. 4,396 (D) Rs. 2,596
180. A certain sum of money in simple interest scheme amounts to Rs. 8,880 in 6 years and Rs.7,920 in 4 years respectively. Find the principal and rate percent
- (A) Principal = 6,000, rate=8%
(B) Principal=6,600, rate=8%
(C) Principal=6,000, rate=7%
(D) Principal=6,600, rate=7%
181. A fair die is rolled. Find the probability of getting a prime factor of 6
- (A) $\frac{2}{3}$ (B) $\frac{1}{3}$
(C) $\frac{5}{6}$ (D) $\frac{1}{2}$
182. Pocket money received by 7 students is given below.
Rs.42, Rs.22, Rs.40, Rs.26, Rs.23, Rs.43
Find the median.
- (A) Rs. 26 (B) Rs. 23
- (C) Rs. 28 (D) Rs. 22
183. The Range of the first 10 prime numbers is
- (A) 28 (B) 26
(C) 29 (D) 27
184. The students of a class donated Rs. 4624 for Chief Minister's State Relief Fund. Each student donated as many rupees as the number of students in the class. Find the number of students in the class
- (A) 64 (B) 68
(C) 62 (D) 78
185. The average height of 10 students in a class was calculated as 150cm. On verification it was found that one reading was wrongly recorded as 130 cm instead of 140cm. Find the correct mean height.
- (A) 150 cm (B) 152 cm
(C) 153 cm (D) 151 cm
186. What is Mean of all two digit Numbers?
- (A) 54.5 (B) 49.5
(C) 45.5 (D) 44.5
187. If $ax^2 - 28x + 49=0$ has equal roots. Then the value of a is
- (A) 1 (B) 2
(C) 3 (D) 4
188. Find the median of the data.
12, 14, 25, 23, 18, 17, 24, 20
- (A) 23 (B) 18
(C) 17 (D) 19
189. In a two digit number, the digit in the unit place is twice of the digit in the tenth place. If the digits are reversed, the new number is 27 more than the given number. Find the number.
- (A) 63 (B) 36
(C) 93 (D) 39
190. The population of a village is 32,000 40% of them are men 25% of them are women and the rest are children. Find the number of men and children.
- (A) 12200 men, 11800 children
(B) 12800 men, 11200 children
(C) 12220 men, 12200 children



- (D) 12200 men, 11200 children
191. Find the greatest number of four digits exactly divisible by 15, 21 and 27.
(A) 9999 (B) 9450
(C) 9854 (D) 8505
192. The GCD and LCM of two polynomials are $x + 1$ and $X^4 - 1$ respectively. If one of the polynomials is $x^2 + 1$. Find other one.
(A) $x^3 - 1$ (B) $(x + 1)(x^2 - 1)$
(C) $x^2 + x - 1$ (D) $x^2 - x + 1$
193. Find the Highest common Factor of $4p^2q^3r, 8p^3q^2r^2, 16p^2q^4r^3$
(A) $4p^2q^4r^3$ (B) $4p^2q^2r$
(C) $16p^2q^2r$ (D) $16p^2q^4r^3$
194. Simplify the following: $\frac{x^3}{x-2} + \frac{8}{2-x}$
(A) $x^2 - 2x + 4$ (B) $x^2 + 2x + 4$
(C) $x^2 - 2x - 4$ (D) $x^2 + 2x - 4$
195. Simplify: $\frac{m}{m+1} + \frac{1}{m+1} + \frac{1}{m^2-1}$
(A) m^2 (B) $\frac{m^2-1}{m^2}$
(C) $\frac{1}{m^2}$ (D) $\frac{m^2}{m^2-1}$
196. If $3a + 4b = 22$, $8a - 5b = -4$, then the value of $(a+b)^2 = ?$
(A) 36 (B) 72
(C) 25 (D) 49
197. I have a box which has 3 green, 9 blue, 4 yellow, 8 orange coloured cubes in it.
a) What is the ratio of orange to yellow cubes?
b) What is the ratio of green to blue cubes?
c) How many different ratios can be formed, when you compare each colour to any one of the other colours?
- | (a) | (b) | (c) |
|---------|-----|-----------|
| (A) 3:1 | 1:2 | 10 ratios |
| (B) 1:3 | 2:1 | 4 ratios |
| (C) 1:2 | 3:1 | 12 ratios |
| (D) 2:1 | 1:3 | 12 ratios |
198. A troop has provisions for 276 soldiers for 20 days. How many soldiers leave the troop so that the provisions may last for 46 days.
- (A) 136 (B) 156
(C) 146 (D) 164
199. Using clay, a student made a right circular cone of height 48 cm and base radius 12 cm. Another student reshapes it in the form of sphere. Find the radius of the sphere.
(A) 12 cm (B) 15 cm
(C) 9 cm (D) 14 cm
200. The radius of a spherical balloon increases from 3 cm to 9 cm as air is being pumped into it. Find the ratio of volumes of the balloon in the two cases.
(A) 1: 3 (B) 1 : 9
(C) 1 : 27 (D) 1 : 8
201. If the circle with diameter 4 cm is inside of the circle with radius 10cm. Then the Maximum possible distance between the centres is
(A) 6 (B) 7
(C) 8 (D) 9
202. What is the half of the area of the triangle whose vertices are (1,1), (3,1), (1,3)?
(A) 1 (B) 2
(C) 4 (D) 5
203. A silver wire when bent in the form of a square encloses an area of 484 sqm. If the same wire is bent in the form of a circle, then find the diameter of the circle. (use $\pi = \frac{22}{7}$)
(A) 14 m (B) 28m
(C) 24 m (D) 7m
204. In how much time will a sum of Rs. 1600 amount to Rs.1852.20 at 5% per annum compound interest
(A) 2 years (B) 3 years
(C) 4 years (D) 5 years
205. If 123 represents "GOD", 456 represents "CAT", Then "DOG EAT EGG" may be represented by
(A) 321 456 411 (B) 321 756 811
(C) 321 856 911 (D) 321 756 711



206. Find the number of 3 digit natural numbers

(A) $\frac{2}{7}$

(B) $\frac{3}{7}$

which are divisible by 6

(A) 151

(B) 150

(C) $\frac{4}{7}$

(D) $\frac{5}{7}$

(C) 152

(D) 149

207. What is the probability that a leap year

selected at random will contain 53

Sundays?

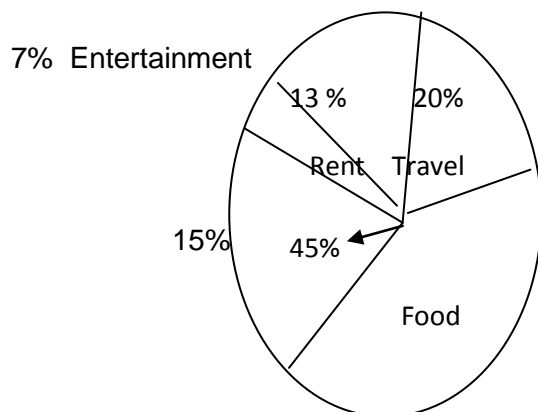
TNPSC - GROUP - I PRELIMS
PREVIOUS YEAR KEYS – MATHS

{	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	C	C	B	B	D	B	D	C	C	B	B	C	A	A	B	B	A	C	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B	C	B	C	A	A	B	B	B	B	C	C	A	D	C	A	C	B	A	C
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	A	C	D	B	C	D	A	C	A	A	D	B	B	D	B	B	A	B	B
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
D	B	D	B	B	B	B	D	C	D	D	B	C	A	C	C	C	A	A	C
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
A	D	B	A	C	A	A	C	D	C	D	A	A	D	C	C	B	A	C	B
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A	A	B	A	C	A	D	B	A	C	C	B	B	A	A	D		D	C	C
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
D	B	A	B	B		D	A	D	B	D	A	D	C	D	B	C	D	B	C
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
B	D	B	B	D	B	D	C	D	A	A	B	B	B	C	D	B	C	B	B
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
A	C	C	C	B	B	D	C	A	A	V	C	D	D	B	D	C	C	B	A
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
B	C	D	B	D	A	D	D	B	B	B	B	B	B	D	A	D	B	A	C
201	202	203	204	205	206	207													
C	A	B	B	D	B	A													



TNPSC - GROUP - II PRELIMS – 2012
PREVIOUS YEAR QUESTIONS
MATHS

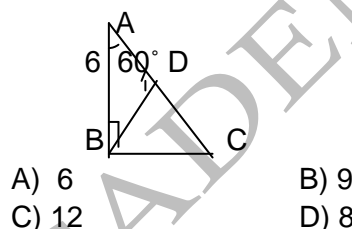
1. A man earns Rs. 28,000 s monthly salary. His expenditure and savings are given in the diagram. The percentage of savings compared to foods.



- A) 33.1% B) 33.7%
 C) 33.2% D) 33.3%
2. The Minimum no. of square size tiles to fill the floor of a room measuring $9m \times 6\frac{2}{5}m$ is
 A) 1240 B) 1400
 C) 1440 D) 1660
3. Ogive can be used to obtain
 A) Percentiles B) Mean deviation
 C) Skewness D) correlation
4. Of the three numbers, the second is half of the first and the third is three times the first. If the average of the three numbers is 27. The smallest numbers.
 A) 10 B) 9
 C) 8 D) 18
5. The three quartiles of a frequency distribution of marks obtained by male students are 20,40 and 50. The coefficient of quartile deviation is _____
 A) $\frac{1}{3}$ B) $\frac{1}{9}$
 C) $\frac{3}{7}$ D) 15
6. How many students does not like chemistry?

