

TNPSC – GROUP I

GENERAL STUDIES - 2017 (ENGLISH)

APTITUDE

- 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?
(A) 24 m **(B) 21 m** (C) 30 m (D) 27 m
- 1, 4, 6, 9, 11, 14, 16 _____ next to 16 is
(A) 19 (B) 17 (C) 18 (D) 16
- 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
- Surface Area of a hemisphere is 2772 cm^2 then the total surface area of hemisphere is
(A) 4158 cm^2 (B) 3172 cm^2
(C) 3882 cm^2 (D) 4258 cm^2
- Choose the correct option to complete the alphabet letter series
___ABA___CABC___DCBA___BAB___A
(A) ABDCA (B) BCADC (C) ABCDD (D) CBDAA
- 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
- What should come in place of the questions mark in the following series?
24, 536, 487, 703, 678, ?
(A) 736 (B) 842 **(C) 742** (D) 836
- Sum to n terms of an Arithmetic progression is $sn^2 + n$ then eighth term is
(A) 136 (B) 36 (C) 131 **(D) 31**
- 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) $\frac{17}{21}$

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10. 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
11. If radio of two cylinders are in the ratio 5 : 3 and their heights are in the ratio 3 : 5 then ratio of their volume is
- (A) 5 : 5 (B) 3 : 3 (C) 9 : 25 **(D) 5 : 3**
12. 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**
13. 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 respectively.
- (A) 1, 1** (B) 1, 2 (C) -1, -2 (D) -2, 1
14. 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**
15. A wall is to be constructed with length 60 m, breadth 3 m and height 5 m. How many bricks are required to construct a wall with length 30 cm, breadth 15 cm and height 20 cm?
- (A) 1,50,000 (B) 1,25,000 **(C) 1,00,000** (D) 1,75,000
16. 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**
17. How many prime numbers lies between 1 to 100
- (A) 26 **(B) 25** (C) 24 (D) 20
18. The value of $\sqrt[3]{\sqrt{0.015625}}$ is
- (A) 0.05 (B) 0.25 **(C) 0.5** (D) 2.5
19. Median of 12, 17, 5, 8, 13, 6, 9 is
- (A) 8 **(B) 9** (C) 12 (D) 17

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20. 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) 17 m, North-West
 (C) 7 m, East (D) **13 m, South-East**
21. The sides of 14 Square's are 11 cm, 12 cm, 13 cm, 24 cm, then find the total area of 14 squares.
 (A) 3515 cm² (B) **4515 cm²** (C) 2115 cm² (D) 3215 cm²
22. A Train travelled a certain distance at a uniform speed. If the train had been 7 km/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**
23. 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
24. 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) 2.699.4 litres
25. The present age of A and B are in the ratio 4 : 5 and after five years they will be in the rat 5 : 6 then their sum of present age is
 (A) 55 years (B) **45 years** (C) 35 years (D) 25 years
26. A function $f : (-7, 6) \Rightarrow \mathbb{R}$ is defined as follows $f(x) \begin{cases} x^2 + 2x + 1 & -7 \leq x < -5 \\ x + 5 & -5 \leq x < 2 \\ x - 1 & 2 < x < 6 \end{cases}$ 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) $\frac{1}{2}$
27. 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

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28. 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

29. Work in a for 300 men had provisions 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

30. Simplify :

$$\frac{\sqrt[3]{729} - \sqrt[3]{27} + \sqrt[2]{16}}{\sqrt[3]{512} + \sqrt[3]{343} - \sqrt[4]{256}} =$$

- (A) $\frac{11}{10}$ **(B) $\frac{10}{11}$** (C) $\frac{9}{10}$ (D) $\frac{12}{11}$

31. Simplify : $\frac{x+3}{x^3-1} \div \frac{3x+9}{x^2+x+1}$

- (A) $\frac{1}{3x+1}$ (B) $3x+1$
 (C) $3x-3$ **(D) $\frac{1}{3x-3}$**

32. Sasi purchased a house for ₹ 27,75,000 and spent ₹ 2,25,000 on its interior decoration. He sold the house to make a profit of 40%. What is the selling price of the house?

- (A) ₹ 31,20,000 (B) ₹ 36,00,000
(C) ₹ 42,00,000 (D) ₹ 48,00,000

33. Simplify : $(1350 \div 15 - 5) \div (47.5 - 15 \times 2.5)$

- (A) 85 (B) 10.5 (C) 10 **(D) 8.5**

34. 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) $5\frac{1}{2}$

35. Value of $\sqrt{3 \cdot \sqrt{3 \cdot \sqrt{3 \cdot \sqrt{3 \cdot \sqrt{3 \dots}}}}}$

- (A) 3** (B) infinity
 (C) 0 (D) $\sqrt{3}$

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36. Introducing a girl, Raj said, “Her mother is the only daughter of my mother-in-law”. How is Raj related in the girl?
 (A) Uncle **(B) Father** (C) Brother (D) Husband
37. Product of two positive 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
38. 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) Rs. 8116**
39. A number is increased by 10% and then decrease by 10%. Find the net decrease percent.
 (A) 0% **(B) 1%** (C) 2% (D) 3%
40. 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
41. 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
42. A certain sum of money amounts to Rs. 20,160 in 5 years at 8% interest. Find the principal
 (A) Rs. 14,000 (B) Rs. 14,100 (C) Rs. 14,440 **(D) Rs. 14,400**
43. 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 ∞**
44. Find the unknown number?
 20 13 07
 30 08 22
 40 ? 28
 (A) 10 **(B) 12** (C) 16 (D) 20

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45. 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) 12 cm **(B) 13 cm** (C) 15 cm (D) 10 cm
46. 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
47. 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 third 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**
48. 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
49. If A and B can do a work in 6 days. B and C can 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
50. 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 was completed in
- (A) 30 days (B) 20 days **(C) 12 days** (D) 8 days