

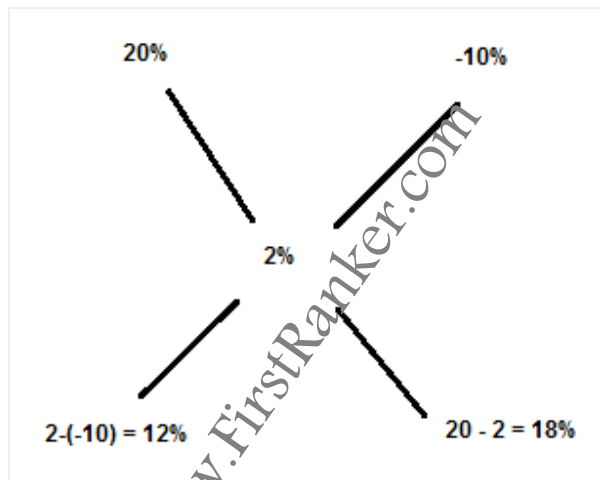
TCS Latest Placement Paper Questions - 2014 (6)

1. A cow and horse are bought for Rs.2,00,000. The cow is sold at a profit of 20% and the horse is sold at a loss of 10%. The overall gain is Rs.4000, the Cost price of cow?

- a) 130000
- b) 80000
- c) 70000
- d) 120000

Ans: Overall profit = $\frac{4000}{200000} \times 100 = 2\%$

By applying alligation rule, we get



So cost price of the cow = $\frac{2}{5} \times 200000 = 80000$

2. A circle has 29 points arranged in a clock wise manner from 0 to 28. A bug moves clockwise manner from 0 to 28. A bug moves clockwise on the circle according to following rule. If it is at a point i on the circle, it moves clockwise in 1 sec by $(1 + r)$ places, where r is the remainder (possibly 0) when i is divided by 11. If it starts in 23rd position, at what position will it be after 2012 sec.

Ans: After 1st second, it moves $1 + (23/11)r = 1 + 1 = 2$, So 25th position

After 2nd second, it moves $1 + 25/11 = 1 + 3 = 4$, So 29th position = 0

After 3rd second, it moves $1 + 0/11 = 1 + 0 = 1$, So 1st position

After 4th second, it moves $1 + 1 = 3$ rd position

after 5th, $1 + 3/11 = 4$ So 7th

After 6th, $1 + 7/11 = 8$ so 15th

After 7th, $1 + 15/11 = 5$ so 20th

After 8th, $1 + 20/11 = 10$ th, So 30th = 1st

So it is on 1st after every 3 + 5n seconds. So it is on 1st position after 2008 seconds ($3 + 5 \times 401$) So on 20th after 2012 position.

3. In a city 100% votes are registered, in which 60% vote for congress and 40% vote for BJP. There is a person A, who gets 75% of congress votes and 8% of BJP votes. How many votes got by A?

Assume total votes are 100. So A got

$$75\% \text{ of } 60 = 45$$

$$8\% \text{ of } 40 = 3.2$$

A total of 48.2 %

4. Mean of 3 numbers is 10 more than the least of the numbers and 15 less than greatest of the 3. If the median of 3 numbers is 5, Find the sum of the 3 numbers?

Ans: Median is when the given numbers are arranged in ascending order, the middle one. Let the numbers are x, 5, y where x is the least and y is greatest.

$$\text{Given that } \frac{x+5+y}{3} = x+10$$

$$\text{and } \frac{x+5+y}{3} = y-15$$

Solving we get $x = 0$ and $y = 25$.

$$\text{So sum of the numbers} = 0 + 5 + 25 = 30$$

5. A and B start from house at 10am. They travel from their house on the MG road at 20kmph and 40 kmph. there is a Junction T on their path. A turns left at T junction at 12:00 noon, B reaches T earlier, and turns right. Both of them continue to travel till 2pm. What is the distance between A and B at 2 pm.

$$\text{Distance between House and T junction} = 20 \times 2 = 40$$

ie., B reached T at 11 am.

$$\text{B continued to right after 11 am and travelled upto 2. So distance covered by him} = 3 \times 40 = 120$$

$$\text{A reached T at 12 noon and travelled upto 2. So distance travelled by him} = 2 \times 20 = 40$$

$$\text{So total distance between them} = 120 + 40 = 160 \text{ km}$$

6. In a particular year, the month of january had exactly 4 thursdays, and 4 sundays. On which day of the week did january 1st occur in the year.

a) monday

b) tuesday

c) wednesday

d) thursday

Ans: If a month has 31 days, and it starts with sunday, Then Sundays, Mondays, tuesdays are 5 for that month. If this month starts with monday, then mondays, tuesdays, and wednesdays are 5 and remaining days are 4 each. so this month start with Monday.

