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TCS placement paper

Section 1: Quantitative Ability (35 questions in 80 minutes)

1. A man travels from A to B at 4 mph over a certain journey and returns over the same route to A, at 5 mph. What is his average speed (in mph) for the journey?

- 1] 4.5 2] $40/9$ 3] $19/4$ 4] $17/4$

2. Usha bought a linen cloth and rope to build a tent. If the rope is 153 m long and it is to be cut into pieces of 1m length, then how many cuts are to be made to cut the ropes into 153 pieces?

- 1]153 2]152 3]154 4]155

3. All 32 points are equidistant from a point X on a plane then which is/are necessarily true:

- a) all 32 lie on a circle
b) distance from X to all 32 is less than distance between each other
1] only a 2] only b 3] both a and b 4] none

4. Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari. It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 35 km/hr and the distance traveled by the Ferrari is 490 km, find the total time taken for Rohit to drive that distance (in hrs).

- 1] 20.72 2] 3.5 3] 238.25 4] 6.18

5. A circular dartboard of radius 1 foot is at a distance of 20 feet from you. You throw a dart at it and it hits the dartboard at some point Q in the circle. What is the probability that Q is closer to the center of the circle than the periphery?

- 1] 0.75 2] 1 3] 0.5 4] 0.25

6. Given 3 lines in the plane such that the points of intersection form a triangle with sides of length 20, 20 and 30, the number of points equidistant from all the 3 lines is

- 1] 4 2] 3 3] 0 4] 1

7. Alok and Bhanu play the following min-max game. Given the expression $N = 9 + X + Y - Z$ where X, Y and Z are variables representing single digits (0 to 9), Alok would like to maximize N while Bhanu would like to minimize it. Towards this end, Alok chooses a single digit number and Bhanu substitutes this for a variable of her choice (X, Y or Z). Alok then chooses the next value and Bhanu, the variable to substitute the value. Finally Alok proposes the value for the remaining variable. Assuming both play to their optimal strategies, the value of N at the end of the game would be

- 1] 27 2] 18 3] 9 4] 20

8. Alice and Bob play the following chip-off-the-table game. Given a pile of 58 chips, Alice first picks at least one chip but not all the chips. In subsequent turns, a player picks at least one chip but no more than the number picked on the previous turn by the opponent. The player to pick the last chip wins. Which of the following is true?

- 1] In order to win, Alice should pick 14 chips on her first turn.
2] In order to win, Alice should pick two chips on her first turn. 3] In order to win, Alice should pick one chip on her first turn.
4] Alice has no winning strategy

9. $(1/2)$ of a number is 3 more than the $(1/6)$ of the same number? Which number is this? 1] 6 2] 7 3] 8 4] 9

10. 3 persons A, B and C were there. A always says truth, B lies on Monday, Tuesday & Wednesday, but C lies on Thursday, Friday & Saturday. One day A said B & C said to A that, B said "yesterday was one of the days when I lie", C said that "yesterday was one of the days when I lie too", then which day was that?

- 1] Sunday 2] Thursday 3] Saturday 4] Tuesday

11. 10 programmers, type 10 lines in 10 minutes, then to type 60 lines in 60 minutes, how many programmers are needed?

- 1] 16 2] 6 3] 10 4] 60

12. A car is filled with four and a half gallons of fuel for a round trip. If the amount of fuel taken while going is 25% more than the amount taken for coming, what is the amount of fuel consumed while coming back?

- | | |
|------------------------|--------------|
| 1] Less than 2 gallons | 2] 2 gallons |
| 3] More than 3 gallons | 4] 3 gallons |

13. Twenty-one persons attended a party. Which of the following statements can never be true?

- 1] There is a person in the party who is acquainted with all the twenty others. 2] Each person in the party has a different number of acquaintances.
3] There is a person in the party who has an odd number of acquaintances. 4] In the party, there is no set of three mutual acquaintances.

14. $x/2y = 2a$, then $2x/(x-2ay) = ?$

- 1] 4 2] 8 3] 16 4] 2

15. On planet korba, a solar blast has melted the ice caps on its equator. 9 years after the ice melts, tiny planetoids called echina start growing on the rocks. Echina grows in the form of circle, and the relationship between the diameter of this circle and the age of echina is given by the formula $d = 4 \cdot W \cdot (t-9)$ for $t > 9$, where d represents the diameter in mm, $W = 10$ mm/years and t the number of years since the solar blast. Jagan recorded the radius of some echina at a particular spot as 7mm. How many years back did the solar blast occur?

- 1] 17 2] 21.25 3] 9.175 4] 14.05

16. In T.Nagar the buildings were numbered from 1 to 100. Then how many 4's will be present in the numbers?

- 1] 18 2] 19 3] 20 4] 21

17. A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70, Statement n says 'At least n of the statements on this sheet are false.' Which statements are true and which are false?