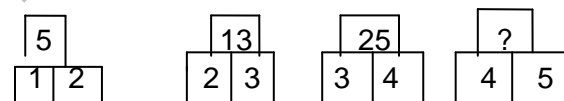
Subject	No.of studentns
Mathematics	6
Physics	12
Chemistry	15
Biology	8
Computer science	9

- A) 32 B) 35
 C) 41 D) 42
7. The length of CD is

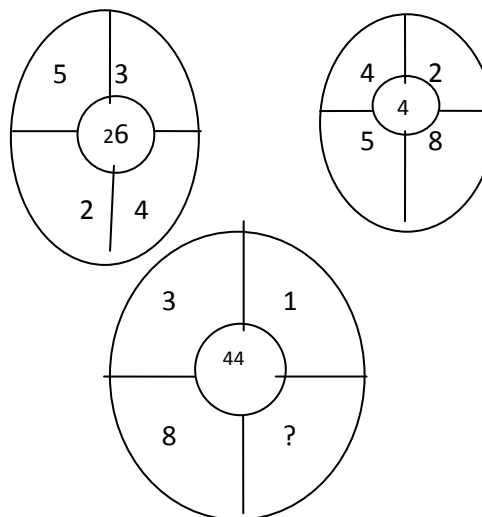


GROUP – II - 2013

8. Find the missing number in the place?



- A) 41 B) 35 C) 30 D) 28
9. Find the missing term

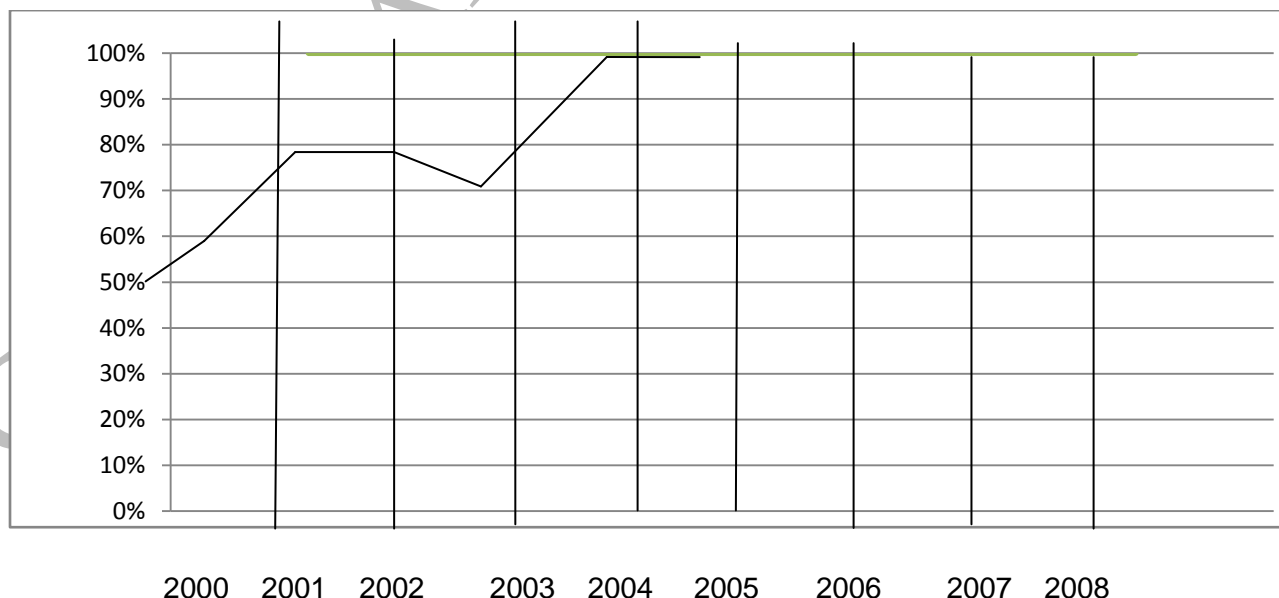


- A) 12 B) 18
 C) 16 D) 24



10. A sum was put at simple interest at a certain rate for 2 years. Had it been put at 3% higher rate, it would have fetched Rs. 300 more. Find the sum.
A) Rs. 5,000 B) Rs. 4,000
C) Rs. 10,000 D) Rs. 1,000
11. A and V can do piece of work in 10 days. B and C in 15 days, C and A in 18 days, In how many days can B alone do it?
A) 30 days B) 20 days
C) 12 days D) 18 days
12. In a certain code, LABOUR is written as KBAPTS. How is CANDID written in that code?
A) DBOEJE B) BBMCHC
C) DZOCJC D) BBMEHE
13. If the radius of a circle is increased by 25% then its area is increased by
A) 50% B) 25%
C) 56.25% D) 46.25%
14. In a mixture of 28 liters, the ratio of milk and water is 5:2 litres of water is added to the mixture, find the ratio of milk and water in the new mixture.
A) 2:1 B) 1:2
C) 2:3 D) 1:3
15. A, B and C together can finish a piece of work in 4 days. A alone can do in 12 days and B alone in 18 days. How many days will be taken by C to do it alone?
A) 10 days B) 12 days
C) 9 days D) 18 days
16. Find the value of
$$\sqrt{58 + \sqrt{31 + \sqrt{21 + \sqrt{11 + \sqrt{25}}}}}$$

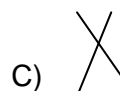
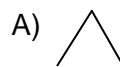
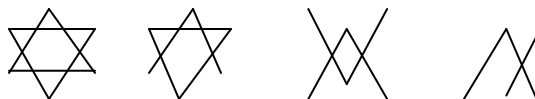
A) 7 B) 8
C) 9 D) 6
17. 5% income of X is equal to 15% income of Y and 10% income of Y is equal to 20% income of Z. If income of Z is Rs. 3,000 then total income of X, Y and Z Rupees is
A) 18,000 B) 12,000
C) 27,000 D) 16,000
18. From the following graph, find the percentage of increase in the from 2004 to 2005



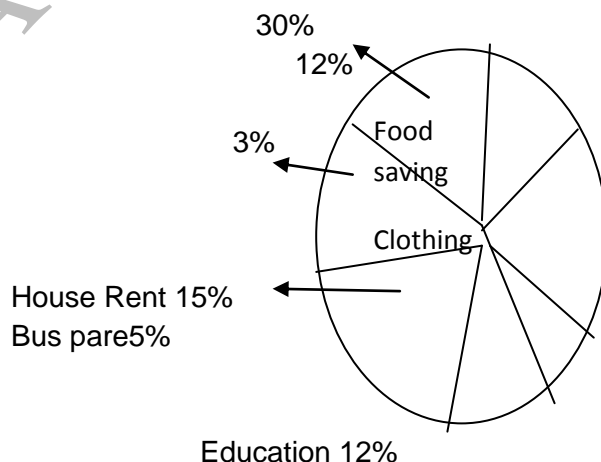


- A) 20% B) 50%
C) $66\frac{2}{3}\%$ D) $71\frac{2}{3}\%$
19. One litre of water is added to 5 liters of a 20% solution of alcohol in water. The strength of alcohol in the new solution is
A) $16\frac{2}{3}\%$ B) 15%
C) 20% D) 16%
20. If the cost of 12 Articles is equal to the selling price of 10 Articles, the profit percent in the transaction is
A) 48% B) $16\frac{2}{3}\%$
B) C) 20% D) 25%
21. The difference between the present ages of P and Q is 8 yrs and the ratio of their present ages is 2:3 respectively. What is P's Present age?
A) 16years B) 24 years
C) 12years D) 30 years
22. Divide Rs. 680 among A,B,C so that A gets 3 times more to B and B gets 4 times to C
A) Rs.160, Rs.40, Rs.480
B) Rs. 480, Rs.160, Rs.40
C) Rs. 480, Rs.40, Rs.160
D)Rs.160, Rs.480, Rs.40
23. The length, breadth and height of a room are respectively 12 metres, 9 metres and 6 metres. How many cubic boxes are needed to fill the room if the side of each box is 1.5 metres?
A) 1072 B) 648
C) 324 D) 192
24. If A's height is 25% less than that of B, then how much percent is B, height more than that of A?
A) 50% B) 45%
C) $22\frac{1}{2}\%$ D) $33\frac{1}{3}\%$
25. Five articles A, B, C, D and E are priced differently and the value of C is Rs. 100. If "A" is cheaper, than C but costlier than B /and "E is costlier than C but cheaper than D" then which of the article is the costliest?
A) B B) C

- C) D D) E
26. Find the next figure in the given sequence:-



28. The circle graph given shows the spending of a family on various items and its savings during a year. If the total income of the family is Rs. 75,000, Then the expenditure on Education was



- A) Rs.7, 500 B) Rs. 8,000
C) Rs.8, 500 D) Rs.9, 000
29. A, B, C at the same time in the same direction to run around a rectangular garden. A completes a round in 252 seconds. B in 308 seconds and C in 198 seconds starting at the same point. After what time will they meet again at the starting point?
A) 20 minutes 18 seconds
B) 40 minutes 20 seconds
C) 46 minutes 12 seconds