7. A, E, F, and G ran a race.

A said "I did not finish 1st /4th

E said "I did not finish 4th"

F said "I finished 1st"

G said "I finished 4th"

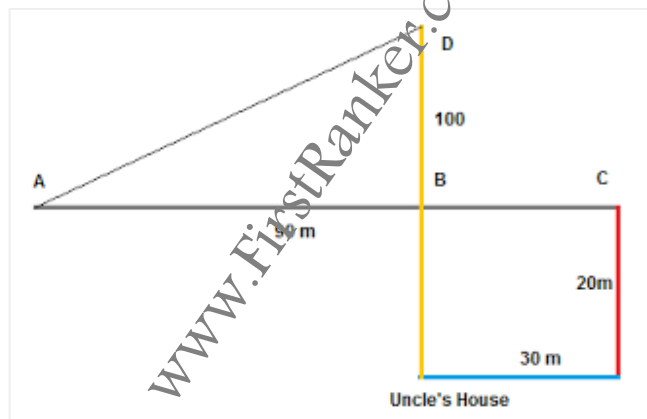
If there were no ties and exactly 3 children told the truth, when who finishes 4th?

- a) A
- b) E
- c) F
- d) G

Ans: Option D

8. A child was looking for his father. He went 90 m in the east before turning to his right. he went 20 m before turning to his right again to look for his father at his uncle's place 30 m from this point. His father was not there. From there he went 100m north before meeting his father in a street. How far did the son meet his father from the starting point.

- a) 90
- b) 30
- c) 80
- d) 100



From the diagram, $AB = 90 - 30 = 60$ and $BD = 100 - 20 = 80$

$$AD = \sqrt{AB^2 + BD^2} = \sqrt{60^2 + 80^2} = 100$$

9. In an office, at various times during the day the boss gives the secretary a letter to type, each time putting the letter on top of the pile in the secretary's inbox. Secretary takes the top letter and types it. Boss delivers in the order 1, 2, 3, 4, 5 which cannot be the order in which secretary types?

- a) 2, 4, 3, 5, 1
- b) 4, 5, 2, 3, 1
- c) 3, 2, 4, 1, 5
- d) 1, 2, 3, 4, 5

Ans: Option B

10. At 12.00 hours, J starts to walk from his house at 6 kmph. At 13.30, P follows him from J's house on his bicycle at 8 kmph. When will J be 3 km behind P?

By the time P starts J is $1.5 \text{ hr} \times 6 = 9 \text{ km}$ away from his house.

J is 3 km behind when P is 3 km ahead of him. ie., P has to cover 12 km. So he takes $12 / (8 - 6) = 6 \text{ hrs}$ after 13.30. So the required time is 19.30Hrs

11. J is faster than P. J and P each walk 24 km. Sum of the speeds of J and P is 7 kmph. Sum of time taken by them is 14 hours. Then J speed is equal to

- a) 7 kmph
- b) 3 kmph
- c) 5 kmph
- d) 4 kmph

Given $J > P$

$J + P = 7$, only options are (6, 1), (5, 2), (4, 3)

From the given options, If $J = 4$ the $P = 3$. Times taken by them = $\frac{24}{4} + \frac{24}{3} = 14$

12. In a G6 summit held at london. A french, a german, an italian, a british, a spanish, a polish diplomat represent their respective countries.

- (i) Polish sits immediately next to british
- (ii) German sits immediately next to italian, British or both
- (iii) French does not sit immediately next to italian
- (iv) If spanish sits immediately next to polish, spanish does not sit immediately next to Italian

Which of the following does not violate the stated conditions?

