

# TCS Latest Placement Paper Questions - 2014 (11)

1. In a staircase, there are 10 steps. A child is attempting to climb the staircase. Each time she can either make 1 step or 2 steps. In how many different ways can she climb the staircase?

- a) 10
- b) 21
- c) 36
- d) None of these

Ans: d

Use fibonacci series, with starting two terms as 1, 2. So next terms are 3, 5, 8, 13, 21, 34, 55, 89

2. A boy buys 18 sharpeners, (Brown/white) for Rs.100. For every white sharpener, he pays one rupee more than the brown sharpener. What is the cost of white sharpener and how much did he buy?

- a) 5, 13
- b) 5, 10
- c) 6, 10
- d) None of these

Ans: C

Assume that he bought  $b$ , brown sharpeners and  $w$ , white sharpeners and the cost of brown sharpener is  $x$  and white sharpener is  $x + 1$

$$\text{So } w(x+1) + bx = 100$$

$$w + b = 18$$

$$b = 18 - w$$

Substituting in equation 1, we get  $w(x+1) + (18-w)x = 100$  so  $w + 18x = 100$

Take option 1: If white sharpeners are 13,  $x = (100 - 13) / 18 = 4.833$

Option 2, If white sharpeners are 10,  $x = (100 - 10) / 18 = 5$  So white sharpeners cost is 6.

Option 3 Satisfies this condition.

3. Letters of alphabets from 1 to 26 are consecutively with 1 assigned to A and 26 to Z. By 27th letter we mean A, 28th B. In general  $26m+n$ ,  $m$  and  $n$  negative integers is same as the letters numbered  $n$ .

Let  $P = 6$ , strange country military general sends this secret message according to the following codification scheme. In codifying a sentence, the 1st time a letter occurs it is replaced by the  $P$ th letter from it. 2nd time if occurred it is replaced by  $P^2$  letter from it. 3rd time it occurred it is replaced by  $P^3$  letter from it. What is the code word for ABBATIAL

- a) GHNNZOOR

- b) GHKJZOHR
- c) GHHGZOGR
- d) GHLKZOIR

Ans: D

A should be coded as  $1+6 = G$  (it occurred for first time)

B should be coded as  $2+6 = H$  (it occurred for first time)

B Should be coded as  $2 + 36 = 38 - 26 = 12 = L$  (it occurred for second time)

Option D is correct

4. Of a set of 30 numbers, average of 1st 10 numbers is equal to average of last 20 numbers. The sum of last 20 numbers is?

- a) 2 x sum of last 10 numbers
- b) 2 x sum of 1st 10 numbers
- c) sum of 1st 10 numbers
- d) Cannot be determined

Ans: B

Let average of first 10 numbers is a. Then sum =  $10a$

Average of last 10 numbers also a. Then their sum =  $20a$

From the options B correct

5. In how many ways a team of 11 must be selected a team 5 men and 11 women such that the team must comprise of not more than 3 men.

- a) 1565
- b) 2256
- c) 2456
- d) 1243

Ans: B

Maximum 3 men can be played which means there can be 0, 1, 2, 3 men in the team.

$$({}^5C_0 \times {}^{11}C_{11}) + ({}^5C_1 \times {}^{11}C_{10}) + ({}^5C_2 \times {}^{11}C_9) + ({}^5C_3 \times {}^{11}C_8) = 2256$$

6. The wages of 24 men and 16 women amount to 11600 per day. Half the number of men and 37 women has same money. The daily wages paid to each man is

- a) 375
- b) 400
- c) 350
- d) 325

Ans: C

$$24m + 16w = 11600$$

$$12m + 37w = 11600$$

Solving we get  $12m = 21w$

Substituting in the first equation we get,  $42w + 16w = 11600 \Rightarrow w = 200$

$M = 350$

7. A number when successively divided by 5, 3, 2 gives remainder 0, 2, 1 respectively in that order. What will be the remainder when the same number is divided successively by 2, 3, 5 in that order

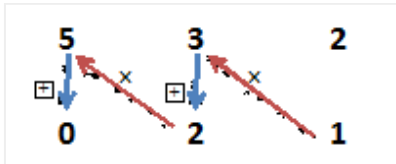
a) 4, 3, 2

b) 1, 0, 4

c) 2, 1, 3

d) 4, 1, 2

Ans: B



use this simple technique.  $[(1 \times 3) + 2] = 5$

$[(5 \times 5) + 0] = 25$

Procedure:

Let the number =  $N$

Now  $N = 5K$

$K = 3L + 2$

$L = 2M + 1$

$K = 3(2M + 1) + 2 = 6M + 5$

$N = 5(6M + 5) = 30M + 25$

For  $M = 0$  we get the least number as 25. Now when 25 is divided by 2, we get 12 as quotient and 1 as remainder.

When 12 is divided by 3 we get 4 as quotient, and 0 as remainder. When 4 is divided by 5 we get 4 as remainder.

8.  $a, b, c, d, e$  are distinct numbers. if  $(75-a)(75-b)(75-c)(75-d)(75-e) = 2299$  then  $a+b+c+d = ?$

Hint: 2299 is divisible by 11.

$$2299 = 11 \times 11 \times 19 \times 1 \times 1 = 11 \times -11 \times 19 \times -1 \times 1 =$$

Two of the terms in the given expression should equal to 1. As all the digits are distinct, two of the terms should be negative.

One possible solution =  $(75 - 64)(75 - 56)(75 - 86)(75 - 74)(75 - 76)$

Then  $a + b + c + d + e = 64 + 56 + 86 + 74 + 76 = 356$

But as the sum of only 4 terms was asked, we have to subtract one term.

So given answer can be one of 292, 306, 270, 282, 280

9. If  $A^B$  means  $A$  raised to the power of  $B$ , in which of the following choices must  $P$  be greater than  $Q$

a)  $0.9^P = 0.9^Q$

b)  $0.9^P = 0.92^Q$

c)  $0.9^P > 0.9^Q$

Option A is wrong as  $P = Q$

Option B is wrong as  $\frac{P}{Q} = \frac{\log 0.92}{\log 0.9} = 0.79139$

Option C is also wrong as  $a^P > a^Q$  then  $P > Q$  if  $a > 1$

10. 2 gears one with 12 teeth and other one with 14 teeth are engaged with each other. One tooth in smaller and one tooth in bigger are marked and initially those 2 marked teeth are in contact with each other. After how many rotations of the smaller gear with the marked teeth in the other gear will again come into contact for the first time?

a) 7

b) 12

c) Data insufficient

d) 84

Correct Option : A

Assume the distance between the teeth is 1 cm. Then the circumference of first gear is 12 cm and the second is 14 cm.

Now LCM (12, 14) = 84. So to cover 84 cm, the first gear has to rotate  $\frac{84}{12} = 7$  rounds (the second gear rotates  $84 / 14 = 6$  rounds as it is bigger)

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