- D) 30 minutes
30. Find the greatest number which will divide 2112 and 2792 leaving the remainder 4 in each case
A) 63 B) 64
C) 68 D) 78
31. Rs.800 amounts to Rs.920 in 3 years at simple interest. If the interest rate is increased by 3% it would amount to
33. If 'HYDROGEN' is represented as JCJZYSSD, how "ANTIMONY" will be represented as.
A) CPVKOQPA B) CRZQWABO
C) ERXMQSRC D) GTZOSUTE.
34. Arrange in descending order:
 $\sqrt[3]{12}$, $\sqrt[4]{20}$, $\sqrt[6]{25}$, $\sqrt{80}$, $\sqrt[12]{112}$
A) $\sqrt{80}$, $\sqrt[3]{12}$, $\sqrt[4]{20}$, $\sqrt[6]{25}$, $\sqrt[12]{112}$
B) $\sqrt{80}$, $\sqrt[3]{12}$, $\sqrt[4]{20}$, $\sqrt[12]{112}$, $\sqrt[6]{25}$
C) $\sqrt[3]{12}$, $\sqrt{80}$, $\sqrt[4]{20}$, $\sqrt[6]{25}$, $\sqrt[12]{112}$
D) $\sqrt[6]{25}$, $\sqrt[12]{112}$, $\sqrt[3]{12}$, $\sqrt{80}$, $\sqrt[4]{20}$
35. Find the range of the following data:
25,67,78,43,21,17,49,54,76,92,20,45,86,37,35
A) 78 B) 75
C) 92 D) 86
36. A is B's sister, C is B's mother, D is C's father, E is D's mother. Then, A is the _____ of D.
A) Grand mother B) Grand father
C) Daughter D) Grand daughter.
37. A is richer than B, C is richer than A, D is richer than C, E is the richest of all. If they are made to sit in the above degree of richness, who will have the central position?
A) A B) B
C) C D) D
38. A hollow cylindrical iron pipe is of length 35 cm. Its outer and inner diameter are 10 cm and 8 cm respectively. Find the weight of the pipe if 1 cu.cm of iron weights 7 gm.
A) 6.93 kg B) 9.90 kg
C) 7.53 kg D) 7.93 kg
- A) Rs. 1,092 B) Rs.992
C) Rs. 1,882 D) Rs. 1,182
32. A table is sold for Rs. 414 at a profit of 15%. How much did it cost?
A) Rs. 400 B) Rs. 314
C) Rs.326 D) Rs.360
- GROUP – II - 2015**
39. Find the missing term in the given alphabet series. AZ,GT,MN,_____,YB.
A) JH B) SH
C) SK D) TS
40. 7 men can complete a work in 52 days. In how many days will 13 men finish the same work?
A) 20 days B) 13 days
C) 7 days D) 28 days
41. If $\frac{a}{b} = \frac{9}{5}$ then $\frac{a+b}{a-b} = ?$
A) $\frac{3}{7}$ B) $\frac{7}{3}$
C) $\frac{2}{7}$ D) $\frac{7}{2}$
42. Find the LCM of 4^5 , 4^{81} , 4^{12} and 4^7 .
A) 4^{12} B) 4
C) 4^2 D) 4^{-2}
43. Find the missing number in the following:
4242,4254,4266,4218,4278, _____
A) 4264 B) 4272
C) 4228 D) 4206
44. The average of 4 values is 20 and when a quantity is added to each value the average is 22. Find the quantity.
A) 1 B) 2
C) 3 D) 4
45. If $x + \frac{1}{x} = 2$, find the value of $x^3 + \frac{1}{x^3}$.
A) 1 B) 2
C) 3 D) 4
46. Find the HCF of $\frac{4}{9}$, $\frac{2}{5}$, $\frac{6}{8}$, $\frac{2}{5}$
A) $\frac{1}{180}$ B) $\frac{2}{481}$
C) $\frac{2}{350}$ D) $\frac{1}{142}$



47. Find the principal that yield a compound interest of Rs.1,632 in 2 years at 4% rate of interest per annum.
- A) Rs.10,000 B) Rs.20,000
C) Rs.30,000 D) Rs.40,000
48. Mohan started from point p and walked 2 m towards west. He then took a right turn and walked 3m before taking a left turn and walked 5m. He finally took a left turn, walked 3 m and stopped at a point Q. How far is point Q from point P?
- A) 2 m B) 6m
C) 7m D) 8m
49. Richard is fifteenth from the front in a column of boys. There were thrice as many behind him as there were in front. How many boys are there between Richard and the seventh boy from the end of the column?
- A) 33 B) 31
C) 35 D) 36
50. If 12 composers can compose 60 page of a book in 5 hours, how many composers will compose 200 pages of the book in 20 hours?
- A) 8 B) 10
C) 12 D) 11
51. If the length of a rectangle is decreased by 50% and the breadth is increased by 80%, then the % change in the area of rectangle is.
- A) Decreased by 10%
B) Increased by 10%
C) Decreased by 20%
D) Increased by 20%
52. The difference between simple and compound interest for a sum of Rs.5,000 lent at 12% per annum in 2 years is.
- A) Rs.720 B) Rs. 12
C) Rs. 72 D) Rs.700
53. What percent is 20 paise of 5 rupees 80 paise?
- A) $2\frac{13}{29}\%$ B) $3\frac{13}{29}\%$
C) $4\frac{13}{29}\%$ D) $5\frac{13}{29}\%$
54. A voluntary organization planted a total of 106 trees along the road side. Some of the trees Were fruit bearing trees. If the number of non-fruit bearing trees was two more than thrice the number of fruit bearing trees, what was the number of fruit bearing tress planted?
- A) 20 B) 22
C) 24 D) 26
55. If "ORIENT" is written as "532146" and "SOUL" is "7598", how will you write "LINE"?
- A) 9241 B) 8341
C) 8241 D) 6241
56. If 7 is related to 56 then 10 is related to.
- A) 74 B) 64
C) 50 D) 90

GROUP - II [PRELIMS] - 2018 MATHS

57. In how many years will a sum of Rs 1, 600 amount to Rs 1, 852.20 at 5% per annum compound interest?
- (A) 3 (B) 4
(C) 5 (D) 6
58. Simplify: $\left[-\frac{1}{3}\right] - \left\{1 \div \left(\frac{2}{3} \times \frac{5}{7}\right) + 8 - 5 - 12 - 14\right\}$
- (A) $2\frac{21}{60}$ (B) $-5\frac{41}{60}$
(C) $5\frac{41}{60}$ (D) $-2\frac{21}{60}$
59. Find the area of the iron sheet required to prepare a cone 24 cm high with base radius 7 cm
- (A) 704 cm^2 (B) 702 cm^2
(C) 700 cm^2 (D) 668 cm^2
60. The sum of the series $31+33+-----+53$ is
- (A) 729 (B) 341
(C) 504 (D) 604
61. Find the G.C.D of $a^3 - 1$ and $a^2 - 1$



- (A) $a^2 - 1$ (B) $a + 1$
(C) $a^3 - 1$ (D) $a - 1$
62. What percent is 5 grams of 1 Kg?
(A) 5% (B) 1 %
(C) 0.5% (D) 0.2%
63. The value of $\frac{9^2 \times 18^4}{3^{16}}$ is
(A) $\frac{2}{3}$ (B) $\frac{4}{9}$
(C) $\frac{16}{81}$ (D) $\frac{32}{243}$
64. The cube root of 0.027 is
(A) 3 (B) 0.003
(C) 0.03 (D) 0.3
65. If $\frac{a+b}{c} = \frac{b+c}{a} = \frac{c+a}{b} = k$, Then the value of k is
(A) 0 (B) 1
(C) 2 (D) $a + b + c$
66. The ratio of boys to girls in a class is 4:5. If the number of boys is 20, then the number of girls is
(A) 15 (B) 20
(C) 25 (D) 26
67. Given the pie chart, obtain the pass percentage of student who passed in 1st class
- | Category | Count |
|------------------------|-------|
| Passed in First class | 90 |
| Passed in Second class | 126 |
| Failed | 36 |
| Passed in Third class | 108 |
- (A) 35% (B) 30%
(C) 10% (D) 25%
68. At what rate of interest compound interest per annum will Rs. 640 amount to Rs.774.40 in 2 years
(A) 8% (B) 9%
(C) 10% (D) 11%
69. A circus tent is cylindrical to a height of 3 m and conical above it. If the base radius is 52.5 m and slant height of the cone is 53 m, find the area of canvas required to make the tent.
(A) $315 \pi \text{ m}^2$ (B) $3097.5 \pi \text{ m}^2$
(C) $2782.5 \pi \text{ m}^2$ (D) $2997.5 \pi \text{ m}^2$
70. Area of a square is $\frac{1}{2}$ hectare. The diagonal of the square is
(A) 250 metres (B) 100 metres
(C) $50\sqrt{2}$ metres (D) 50 metres
71. The surface areas of two spheres are in the ratio 9:25. Then their volumes are in the ratio
(A) 27 : 75 (B) 27 : 125
(C) 81 : 625 (D) 729 : 15625
72. Complete the series 1 ZA, 3 YB, 6 XC, 10WD, ?
(A) 14 VE (B) 15 UE
(C) 12 VE (D) 15 VE
73. The product of two numbers is 1600 and their H.C.F. is 5, the L.C.M. of the number is
(A) 320 (B) 1605
(C) 1595 (D) 8000
74. A man sells two wrist watches at Rs. 594 each. On one he gains 10% and on the other he loses 10%. Find his gain or loss percent on the whole
(A) Loss % = 90%
(B) Gain% = 5%
(C) Loss % = 1%
(D) Loss % = 7%
75. Simplify : $\frac{(3^3)^{-2} \times (2^2)^{-3}}{(2^4)^{-2} \times 3^{-4} \times 4^{-2}}$
(A) $7\frac{1}{9}$ (B) $7\frac{1}{8}$
(C) $6\frac{2}{9}$ (D) $6\frac{3}{8}$
76. The principal amount triples itself at 8% per annum over a certain time. Find the number of years.
(A) 20 years
(B) 25 years
(C) 30 years