- 1] The even numbered statements are true and the odd numbered are false. 2] The odd numbered statements are true and the even numbered are false. 3] The first 35 statements are true and the last 35 are false.
4] The first 35 statements are false and the last 35 are false.

18. If a and b are mixed in 3:5 ratio and b and c are mixed in 8:5 ratio and if the final mixture is 35 liters, find the amount of b in liters?

- 1] 13.34 2] 15.73 3] 16.73 4] 9.45

19. One man wants to build a wall. The length and breadth of the wall are 20 cm and 30 cm, respectively.

He needs 35 bricks for one square centimeter then how many bricks does he need?

- 1] 21,500 2] 30,000 3] 21,000 4] 20,000

20. How many 9 digit numbers are possible by using the digits 1,2,3,4,5 which are divisible by 4 if the repetition is allowed?

- 1] 5^7 2] 5^6 3] 5^9 4] 5^8

21 A work is done by two persons in 24 min. One of them can do this work alone in 40 min. How much time is required to do the same work for the second person?

- 1] 80 min 2] 48 min 3] 60 min 4] 120 min

22 Ramu & Sangeetha went for biological analysis to an island which is 34km from their place. They travelled in a boat which went at a speed of 2m/s. When they are in half a distance in the boat sangeetha noted that there are 7 legged & 8 legged octopuses under the water. Ramu counted the total number of legs of octopuses and got 54. Sangeetha instantly said I know how many 7 legged octopuses are there under the water. They both reached the island after 20 min they left. How many seven legged octopuses does sangeetha calculate?

- 1] 4 2] 5 3] 6 4] none of these

23 A tank is filled with water. In first hour 10 liters, second hours 20 liters, and third hour 40 liters and so on...If time taken to fill $\frac{1}{4}$ of the tank is 5 hours. What is the time taken to fill up the tank?

- 1] 5 2] 8 3] 7 4] 12.5

24 In a shopping mall with a staff of 5 members the average age is 45 years. After 5 years a person joined them and the average age is again 45 years. What's the age of 6th person?

- 1] 25 2] 20 3] 45 4] 30

25

What is the value of $(3X+8Y)/(X-2Y)$, if $X/2Y=2$

- 1] 8 2] 9 3] 10 4] 13

26

$1! + 2! + \dots + 50! = ?$

27 A triangle is made from a rope. The sides of the triangle are 25 cm, 11 cm and 31 cm. What will be the area of the square made from the same rope?

- 1] 280.5625 2] 240.5625 3] 280.125 4] 240

28 If $C \& D = C^2 + CD + D^2 - (C + D)$

then 7 & 8 =

- 1] 169 2] 154 3] 133 4] 172

29 A boy was asked to multiply a certain number by 53. He multiplied it by 35 and got his answer less than the correct one by 1206. Find the number to be multiplied.

- 1] 37 2] 67 3] 87 4] 97

30 In a fraction, if 1 is added to both the numerator and denominator, the fraction becomes $\frac{1}{2}$. If numerator is subtracted from the denominator, the fraction becomes $\frac{3}{4}$. Find the fraction.

- 1] $\frac{5}{8}$ 2] $\frac{3}{7}$ 3] $\frac{2}{3}$ 4] $\frac{1}{8}$

31

If Rs. 1260 is divided amongst A, B and C in the ratio 2:3:4. What is C's share?

1] Rs. 850 2] Rs. 560 3] Rs. 270 4] Rs. 625

32. There are 150 weights. Some are 1 kg weights and some are 2 kg weights. The sum of the weights is 260. What is the number of 1kg weights?

1] 20 2] 30 3] 40 4] 50

33. A moves 4 km east from his starting point. He then travels 5 km north. From that point he moves 8 km to the east. How far is A from his starting point?

1] 13 km 2] 19 km 3] 5 km 4] 10 km

34. The cost of one pencil, two pens and four erasers is Rs.22 while the cost of five pencils, four pens and two erasers is Rs.32. How much will three pencils, three pens and three erasers cost (in Rs.)?

1] 16 2] 9 3] 27 4] 28

35. A 3-gallon mixture contains one part S and two parts R. In order to change it to a mixture containing 25% S, how much R should be added?

1] $\frac{1}{2}$ gallon 2] $\frac{2}{3}$ gallon 3] $\frac{3}{4}$ gallon 4] 1 gallon

Answer set

Section 1: Quantitative Ability

1. 2
2. 2
3. 1
4. 2
5. 4
6. 1
7. 4
8. 2
9. 4
10. 2
11. 3
12. 2
13. 2
14. 1
15. 3
16. 3
17. 3
18. 2
19. 3
20. 4
21. 3
22. 4
23. 3
24. 3
25. 3

26.1
27.1
28.2
29.2
30.2
31.2
32.3
33.1
34.3
35.4