TCS Latest Placement Paper Questions with solutions -2014 (12)

1. One day Eesha started 30 min late from home and reached her office 50 min late while driving 25% slower than her usual speed. How much time in min does eesha usually take to reach her office from home?

Ans: We know that Speed is inversely proportional to time

While she drives 25% slower means she drove at $\frac{3}{4}$(S)

We know that D = S x T

When speed became $\frac{3}{4}$(S) then Time taken should be $\frac{4}{3}$(T)

i.e, She has taken $\frac{4}{3}$(T) - T extra to cover the distance.

Extra Time = $\frac{T}{3}$ = 20 min (as 20 min late due to slow driving)

Actual time T = 60 Minutes

2. In 2003 there are 28 days in February and 365 days in a year. In 2004 there are 29 days in February and 366 days in the year. If the date march 11 2003 is Tuesday, then which one of the following would the date march 11 2004 would be?

Ans: If 11-3-2003 is Tuesday, Then 11-3 - 2004 is Thursday

The number of odd days between the two dates are $[\frac{366}{7}]_{\text{Rem}}$ = 2.

3) How many positive integers less than 500 can be formed using the numbers 1,2,3,and 5 for digits, each digit being used only once.

Ans: Single digit numbers = 4

Double digit numbers = 4 x 3 = 12

Three digit numbers = 3 x 3 x 2 x 1 = 18

Total = 34

4) A circular swimming pool is surrounded by a concrete wall 4 feet wide.if the area of the wall is 11/25 of the area of the pool, then the radius of the pool in feet is?

Let the radius of the pool be r. Then area of the wall and pool = $\pi(r+4)^2$

Area of the pool = $\pi(r)^2$

Area of the wall = $\pi(r+4)^2 - \pi(r)^2$

Given $\pi(r+4)^2 - \pi(r)^2$ = $\frac{11}{25}(\pi r^2)$

$r^2 + 8r + 16 - r^2 = \frac{11}{25}r^2$

$11r^2 - 200r - 400 = 0$

Solving r = 20

5) A survey of n people in the town of badaville found that 50% of them prefer brand A. Another survey of 100 people in the town of chottaville found that 60% prefer brand A.In total 55% of all the people surveyed together prefer Brand A.What is the total number of people surveyed?

Sol: 50% (n) + 60% (100) = 55% (n + 100)

Solving we get n = 100

6) In the simple subtraction problem below some single digits are replaced by letters .Fined the value of 7A+5D+6CD?

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 A5C5
-1B87
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 674D
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Sol: 15 - 7 = 8 So D = 8

10 + (C -1) - 8 = 4 So C = 3

10 + (5-1) - B = 7 So B = 7

(A-1) - 1 = 6 So A = 8

7A + 5D + 6CD = 56 + 40 + 144 = 240

7) Two full tanks one shaped like the cylinder and the other like a cone contain liquid fuel the cylindrical tank held 500 lts more then the conical tank After 200 lts of fuel is pumped out from each tank the cylindrical tank now contains twice the amount of fuel in the canonical tank How many lts of fuel did the cylindrical tank have when it was full?

Ans: Let the cylindrical tank capacity x + 500 then the conical tank capacity = x

After 200 lts pumped out, then remaining fuel with the tanks = x +300, x - 200

Given that first term is doubt the second.

$$\frac{x+300}{x-200} = \frac{2}{1}$$

Solving we get x = 700

Cylindrical tank capacity = 1200 lts

8. A shop sells chocolates It is used to sell chocolates for Rs.2 each but there were no sales at that price.When it reduced the price all the chocolates sold out enabling the shopkeeper to realize Rs 164.90 from the chocolates alone If the new price was not less than half the original price quoted How many chocolates were sold?

Sol: 16490 = 2 × 5 × 17 × 97

Now now chocolate price should be greater than 1 and less than 2. So 2 x 5 x 17 = 170

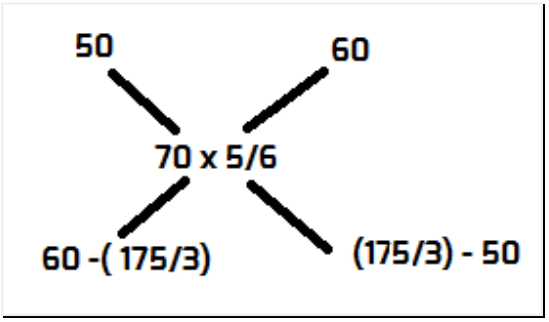
So Total chocolates sold = 97 and New chocolate price = Rs.1.7

9) Eesha bought two varities of rice costing 50Rs per kg and 60 Rs per kg and mixed them in some ratio.Then she sold that mixture at 70 Rs per kg making a profit of 20 % What was the ratio of the micxture?

Sol: Selling price of the mixture = 70 and profit = 20%

Cost price of the mixture = $70 \times \frac{100}{120} = 70 \times \frac{5}{6}$

By applying alligation rule:



So ratio = $60 - \frac{175}{3} : \frac{175}{3} - 50$ = 1 : 5

10. Star question:

If f(1)=4 and f(x+y)=f(x)+f(y)+7xy+4,then f(2)+f(5)=?

Sol: Let x =1 and y = 1

f(1 + 1) = f(1) + f(1) + 7 x 1 x 1 + 4 ⇒ f(2) = 19

Let x =2 and y = 2

f(2 + 2) = 19 + 19 + 7 x 2 x 2 + 4 ⇒ f(4) = 70

Let x = 1 and y = 4

f(1 + 4) = 4 + 70 + 28 + 4 = 106

f(2) + f(5) = 125