- (D) 35 years
77. What number should be subtracted from each of the numbers 54, 71, 75 and 99 so that, the remainders may be proportional?
(A) 1 (B) 2
(C) 3 (D) 6
78. Six men working 10 hours a day can do a piece of work in 24 days. In how many days will 9 men working for 8 hours a day do the same work?
(A) 10 days (B) 15 days
(C) 20 days (D) 25 days
79. A can finish a job in 20 days and B can complete it in 30 days. They work together and finish the job. If Rs. 600 is paid as wages, then the share of A and B
(A) 240, 360 (B) 300, 300
(C) 360, 240 (D) 400, 200
80. If the average of the values 18, 41, x, 36, 31, 24, 37, 35, 27, 36 is 31. Find the value of x.
(A) 25 (B) 24
(C) 30 (D) 26
81. Find the difference between simple interest and compound interest for a sum of Rs. 8,000 lent at 10% p.a. in 2 years.
(A) Rs. 70 (B) Rs. 80
(C) Rs.90 (D) Rs. 100

TNPSC - GROUP - II PRELIMS PREVIOUS YEAR KEYS - MATHS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	C	A	B	C	B	B	A	A	A	D	D	C	A	C	B	C	C	A	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A	B	D	D	D	C	C	D	C	C	B	D	B	A	B	D	C	A	B	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
D	A	D	B	B	A	B	C	C	B	A	C	B	D	C	D	A	B	A	C
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
D	C	C	D	C	C	C	D	C	B	B	B	D	C	A	B	C	C	C	A
81																			
B																			



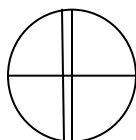
TNPSC - GROUP – II(A) PRELIMS – 2014

PREVIOUS YEAR QUESTIONS

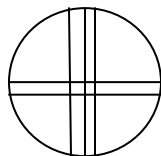
MATHS

1. Find the missed figure in the sequence.

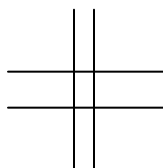
1)



2)

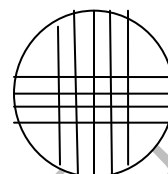


3)

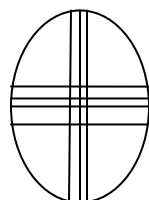


4) ?

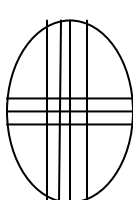
5)



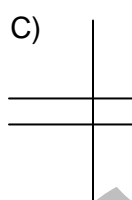
A)



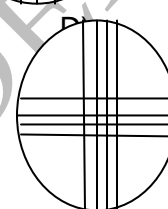
B)



C)



D)



2. Arrange the given words in a meaningful sequence:

1. Honey 2. Flower 3. Bee 4. Wax.

A) 1,3,4,2

B) 2,1,4,3

C) 2,3,1,4

D) 4,3,2,1

3. 30 percent of a number is 15 less than $\frac{3}{5}$ th of that number. What is the number?

A) 48

B) 52

C) 50

D) 70

4. When a number is divided by 13, the remainder is 11. When the same number is divided by 17, the remainder is 9. Then the number is.

A) 339

B) 369

C) 349

D) 359

5. The following table gives the life time of 500 CFL lamps:

Life time (months)	9	10	11	12	13	14	More than 14	Total
Number of lamps	26	71	82	102	89	77	53	500

A bulb is selected at random. The probability that the life time of the selected bulb is atmost 11 months is given by.

A) $\frac{82}{500}$

B) $\frac{179}{500}$

C) $\frac{97}{500}$

D) $\frac{268}{500}$

6. If 7 Spiders make 7 webs in 7 days, then 1 spider will make 1 web in how many days?

A) 1

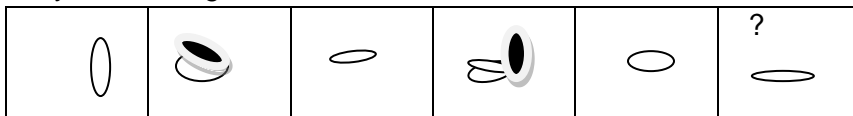
B) $\frac{7}{2}$



C) 7

D) 49

7. Identify the next figure:



A)



B)



C)



D)



8. Malini deposited Rs.7,000/- with a finance company for 3 years at an interest of 15% per annum. What is the compound interest and the amount that Malini will get after 3 years?

A) Compound interest - ₹ 3,246

Amount - ₹ 13,246

B) Compound interest - ₹ 3,646.

Amount - ₹ 10,646

C) Compound interest - ₹ 6,436

Amount - ₹ 16,046

D) Compound interest - ₹ 4,636

Amount - ₹ 14,636

9. The average salary of all workers in the factory ₹ 60. The average salary of 12 officers is ₹ 400. The average salary of rest is ₹ 56. Find the total no of workers in the factory.

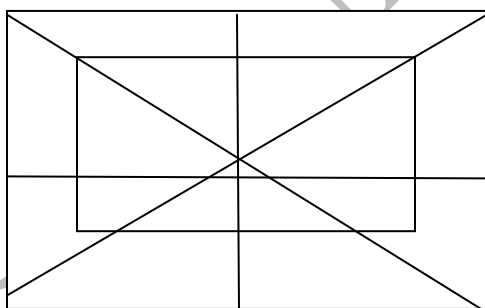
A) 1116

B) 1032

C) 1212

D) 1132

10. How many straight lines are there in the figure below?



A) 10

B) 12

C) 16

D) 8

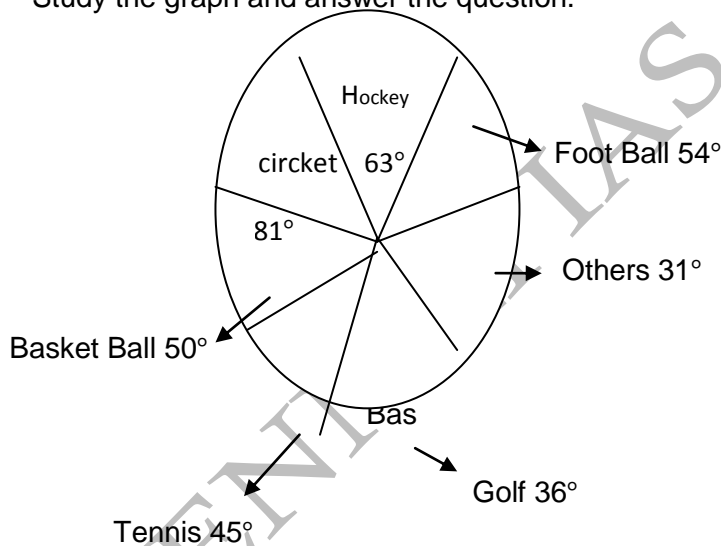


11. Find the missing number in the diagram.

4	5
20	9

10	8
80	18

- A) 25 B) 30
C) 96 D) None of these
12. The Sum of three prime numbers is 101. The difference of two of them is 24. What are the numbers?
A) 5,59,37 B) 41,53,7
C) 11,37,53 D) 3,61,37
13. A started from a place. After walking for a kilometer, in a direction, he turns to the left, then walking for a half kilometer; he again turns to the left. Now he is going eastwards. In what direction did he originally started?
A) West B) East
C) North D) South
14. The circle- graph given here shows the spending of a country on various sports during a particular year. Study the graph and answer the question.



What percent of the total spending is spent on Tennis?

- A) $12\frac{1}{2}\%$ B) $22\frac{1}{2}\%$
C) 25% D) 45%



15. The Sides of a triangle are in the ratio. $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$ and its perimeter is 104 Cm. The length of the longest side is,
A) 52 cm B) 48cm
C) 32 cm D) 26 cm.
16. If A's salary is 20% less than B's salary, by how much percent is B's salary more than A's?
A) 24% B) 25%
B) C) 20% D) 22 %
17. The Volume of a cube is 125cm^3 . The Surface area of the cube is
A) 625 cm^2 B) 125 cm^2
C) 150 cm^2 D) 100 cm^2
18. If 50% of $(x-y) = 30\%$ of $(x+y)$ then what percent of x is y ?
A) 25% B) 50%
C) 75% D) 100%
19. The least number which when increased by 1 is divisible by 12,18,24,32 is
A) 278 B) 288
C) 287 D) 279
20. The missing term in the series is 9,225,16,196,25,169,?, 144
A) 81 B) 121
C) 36 D) 49
21. Find x in $4^x \times 64^{2x} = 16^{x+5}$
A) 1 B) 5
C) 4 D) 2
22. At simple interest Rs.1,000 becomes Rs.1,150 in 3 years. If the interest rate is increased by 3% then the total amount is.
A) 1,400 B) 1,300
C) 1,140 D) 1,240
23. If 18% of the total number of oranges in a basket is 36. Then the total number of oranges is.
A) 100 B) 150
C) 200 D) 300
24. The ratio of the prices of two cows was 23:16. Two years later the price of the first cow rises by Rs.477 and that of the second by 10% and the ratio of their prices became 20:11. Find the original prices.
A) Rs.1,219, Rs.848 B) Rs.1,218, Rs.848
C) Rs.1,210, Rs.850 D) Rs.1,219, Rs.840
25. A ladder of 25ft length reaches a window which is 24ft above the ground level on the side of the street. Keeping its foot at the same point the ladder is turned the other side of the street and now reaches a window of 7 ft high. Then the width of the street.
A) 30 B) 32
C) 29 D) 31
- Group II (A) - 2016**
26. If $a : b = 6 : 7$ and $b : c = 8 : 9$ then $a : c$ is equal to?
A) 16:21 B) 6:9
C) 27:28 D) 1:2
27. Mean of 25 observations was found to be 78.4. But later it was found that 96 was mis-read as 69. Then the corrected mean is
A) 79.48 B) 76.54
C) 81.32 D) 78.4
28. Find the next alphabet in the sequence B, E, I, N, ?
A) U B) V
C) T D) S
29. If $\sqrt{784} + x = 78\%$ of 500, then the value of x is
A) 342 B) 352
C) 362 D) 372
30. Find the greatest number that will divide 43,91 and 183 so as to leave the same remainder in each case
A) 4 B) 7
C) 9 D) 13