- a) FPBISG
- b) FGIPBS
- c) FGISPB
- d) FSPBGI
- e) FBGSIP

Ans: Option D

13. Raj drives slowly along the perimeter of a rectangular park at 24 kmph and completes one full round in 4 min. If the ratio of length to breadth of the park is 3 : 2, what are the dimensions?

- a) 450 m x 300 m
- b) 150 m x 100 m
- c) 480 m x 320 m
- d) 100 m x 100 m

$$24 \text{ kmph} = \frac{24 \times 1000}{60} = 400 \text{ m / min}$$

In 4 minutes he covered $4 \times 400 = 1600 \text{ m}$

This is equal to the perimeter $2(l + b) = 1600$

But $l : b = 3:2$

Let $l = 3k$, $b = 2k$

Substituting, we get $2(3k + 2k) = 1600 \Rightarrow k = 180$

So dimensions are 480×320

14. M is 30% of Q, Q is 20% of P and N is 50% of P. What is M / N

ans: Take $P = 100$, then $N = 50$, $Q = 20$, $M = 6$. So $M/N = 3/25$

15. At what time between 6 and 7 are the hands of the clock coincide?

Ans. Total = 360°

For hour = $360/12 = 30^\circ/\text{hr}$

For Minute = full rotation = $360^\circ/\text{hr}$

Let the line is 't', for 6 = $6 \times 30 = 180^\circ$

then

$$30t + 180 = 360t$$

$$330t = 180$$

$$t = 180/330$$

$$t = 6/11 \text{ hr } 6/11 \times 60 = 360/11 = 32 \frac{6}{11}$$

Ans. is 6:32

16. Series 1, 4, 2, 8, 6, 24, 22, 88 ?

Sol : The given series is in the format: $x \ 4, -2, x4, -2, x4, -2, x4, \dots$

$$1 \times 4 = 4$$

$$4 - 2 = 2$$

$$8 - 2 = 6$$

$$6 \times 4 = 24$$

$$24 - 2 = 22$$

$$22 \times 4 = 88$$

$$88 - 2 = 86$$

Ans: 86

17. 4 Women & 6 men have to be seated in a row given that no two women can sit together. How many different arrangements are there.

Sol : Let us first sit all the 6 men in 6 positions in $6!$ ways. Now there are 7 gaps between them in which 4 women can sit in 7P_4 ways.

So total ways are $6! \times {}^7P_4$

18. $x^y + y^x = 46$ Find x & y values ?

$$\text{Sol: } 1^{45} + 45^1 = 46$$

Hence $x = 1$, $y = 45$

19. In 10 years, A will be twice as old as B was 10 years ago. If A is now 9 years older than B the present age of B is

Soln: $A + 10 = 2(B - 10)$ (1)

$A = B + 9$ (2)

from equations. 1 & 2

we get $B = 39$ A will be $39 + 9 = 48$ years old.

20. A student can select one of 6 different math book, one of 3 different chemistry book & one of 4 different science book. In how many different ways students can select book of math, chemistry & science.

Sol: ${}^6C_1 \times {}^3C_1 \times {}^4C_1 = 6 \times 3 \times 4 = 72$ ways

21. Sum of two number is 50 & sum of three reciprocal is $1/12$ so find these two numbers

Sol : $x + y = 50$ (1) $x = 50 - y$ (2)

$\frac{1}{x} + \frac{1}{y} = \frac{1}{12} \Rightarrow \frac{y + x}{xy} = \frac{1}{12} \Rightarrow 12(y + x) = xy$ (3)

put (2) in (4)

$\Rightarrow 12(y + 50 - y) = (50 - y)y$

$\Rightarrow 12y + 600 - 12y = 50y - y^2$

$\Rightarrow y^2 - 50y + 600 = 0$

$\Rightarrow y^2 - 30y - 20y + 600 = 0$

$\Rightarrow y(y - 30) - 20(y - 30) = 0$

$\Rightarrow (y - 20)(y - 30) = 0$

$y = 20$ or $y = 30$

if $y = 20$ then $x = 30$

or $y = 30$ then $x = 20$

two numbers are 30 & 20

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