

### APTITUDE

1. 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
2. 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)  $\frac{1}{2} < \frac{-3}{5} < \frac{-1}{20} < \frac{-13}{40} < \frac{-15}{80}$
3. 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
4. The radius of a spherical ballon increases from 3 cm to 9 cm as air is being pumped into it. Find the ratio of volumes of the ballon in the two cases.
- (A) 1 : 3 (B) 1 : 9  
(C) 1 : 27 (D) 1 : 8
5. If the circle with diameter 4 cm is inside of the circle with radius 10 cm. then the Maximum possible distance between the centres is
- (A) 6 (B) 7  
(C) 8 (D) 9
6. 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

# TNPSC – GROUP I

## GENERAL STUDIES - 2019 (ENGLISH)

7. 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
8. A ramp for unloading a moving truck has an angle of elevation of  $30^\circ$ . If the top of the ramp is 0.9 m 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
9. 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)  $\frac{(x+5)(x+3)}{(x-5)}$
10. 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)  $\frac{160}{125}$
11. Find the greatest number of four digits exactly divisible by 15, 21 and 27.  
 (A) 9999 **(B) 9450**  
 (C) 9845 (D) 8505
12. 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 the other one.  
 (A)  $x^3 - 1$  **(B)  $(x+1)(x^2-1)$**   
 (C)  $x^2+x-1$  (D)  $x^2-x+1$
13. 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)  $16p^2q^4r$  (D)  $16p^2q^4r^3$
14. 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)  $80^\circ, 110^\circ, 150^\circ, 120^\circ, 80^\circ$   
**(D)  $60^\circ, 120^\circ, 100^\circ, 120^\circ, 140^\circ$**

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## GENERAL STUDIES - 2019 (ENGLISH)

15. 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
16. Without using logarithm table find approximate value for  $\log_{10} 2$ .  
(A) 0.2401 (B) 0.3  
(C) 0.3802 (D) 1.414
17. How many Islands in Andaman-Nicobar Islands were renamed by our Prime Minister on December 30, 2018?  
(A) 5 (B) 4 (C) 3 (D) 2
18. Pocket money received by 7 students is given below.  
₹ 42, ₹ 22, ₹ 40, ₹ 26, ₹ 23, ₹ 28, ₹ 43  
Find the median.  
(A) ₹ 26 (B) ₹ 23 (C) ₹ 28 (D) ₹ 22
19. The Range of the first 10 prime numbers is  
(A) 28 (B) 26 (C) 29 (D) 27
20. The students of a class donated ₹ 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
21. 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
22. Find the number of 3 digit natural numbers which are divisible by 6  
(A) 151 (B) 150  
(C) 152 (D) 149
23. What is the probability that a leap year selected at random will contain 53 Sundays?  
(A)  $\frac{2}{7}$  (B)  $\frac{3}{7}$   
(C)  $\frac{4}{7}$  (D)  $\frac{5}{7}$

# TNPSC – GROUP I

## GENERAL STUDIES - 2019 (ENGLISH)

24. 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%
25. 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
26. 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
27. 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 |
28. 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
29. 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) ₹ 20,000 (B) ₹ 15,000  
(C) ₹ 10,000 (D) ₹ 12,500

# TNPSC – GROUP I

## GENERAL STUDIES - 2019 (ENGLISH)

30. 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
31. Calculate the compound interest on ₹ 9,000 in 2 years when the rate of interest for successive years are 10% and 12% respectively  
(A) ₹ 1,188 (B) **₹ 2,088**  
(C) ₹ 4,396 (D) ₹ 2,596
32. A certain sum of money in simple interest scheme amounts to ₹ 8,880 in 6 years and ₹ 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%
33. 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)  $\frac{1}{2}$
34. Find the median of the data  
12, 14, 25, 23, 18, 17, 24, 20  
(A) 23 (B) 18 (C) 17 (D) **19**
35. 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
36. 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

# TNPSC – GROUP I

## GENERAL STUDIES - 2019 (ENGLISH)

37. 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
38. 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, than find the diameter of the circle. (use  $\pi = \frac{22}{7}$ )  
 (A) 14 m **(B) 28 m**  
 (C) 24 m (D) 7 m
39. In how much time will a sum of ₹ 1852.20 at 5% per annum compound interest  
 (A) 2 years **(B) 3 years** (C) 4 years (D) 5 years
40. The standard deviation of 10 values is 3. If each value in increase by 4. Find the variance of the new set of value.  
 (A) 30 (B) 12  
**(C) 9** (D)  $\sqrt{3}$
41. Find the next term of this sequence 11, 13, 17, 19, 23, \_\_\_\_\_  
 (A) 25 (B) 27  
**(C) 29** (D) 31
42. Find the mean of 2, 4, 6, 8, 10, 12, 14, 16.  
 (A) 10 **(B) 9**  
 (C) 12 (D) 14
43. 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)  $x^2 + 2x - 4$
44. 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)  $\frac{m^2}{m^2-1}$**

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## GENERAL STUDIES - 2019 (ENGLISH)

45. If  $3a + 4b = 22$ ,  $8a - 5b = -4$ . then the value of  $(a + b)^2 = ?$   
(A) 36 (B) 72  
(C) 25 (D) 49
46. 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
47. 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
48. 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
49. The average height of 10 students in a class was calculated as 150 cm. On verification it was found that one reading was wrongly recorded as 130 cm instead of 140 cm. Find the correct mean height.  
(A) 150 cm (B) 152 cm (C) 153 cm (D) 151 cm
50. What is Mean of all two digit Numbers?  
(A) 54.5 (B) 49.5 (C) 45.5 (D) 44.5
51. If  $ax^2 - 28x + 49 = 0$  has equal roots. Then the value of  $a$  is  
(A) 1 (B) 2 (C) 3 (D) 4