31. Find the missing letters in the series AZ,GT, MN,?,?,YB
A) JH B) SH
C) SK D) TS
32. Murali's present age is half of his father's age. Before 10 years, his father's age was thrice his age. Find the present age of Murali and his father.
A) 16, 32 years B) 15, 30 years
C) 20, 40 years D) 17, 34 years
33. Find the length of the altitude of an equilateral triangle of side $3\sqrt{3}$ cm
A) 27 cm B) $9\sqrt{3}$ cm
C) 9 cm D) 4.5 cm
34. First pipe can fill a tank in 12 hours. Second pipe can fill the same tank in 6 hours. Third pipe in 4 hours. How long will it take to fill the tank if all the 3 pipes are opened simultaneously?
A) 2 hrs. B) 3 hrs.
C) 4 hrs. D) 12 hrs.
35. If $x^2 + 4y^2 = 4xy$, then $x:y$ is
A) 2:1 B) 1:2
C) 1:1 D) 1:4
36. A sum of Rs. 1,550 was lent partly at 5% and partly at 8% per annum at simple interest. The total interest received after 3 years was Rs. 300. The ratio of the money lent at 5% to the lent at 8% is
A) 5:8 B) 8:5
C) 16:15 D) 31:6
37. A sum of Rs.800 amounts to Rs.920 in 3 years at a simple interest. If the interest rate is increased by 3%. What would Rs. 800 amount to?
A) 950 B) 970
C) 992 D) 1000
38. At what rate of compound interest per annum will a sum of Rs. 1,200 become Rs. 1348.32 in 2 years
A) 6% B) 6.5%
C) 7% D) 7.5%
39. Seven men working 9 hours a day can do a piece of work in 30 days. In how many days will 10 men working for 7 hours a day do the same work?
A) 28 days B) 30 days
C) 32 days D) 27 days
40. If $5 \oplus 3 = 34$ and $6 \oplus 2 = 40$ then, the value of $7 \oplus 1$ is
A) 54 B) 34
C) 50 D) 30
41. Six bells commence tolling together; afterwards they toll at intervals of 2,4,6,8 and 12 seconds respectively, In 30 minutes, how many times do they toll together?
A) 4 B) 10
C) 15 D) 16
42. If $a/b = 4/5$ and $b/c = 15/16$ then, the value of $\frac{c^2 - a^2}{c^2 + a^2}$
A) $1/7$ B) $7/25$
C) $3/4$ D) $1/4$
43. Find out the odd number in the series given 25,36,49,81,121,169,225
A) 36 B) 49
C) 169 D) 225
44. A can do a certain job in 12 days. B is 60% more efficient than A. How many days does B alone take to do the same job?
A) 6 days B) $7\frac{1}{2}$ days
C) 8 days D) $8\frac{1}{2}$ days
45. If $5^a = 6$; $6^b = 7$; $7^c = 5$, then find the value of abc : -
A) 0 B) -1
C) 2 D) 1
46. The value of $\sqrt[x]{\sqrt[y]{\sqrt[z]{\sqrt[a]{a}}}}$ is
A) $\sqrt[y]{a^{xz}}$ B) $\sqrt[xy]{a^z}$
C) $\sqrt[xyz]{a}$ D) $\sqrt[x]{a^{yz}}$
47. How much time will it take for an amount Rs. 2,000 to double at a simple interest rate 8%
A) $25\frac{1}{2}$ years B) $10\frac{1}{2}$ years
C) $8\frac{1}{2}$ years D) $12\frac{1}{2}$ years



48. The length of a rectangle is increased by 60%. By what percent would the width have to be decreased so as to maintain the same area
A) 37 ½% B) 60%
C) 75% D) 120%
49. A sum of Rs. 53 is divided among ABC in such a way that A gets Rs. 7 more than what B gets and V gets Rs. 8 more than what C gets. The ratio of their share is
A) 16:9:18 B) 25:18:10
C) 18:25:10 D) 15:8:30
50. A cone, a hemisphere and a cylinder stand on equal bases and have the same height. Find the ratio of their volumes
A) 3:2:1 B) 1:2:3
C) 3:1:2 D) 1:3:2
- Group II (A) - 2017**
51. The area of a semi-circle of radius 7 c. m. is
A. 7 cm² B. 777 cm²
C. 77 cm² D. 7777 cm²
52. The value of $\frac{x^2-2x}{x^2+2x} \times \frac{3x+6}{x-2}$
A. 3x B. 3
C. 3x+2 D. x-2
53. A boy is now twice as old as his sister, four years ago, he was thrice as old as her what are their ages now?
A. 18, 9 B. 14, 7
C. 16, 8 D. 12, 6
54. $X^{3/2} : 9 = 16 : \sqrt{x}$. What is the value of x?
A. ± 16 B. ± 3
C. ± 4 D. ± 12
55. Total surface area of hollow hemisphere is equal to
A. $2\pi (R^2 + r^2)$ sq. units
B. $2\pi (R^2 - r^2)$ sq. units
C. $\pi(3R^2 + r^2)$ sq. units
D. $\pi(3R^2 - r^2)$ sq. units
56. The probability that a leap year will have 53 Fridays or 53 Saturdays is
A. 1/7 B. 2/7
C. 3/7 D. 4/7
57. Factorization of $(x+y)^2 + 9(x+y) + 8$ is
A. $(x+y+1)(x+y)$
B. $(x+y+1)(x+y+8)$
C. $(x+y+1)(x+y+6)$
D. $(x+y+8)(x+y+2)$
58. What is the difference between the sum of first 'n' odd natural numbers and that of first 'n' natural numbers?
A. $\frac{n}{2} + 1$ B. $\frac{n(n-1)}{2}$
C. $\frac{n(n+1)}{2}$ D. $\frac{n(n+1)(2n+1)}{6}$
59. Which of the following is arrange in correct ascending order?
A. 25% of 8, 40% of 6, 30% of 9, 20% of 15
B. 20% of 15, 25% of 8, 30% of 9, 40% of 6
C. 30% of 9, 40% of 6, 25% of 8, 20% of 15
D. 20% of 15, 30% of 9, 40% of 6, 25% of 8
60. Which of the following is larger in area?
A. A triangle with base 10 cm and height 8 cm
B. A triangle with sides 12 cm and 5 cm and 13 cm
C. An equilateral triangle whose sides are 10 cm each
D. A right angled triangle whose sides containing the right angle are 3 cm and 4 cm
61. The arithmetic mean of a group of 75 observation was calculated as 27. It was later found that one observation was wrongly read as 43 instead of the correct value 53. Obtain the correct arithmetic mean of the data.
A. 26. 13 B. 27. 13
C. 28. 13 D. 25. 13
62. A sum of money triples itself at 8% per annum over certain time. The number of years is equal to
A. 24 B. 25
C. 20 D. 12



63. The cylinder whose base is not in circular form is called
 A. Circular cylinder
 B. Right circular cylinder
 C. Oblique cylinder
 D. Irregular cylinder
64. 10 sq. m. is equal to
 A. 100 sq. cm B. 100 sq. cm
 C. 10000 sq. cm D. 100000 sq. cm
65. A ----- is often drawn as a guide, so that a frequency polygon can be drawn over the top.
 A. Frequency B. Histogram
 C. Cumulative Frequency D. Rectangle
66. If 100 person can finish a work in 7 days, how many persons can finish the same work 35 days?
 A. 20 persons B. 50 persons
 C. 30 persons D. 25 persons
67. What percent of an hour is 36 seconds?
 A. 6% B. 1%
 C. 10% D. 36%
68. $\left[\frac{x^m}{x^n}\right]^{m+n} \cdot \left[\frac{x^n}{x^1}\right]^{n+1} \cdot \left[\frac{x^l}{x^m}\right]^{l+m} = \dots$
 A) 1 B) -1
 C) x^{m+n+l} D) $\frac{1}{x^{m+n+l}}$
69. .If A = +, B = +, C + x and D = - then what is the value of $\frac{1}{5} C 2B \frac{1}{5} A \frac{1}{5} D \frac{1}{10} = ?$
70. The value of $\frac{x^3-1}{x+3} \div \frac{x^2+x+1}{3x+9} = ?$
 A) $3x - 1$ B) $3(x+1)$
 C) $3(x-1)$ D) $3x+2$
71. What is the 85th term of the sequence x, $x^{3/2}$, x^2 , $x^{5/2}$,?
 A. $x^{85/2}$ B. $x^{45/2}$
 C. x^{43} D. x^{44}
72. The radius and the slant height of a cone are respectively 'r' and 'l'. What is the volume of the cone?
 A) $\frac{1}{3} \pi r^2 \sqrt{l^2 - r^2}$ B) $\frac{1}{3} \pi r^2 \sqrt{l^2 + r^2}$
 C) $\pi r l$ D) $\pi r(l+r)$
73. What is the 21st term of the sequence 100, 95, 90, 85.....?
 A. 10 B. 20
 C. 0 D. 5
74. Simplify: $\frac{2x^4-162}{(x^2+9)(2x-6)}$
 A. X^2-9 B. $x+3$
 C. $x+6$ D. $x-6$
75. If the LCM of x and y is z, what is the H. C. F of x and Y?
 A. $\frac{xy}{z}$ B. $\frac{xz}{y}$
 C. $\frac{yz}{x}$ D. xy

TNPSC - GROUP – II (A) PRELIMS
PREVIOUS YEAR KEYS – MATHS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	C	C	C	B	C	C	B	B	B	C	D	A	A	B	B	C	A	C	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	D	C	A	D	A	A	C	C	A	B	C	D	A	A	C	C	A	D	C
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
D	B	A	B	D	C	D	A	B	B	C	B	C	D	C	C	B		A	C
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75					
B	B	B	D	B	A	B		A	C	C	A	C	B						



TNPSC - GROUP - IV PRELIMS - 2011

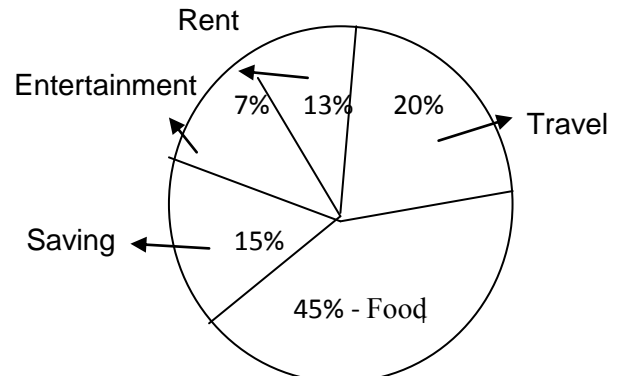
PREVIOUS YEAR QUESTIONS

MATHS

1. A fair die is rolled. The probability of getting an even number on the face of the die is
A) $1/4$ B) $3/4$
C) $1/3$ D) $1/2$
2. The area of a triangle with base 9 cm and height 12 cm is
A) 108 Cm^2 B) 21 Cm^2
C) 42 Cm^2 D) 54 Cm^2
3. The value of $5\sqrt{2} + \sqrt{32}$
A) $21\sqrt{2}$ B) $5\sqrt{2}$
C) $32\sqrt{2}$ D) $9\sqrt{2}$
4. If the principal is Rs. 3000 and rate of interest 4% then the difference between simple interest and compound interest is
A) Rs. 80.00 B) Rs. 4.80
C) Rs. 6.80 D) Rs. 48.00
5. 29,23,25,29,30,25,28 is
A) 29 B) 23
C) 28 D) 30
6. If $n(A) = 5$ then $n(P(A))$ is
A) 32 B) 16
C) 8 D) 64
7. The sum of the first 11 term of the A.P. 3,8,13,..... is
A) 380 B) 318
C) 308 D) 388
8. If $a=5, b=3$ then the value of a^2+ab is
A) 80 B) 40
C) 60 D) 45
9. The mid point of the line segment joining the points $(-1,-3)$ and $(-5,-7)$ is
A) $(3,5)$ B) $(-3,5)$
C) $(-3,-5)$ D) $(3,-5)$
10. The marked price of a bicycle is Rs.1.700. If the company gives 10% discount, then the selling price of the bicycle is
A) Rs.1.500 B) Rs.1.350
C) Rs.1.530 D) Rs.1.30

GROUP -IV - 2012

11. The harmonic mean and geometric mean of two values are 6.4 and 8 respectively. The values are
A) 8 and 8 B) 32 and 2
C) 4 and 16 D) 10 and 6
12. If the sum of 3 consecutive integers is 540 then integers are
A) 178,179,183 B) 176,186,178
C) 178,180,182 D) 179,180,181
13. From the group of 5 men and women, two persons are chosen at random. The probability that one of them is man and the other woman is
A) $2/5$ B) $3/5$
C) $5/9$ D) $4/9$
14. A box contains 4 red, 5 blue and 6 green balls of identical size. Two balls are drawn at random. The Probability that one is blue and the other is green is
A) $5 \times 6 / 15 \times 14$ B) $5 \times 6 \times 2 / 15 \times 14$
C) $4 \times 5 / 15 \times 14$ D) $4 \times 5 \times 2 / 14 \times 15$
15. Five boys A,B,C, D & E are sitting in a park in a circle. A is facing south west D is facing south east. B and E are right opposite to A and D respectively and C is equidistant between D and B. Which direction is C facing to?
A) West B) South
C) North D) East
16. A man earns Rs. 28.000 as monthly salary. His expenditure and savings are given in the diagram. How much did he spend on entertainment?





A) Rs. 1.950

B) Rs. 1.960

C) Rs. 1.970

D) Rs. 1.980

17. The traders marks his goods at 20% above cost price and allows 10% discount Then the gain per cent is

A) 6%

B) 8%

C) 10%

D) 12%

18. In a division sum the divisor is 12 times the quotient and 5 times the remainder. If the remainder is 24 then the dividend is

A) 1224

B) 1242

C) 1222

D) 120

19. Rolling of tongue is a dominant character in human beings out of 80 students in a class 72 students are capable of rolling their tongue and 8 students not. Find the percentage of dominant and recessive character.

A) dominant 90% recessive 10%

B) dominant 10% recessive 90%

C) dominant 20% recessive 80%

D) dominant 80% recessive 20%

GROUP -IV - 2013

20. Consider the following table:

Year:	1973-74	1987-88	1993-94
-------	---------	---------	---------

24. In an examination 30% of total students failed in English 40% students failed in Hindi and 20% in both. Find the percentage of students who passed in both the subjects.

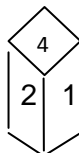
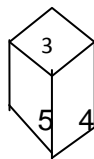
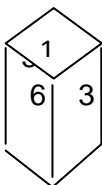
A) 50%

B) 20%

C) 10%

D) 60%

25. Three positions of the same die are given. Find the numbers opposite to the side represented by 2.



Number of poor

in India(in million):

321

307

320

1999-2000

260

The year in which number of poor in India a sharp increase over that of the preceding year is

A) 1973-74

B) 1987-88

C) 1993-94

D) 1999-2000

21. In the products $2a \times 1b = 41a$: $2b \times 1b = 37b$, a and b represent positive integers. Then $a+b=$

A) 15

B) 11

C) 7

D) 13

22. Find the odd man out in the following:

1, 144, 16, 25, 49, 81, 121, 36, 62

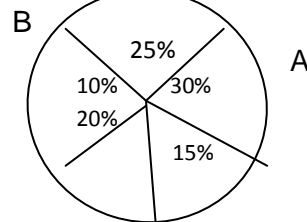
A) 1

B) 49

C) 121

D) 62

23. The world-wide Tea product of 5 countries for the year 2011-2012



A) 5

B) 3

C) 6

D) 1

26. If RIVER is coded as OFSBO then WATER is decoded as

A) ZDWIU

B) ZDWHU

C) ZCWIV

D) ZCUJW

27. A can complete $\frac{2}{3}$ part of a work in 10 days. A can complete $\frac{1}{3}$ part of the same work in

A) 3 days

B) 4 days

C) 5 days

D) 6 days

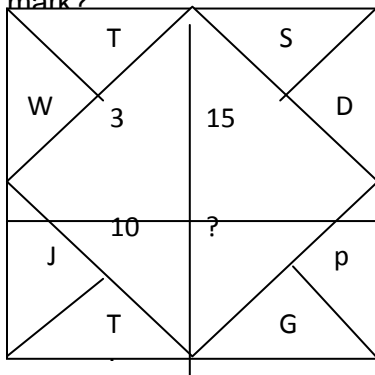
28. Rs. 800 becomes Rs. 956 in 3 Years at certain simple rate of interest. If the rate of interest is increased by 4% What amount will Rs. 800 become in 3 years?



- A) Rs. 1,020,80 B) Rs. 1,025
C) Rs. 1,052 D) Rs. 1,080, 20
29. Amala invests Rs. 6,000 in a bond which gives interest at 4% per annum during the first year, 5% during the second year, 10% during the third year. How much does she get at the end of the third year?

A) Rs. 7,300 B) Rs. 7,007,2
C) Rs. 7,200 D) Rs. 7,207,2

30. What will come in the place of a question mark?



A) 9 B) 6

A) 9 B) 6
C) 7 D) 3

31. Find out the wrong number in the sequence.

623, 251, 543, 356

A) 543 B) 251
C) 623 D) 356

32. Find out the wrong number in the sequence.

121, 264, 312, 462, 583

A) 583 B) 264
C) 121 D) 312

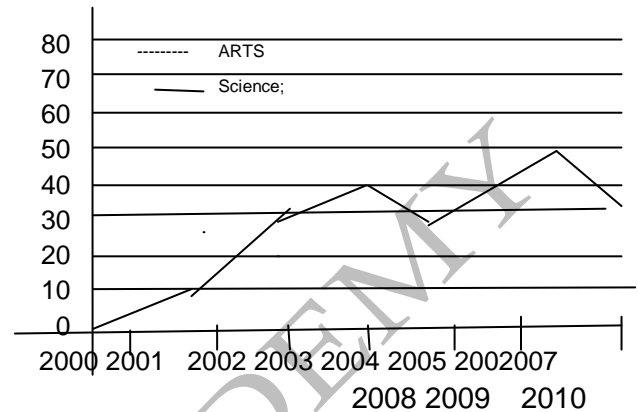
33. If $2 \div 3 = 89$, $3 \div 4 = 2716$, $4 \div 3 = 649$ then $1 \div 2 = ?$

A) 24 B) 14
C) 4 D) 10

34. Five distinct items A, B, C, D and E are to be placed in distinct boxes numbered as 1, 2, 3, 4, 5. Items B and E cannot be grouped together. Maximum number of boxes can be left out without items is

A) 1 B) 2
C) 3 D) 0

35. SALES BY TWO CATEGORY FOR ABC PRESS, 2000-2010 (in thousands of books).



In how many years did the sales of science books exceed the sales of arts books from 2000 to 2009?

A) 4 Years B) 5 Years
C) 6 Years D) 7 Years

36. Five persons A, K, L, R, and U are sitting around a circular table. K is immediate left to U and R is between A and U, then immediate neighbours of L are

A) K and A B) U and A
C) K and R D) A and R

37. A circular ground of radius 7 m has a path of width 7 m around it on its outside. The area of the path is approximately equal to ---
-----[$\pi = 22/7$]

A) 154 sq.m B) 308 sq.m
C) 462 sq.m D) 616 sq.m

38. A can do a work in 12 days. B in 6 days and C in 3 days. A and B start working together and after a day, C joins them. The total number of days required to complete the work is

A) $2\frac{2}{7}$ days B) $1\frac{2}{7}$ days
C) $2\frac{1}{7}$ days D) $1\frac{1}{7}$ days

39. At what rate percent compound interest does a sum of money become nine fold in 2 years?

A) 100% B) 200%
C) 300% D) 150%

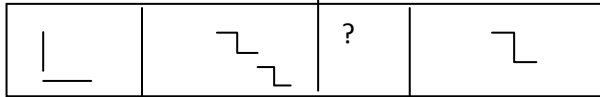


GROUP -IV – 2014

40. Simplify: $\sqrt[4]{\sqrt{x^2}}$

- A) $x^{1/6}$ B) $x^{1/12}$
 C) $x^{1/3}$ D) $x^{1/4}$

41. Find the missing block.



- A) B)

- C)

- D)

42. Find the greatest number that will divide 43,91, 183 so as to leave the same remainder in each case.

- A) 4 B) 7
 C) 9 D) 8

43. The number-pairs lying between 40 and 100 with their H.C.F. as 15 is

- A) 3 B) 4
 C) 5 D) 2

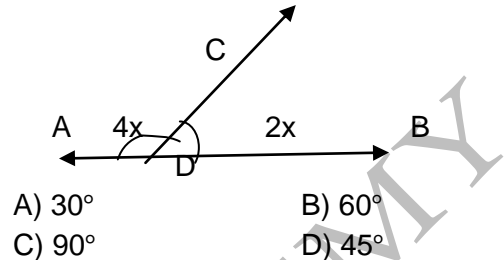
44. A, B, C, D start at the same time to run around a circular garden in the same direction. A completes a round in 30 minutes, B in 60 minutes, C in 90 minutes and D in 105 minutes. After what time will they meet again at the starting point?

- A) 15 hours B) 10 hours
 C) 21 hours D) 20 hours

45. Find the greatest number of 4 digits which is divisible by 15, 25, 40 and 75

- A) 9600 B) 3000
 C) 9800 D) 8540

46. From the fig. find the value of 'x'



- A) 30° B) 60°
 C) 90° D) 45°

47. Find the height of a parallelogram whose area is 30 cm² and base 15 cm is

- A) 10 cm B) 15 cm
 C) 20 cm D) 30 cm

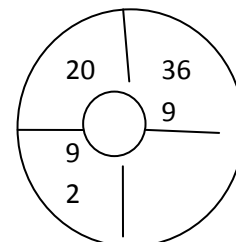
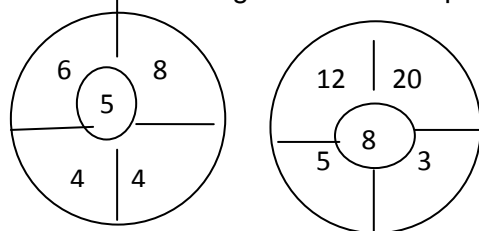
48. Ram is 7 times as old as his daughter Nanthini. After 5 years he will be 5 times as old as his daughter. what are their present ages?

- A) 5,35 B) 6,42 C) 9,63
 D) 10,70

49. If $\frac{a}{b} = \frac{4}{3}$ then the value of $6a + 4b$

- A) -1 B) 3
 C) 4 D) 5

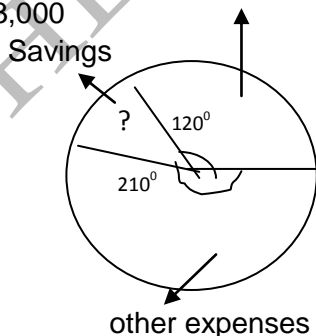
50. Find the missing number in the place?



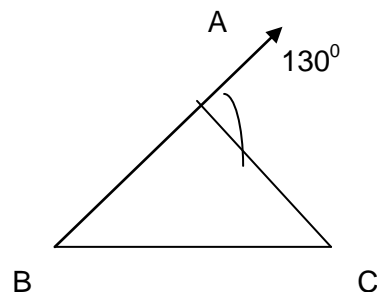
- A) 10 B) 11
 C) 13 D) 14



51. Simplify $\sqrt{214} + \sqrt{112} + \sqrt{74} + \sqrt{49}$
A) 15 B) 18
C) 25 D) 17
52. Divide Rs.700 among A,B,C so that A gets 2 times more than to B and B gets 2 times to C how much of amount they are getting?
A) Rs.100, Rs.200, Rs.400
B) Rs.200, Rs.300, Rs.200
C) Rs. 300, Rs.200, Rs.200
D) Rs. 400, Rs.200, Rs.100
53. A cone, hemisphere, and cylinder have equal bases. If the heights of the cone and a cylinder are equal and are same as the common radius then find the ratio of their respective volumes
A) 2:3:4 B) 1:2:3
C) 2:1:3 D) 3:2:5
54. Using Identities $x-y = -6$; $xy = 4$, Find the value of $x^2 - y^2$
A) -288 B) -388
C) -268 D) -278
55. Two taps can fill a tank in 30 minutes and 40 minutes. Another tap can empty it in 24 min. If the tank is empty and all the three taps are kept open, in how much time the tank will be filled.
A) 1 $\frac{1}{2}$ hours B) two hours
C) one hour D) 2 $\frac{1}{2}$ hours
56. The radius of a wheel is 1.75. How many revolutions will it make in travelling 11 km?
A) 10 B) 100
C) 1000 D) 10000
57. Monthly expenditure of a person is shown in the figure. Find the amount has in his savings?
food Rs. 3,000



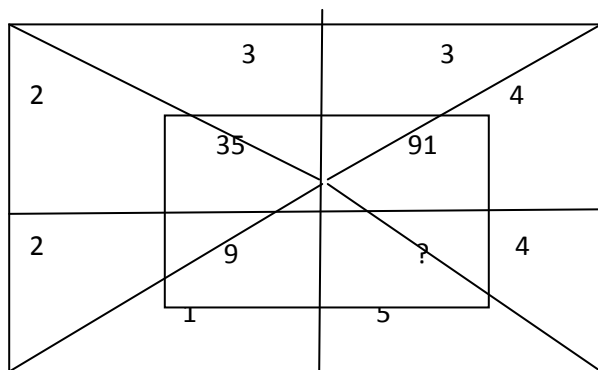
- A) Rs.800 B) Rs.900
C) Rs.1,000 D) Rs.750
58. Find the missing number in the place?
- | | |
|---|---|
| 1 | |
| 1 | 2 |
- | | |
|---|---|
| 5 | |
| 2 | 3 |
-
- | | |
|----|---|
| 11 | |
| 3 | 4 |
- | | |
|---|---|
| ? | |
| 4 | 5 |
- A) 18 B) 19
C) 20 D) 21
59. Number of prime numbers between 20 and 30
A) 1 B) 2
C) 3 D) 4
60. If the area of the ΔABC is 68 sq. units and the vertices are A(6,7), B(-4,1) and C(a,-9) taken in order. Find the value of a.
A) -2 B) 3
C) 5 D) 2
61. If the mean of $x, x+2, x+4, x+6, x+8$ is 20 then find the value of x
A) 32 B) 16
C) 8 D) 4
62. By selling a car for Rs. 1,40,000 a man suffered a loss of 20% what was the cost price of the car?
A) Rs.1,50,000 B) Rs.1,25,000
C) Rs.2,00,000 D) Rs. 1,75,000
63. In the given figure B : C = 2:3 find B





GROUP -IV - 2016

- A) 120° B) 52°
C) 78° D) 130°
64. Find the point of intersection of the straight line $9x - y - 2 = 0$, $2x + y - 9 = 0$
A) (-1,7) B) (7,1)
C) (1,7) D) (-1,-7)
65. The cost of a dining table is Rs. 8,400 A wants to buy it in 10 instalments. His E.M.I is Rs.875. Find the rate of interest?
A) 3% B) 5%
C) 8% D) 10%
66. If $(x+m)(x+n) = x^2 + 6x + 5$ find $m^2 + n^2$
A) 25 B) 26
C) 27 D) 28
67. Choose the best answer.
Two numbers differ by 5. If their products is 336, then the sum of two number is
A) 21 B) 28
C) 37 D) 51
68. Find the missing number.



- A) 136 B) 156
C) 176 D) 189
69. Find the simple interest and the amount due on Rs. 6,750 for 219 days at 10 % per annum
A) 205 B) 305
C) 405 D) 415
70. Three numbers are in the ratio 3:4:5 and their L.C.M is 2400. Their H.C.F is
A) 40 B) 80
C) 120 D) 200

71. $(-1\frac{2}{7}) + (-3\frac{5}{7}) + (6\frac{4}{7})$ is _____
A) 3/7 B) 5/7
C) 11/7 D) 10/7
72. The population of a city in the year 2014 is 1,80,000 and increases at a rate of 20% per year. Find the population of the city in the year 2016?
A) 2,40,000 B) 2,59,200
C) 2,55,000 D) 2,54,300
73. 3 - 25 here, which of the following number is a suitable in -, so that the number will be a perfect square?
A) 1 B) 0
C) 4 D) 6
74. The average mark of 10 children is 80 then their total mark is.
A) 200 B) 300
C) 800 D) 400
75. A man and woman are engaged in a work. A man can do a piece of work in 4 days and the woman can do in 12 days. Find how many days will they take to finish it together?
A) 6 days B) 5 days
C) 4 days D) 3 days
76. Which of the following set of measurements will form a right angle triangle?
A) 6,9,12 B) 5,8,10
C) 5,5,5√2 D) 3,4,4√2
77. The value of
$$\sqrt{609 + \sqrt{248 + \sqrt{60 + \sqrt{7 + \sqrt{81}}}}}$$

A) 20 B) 25
C) 16 D) 9
78. The price of a house is decreased from rupees fifteen lakhs to rupees twelve lakhs. The percentage of decrease is.
A) 10% B) 20%
C) 30% D) 40%



79. If $3(t-3) = 5(2t+1)$ then $t = ?$
A) -2 B) 2
C) -3 D) 3
80. The value of $\frac{1.75 \times 1.75 + 2 \times 1.75 \times 0.75 + 0.75 \times 0.75}{1.75 \times 1.75 - 0.75 \times 0.75}$
A) 3.5 B) 6.25
C) 1 D) 2.5
81. The value of $16^3 + 7^3 - 23^3$ is
A) -7728 B) 7028
C) 7728 D) -7718
82. Find the next term of 4 in the series is 1, 1, 2, 8, 3, 27, 4, ...
A) 31 B) 29
C) 16 D) 64
83. Three angles of a triangle are $x-30^\circ$, $x-45^\circ$, $x+15^\circ$, find the value of x .
A) 60° B) 40°
C) 80° D) 100°
84. The difference between simple interest and compound interest for a sum of Rs.12,000 lent at 10% per annum in 2 years, is
A) Rs.80 B) Rs.90
C) Rs.120 D) Rs.100
85. The base of a triangle is four times its height and its area is 50 m^2 . The length of the base is
A) 10 m B) 15 m
C) 20 m D) 25 m
86. A can do a piece of work in 20 days and B can do it in 25 days. Both of them finished the work and earned Rs.3,600. Then A's share is.
A) Rs.1,600 B) Rs.2,000
C) Rs.3,000 D) Rs.3,100
87. If $(\frac{7}{12})^{-4} \times (\frac{7}{12})^{3x} = (\frac{7}{12})^5$, then the value of x is
A) -1 B) 1
C) 2 D) 3
88. If 22 men can build a wall of 110 meters in 10 days. The length of a similar wall built by 30 men in 6 days is
A) 100 mts B) 90 mts
C) 80 mts D) 70 mts
89. If the ratio of length and breadth of a rectangle is 4:7. Find the length while its breadth is 77 cm
A) 22 cm B) 33 cm
C) 44 cm D) 55 cm
90. A room is 5 m 70 cm long and 4 m 50 cm broad. Its Area is
A) 23.4 m^2 B) 24.3 m^2
C) 25 m^2 D) 98.01 m^2
91. Simplify:
 $5\frac{1}{4} + 4\frac{3}{4} + 7\frac{5}{8} + 6\frac{7}{8} + 11\frac{3}{4}$
A) $\frac{98}{47}$ B) $\frac{108}{49}$
C) $\frac{98}{45}$ D) $\frac{96}{47}$
92. Find the rate of interest at which, a sum of money becomes $\frac{9}{4}$ times in 2 years?
A) $69\frac{1}{2}\%$ B) $67\frac{1}{2}\%$
C) $62\frac{1}{2}\%$ D) $61\frac{1}{2}\%$
93. The breadth, height and volume of a cuboid are 10 cm, 11 cm and 3080 cm^3 respectively. Find the length of the cuboid.
A) 21 cm B) 28 cm
C) 24 cm D) 30 cm
94. A man bought an old bicycle for Rs.1,500. He spends Rs.500 on its repair and sells it for Rs.1,800. Find the percentage of his loss.
A) 10% B) 15%
C) 20% D) 5%
95. Find the LCM of a^3b^4 , ab^5 and a^2b^7
A) a^7b^3 B) a^3b^7
C) a^2b^5 D) ab^5

GROUP - IV [PRELIMS] - 2018

MATHS

96. The value of e^0 is
(A) e (B) 1
(C) 0 (D) ∞
97. How many solutions have a linear equation in one variable?
(A) Three solutions



- (B) Unique solution
(C) Two solutions
(D) No solution
98. The 7th term of the sequence 0.12, 0.012, 0.0012 is
(A) 1.2×10^6 (B) 1.2×10^{-6}
(C) 1.2×10^7 (D) 1.2×10^{-7}
99. Simplify :
 $\frac{9}{8} \div \frac{3}{5} \text{ of } \left(\frac{3}{4} + \frac{3}{5} \right)$
(A) $1 \frac{11}{18}$ (B) $1 \frac{5}{18}$
(B) $1 \frac{13}{18}$ (D) $1 \frac{7}{18}$
100. A sum of money triples itself at 8% per annum over a certain time. The time taken is
(A) 20 years (B) 22 years
(C) 25 years (D) 30 years
101. Find the correct relationship between G.C.D. and L.C.M.
I. G.C.D. = L.C.M.
II. G.C.D. \leq L.C.M.
III. L.C.M. \leq G.C.D.
IV. L.C.M. $>$ G.C.D.
(A) I (B) II
(C) III (D) IV
102. If p, q, r, s, t are in A.P, then the value of $p - 4q + 6r - 4s + t$ is
(A) 1 (B) 2
(C) 3 (D) 0
103. The G.C.D. and L.C.M. of 90, 150, 225 is
(A) 15, 450 (B) 450, 15
(C) 90, 225 (D) 225, 150
104. If $y - \frac{1}{y} = 6$ find the value of $y^3 - \frac{1}{y^3}$
(A) 216 (B) 222
(C) 234 (D) 228
105. Which of the following statement is false in a parallelogram?
(A) The opposite sides are parallel
(B) The opposite angles and sides are equal
(C) The diagonals are equal
(D) The diagonals bisect each other
106. Reciprocal of 0 is -----.
(A) 0 (B) 1
(C) ∞ (D) no reciprocal
107. Which one of the following statements is false?
(A) Among the common divisors of given numbers, the greatest divisor is the G.C.D.
(B) If the G.C.D. of any two numbers is 1 they are said to be prime numbers
(C) Among the common multiples of given numbers, the least is the L.C.M.
(D) The product of any two numbers is equal to the product of their G.C.D. and L.C.M.
108. If the product of four consecutive terms in G.P is 625. Find the first term.
(A) 15 (B) 25
(C) 5 (D) 35
109. Gain or loss percent is always calculated on
(A) cost price (B) selling price
(C) gain (D) loss
110. A student goes to his school from his house at a speed 3 Km/hr and returns at a speed of 2 Km/hr. If he takes 5 hours in going and coming the distance between his house and school is
(A) 5 km (B) 5.5 km
(C) 6 km (D) 6.5 km
111. If x, $2x + 2$, $3x + 3$ are in G.P, then $11x$, $22x + 22$, $33x + 33$ form
(A) an A.P.
(B) a G.P.
(C) a constant sequence
(D) Neither A.P. nor a G.P.
112. The sum of three numbers is 264 if the first number be twice the second and third number be one-third of the first, then the second number is
(A) 48 (B) 72
(C) 54 (D) 64
113. If $1^2 + 2^2 + 3^2 + \dots + 10^2 = 385$ then $2^2 + 4^2 + 6^2 + \dots + 20^2$ is



- (A) 770 (B) 1150
(C) 1540 (D) 385×385
114. In the ratio $x\%$ of y to $y\%$ of x , its fraction value is equals to
(A) $\frac{1}{xy}$ (B) xy
(C) $\frac{x}{y}$ (D) 1
115. Arun is now half as old as his father.
Twelve years ago the father's age was three times as old as Arun. Now the present age of his father's age is
(A) 24 years (B) 36 years
(C) 48 years (D) 50 years
116. If a, b, c are in A.P. then $3^a, 3^b, 3^c$ are in
(A) A.P. (B) G.P.
(C) A.P. and G.P. (D) None of these
117. If $-1 < r < 1$, then the sum of infinite number of a geometric series is
(A) $\frac{a(r^n-1)}{r-1}$ (B) $\frac{a(1-r^n)}{1-r}$
(C) $\frac{a}{1-r}$ (D) na
118. The angle in a semi circle is a -----
(A) acute angle
(B) Obtuse angle
(C) straight angle
(D) right angle
119. If $\frac{a}{3} = \frac{b}{4} = \frac{c}{7}$ then $\frac{a+b+c}{c}$ is
(A) 7 (B) 2
(C) $\frac{1}{2}$ (D) $\frac{1}{7}$
120. Which is biggest ratio?
2:3, 3:5, 4:7, 5:8
(A) 3:5 (B) 4:7
(C) 5:8 (D) 2:3

TNPSC - GROUP - IV PREVIOUS YEAR KEYS - MATHS

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



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