

Infosys previous questions - 6

1. A Lorry starts from Banglore to Mysore At 6.00 a.m, 7.00 a.m, 8.00 a.m.....10 p.m. Similarly another Lorry on another side starts from Mysore to Banglore at 6.00 a.m, 7.00 a.m, 8.00 a.m.....10.00 p.m. A Lorry takes 9 hours to travel from Banglore to Mysore and vice versa.

(I) A Lorry which has started At 6.00 a.m will cross how many Lorries.

(II) A Lorry which has started At 6.00 p.m will cross how many Lorries.

Sol:

I. The Lorry reaches Mysore by 3 PM so it meets all the Lorries which starts after 6 a.m and before 3 p.m. So 9 lorries. Also the Lorry which starts at night 10 p.m on the previous day at Mysore reaches Bangalore in morning 7 a.m. So it also meets that Lorry. So the Lorry which starts at 6:00 am will cross 10 Lorries.

II. The lorry which has started at 6 p.m reaches destination by 3 a.m. Lorries which start at the opposite destination at 10 am reaches its destination at 7 pm. So all the lorries which starts at 10 am to 10 pm meets this lorry . So in total 13.

2. GOOD is coded as 164 then BAD coded as 21.if ugly coded as 260 then JUMP?

Sol:

Coding = Sum of position of alphabets x Number of letters in the given word

$$\text{GOOD} = (7 + 15 + 15 + 4) \times 4 = 164$$

$$\text{BAD} = (2 + 1 + 4) \times 3 = 21$$

$$\text{UGLY} = (21 + 7 + 12 + 25) \times 4 = 260$$

$$\text{So, JUMP} = (10 + 21 + 13 + 16) \times 4 = 240$$

3. If Ever + Since = Darwin then D + a + r + w + i + n is ?

Sol: Tough one as it has 10 variables in total. 4 digit number + 5 digit number = 6 digit number. So left most digit in the answer be 1. and S = 9, a = 0. Now we have to use trial and error method.

		E	V	E	R
	S	I	N	C	E
D	A	R	W	I	N
		E	V	E	R
	9	I	N	C	E
1	0	R	W	I	N
		5	6	5	3
	9	7	8	2	5
1	0	3	4	7	8

Here E appeared 3 times, I, R, N two times each. Now $E + I$ or $E + I + 1$ is a two digit number with carry over. What could be the value of E and I here. 8 and 7 are possible. But from the second column, $8 + C = 7$ or 17 not possible. Similarly with 7 and 6. If $E = 5$, then the remaining value can be filled like above.

$$5653 + 97825 = 103478$$

Answer is 23

4. There are 16 hockey teams. find :

(1) Number of matches played when each team plays with each other twice.

(2) Number of matches played when each team plays each other once.

(3) Number of matches when knockout of 16 team is to be played

Sol:

1. Number of ways that each team played once with other team = ${}^{16}C_2$. To play with each team twice = $16 \times 15 = 240$

2. ${}^{16}C_2 = 120$

3. Total 4 rounds will be played. Total number of matches required = $8 + 4 + 2 + 1 = 15$

5. 15 tennis players take part in a tournament. Every player plays twice with each of his opponents. How many games are to be played?

A. 190

B. 200

C. 210

D. 220

E. 225

Sol:

Formula: ${}^{15}C_2 \times 2$. So $15 \times (15 - 1) = 15 \times 14 = 210$

6. 1, 11, 21, 1211, 111221, 312211, what is the next term in the series?

Sol:

We can understand it by writing in words

One

One time 1 that is = 11

Then two times 1 that is = 21

Then one time 2 and one time 1 that is = 1211

Then one time one, one time two and two time 1 that is = 111221

And last term is three time 1, two time 2, and one time 1 that is = 312211

So our next term will be one time 3 one time 1 two time 2 and two time 1

13112221 and so on

7. How many five digit numbers are there such that two left most digits are even and remaining are odd.

Sol:

$$N = 4 \times 5 \times 5 \times 5 \times 5 = 2375$$

Where

4 cases of first digit {2,4,6,8}

5 cases of second digit {0,2,4,6,8}

5 cases of third digit {1,3,5,7,9}

5 cases of fourth digit {1,3,5,7,9}

5 cases of fifth digit {1,3,5,7,9}

8. $13_46_8_180_210_75 = 64$. Use + and – in the empty places to make the equation holds good. Take m = number of + and n = number of – . Find m – n?

Sol:

$$13 - 46 - 8 - 180 + 210 + 75 = 64$$

$$m = 3$$

$$n = 4$$

$$m - n = -1$$

10. If a refrigerator contains 12 cans such that 7 blue cans and 5 red cans. In how many ways can we remove 8 cans so that atleast 1 blue can and 1 red can remains in the refrigerator.

Sol:

Possible ways of keeping atleast 1 blue and 1 red ball are drawing cans like (6,2) (5,3) (4,4)

$$(6,2) \Rightarrow {}^7C_6 \times {}^5C_2 \Rightarrow 7 \times 10 = 70$$

$$(5,3) \Rightarrow {}^7C_5 \times {}^5C_3 \Rightarrow 21 \times 10 = 210$$

$$(4,4) \Rightarrow {}^7C_4 \times {}^5C_4 \Rightarrow 35 \times 5 = 175$$

$$70 + 210 + 175 = 455$$

11. Find the 8th term in series?

2, 2, 12, 12, 30, 30, - - - -

Sol:

$$1^1 + 1 = 2$$

$$2^2 - 2 = 2$$

$$3^2 + 3 = 12$$

$$4^2 - 4 = 12$$

$$5^2 + 5 = 30$$

$$6^2 - 6 = 30$$

So 7th term = $(7^2 + 7) = 56$ and 8th term = $(\{8^2\} - 8) = 56$

Answer is 56

12. Find the next three terms of the series;

1, 4, 9, 18, 35 - - - - -

Sol:

$$2^1 - 1 = 1$$

$$2^2 + 0 = 4$$

$$2^3 + 1 = 9$$

$$2^4 + 2 = 18$$

$$2^5 + 3 = 35$$

So $2^6 + 4 = 68$, $2^7 + 5 = 133$, $2^8 + 6 = 262$

Answer is 68, 133, 262

13. Rahul took a part in cycling game where $\frac{1}{5}$ ahead of him and $\frac{5}{6}$ behind him then total number of participants =

Sol:

Let x be the total number of participants including Rahul.

Excluding rahul = $(x - 1)$

$$\frac{1}{5}(x-1) + \frac{5}{6}(x-1) = x$$

$$31x - 31 = 30x$$

Total number of participants $x = 31$

14. Data sufficiency question:

What are the speeds two trains travels with 80 yards and 85 yards long respectively? (Assume that former is faster than later)

a) they take 75 seconds to pass each other in opposite direction.

b) they take 37.5 seconds to pass each other in same direction

Sol:

Let the speeds be x and y

When moves in same direction the relative speed,

$$x - y = \frac{(85-80)}{37.5} = 0.13 \text{ - - - - - (I)}$$

When moves in opposite direction the relative speed, $x + y = 165/75 = 2.2$ - - - - (II)

Now, equation I + equation II gives, $2x = 0.13 + 2.2 = 2.33 \Rightarrow x = 1.165$

From equation I, $x - y = 0.13 \Rightarrow y = 1.165 - 0.13 = 1.035$

Therefore the speeds are 1.165 yards/sec and 1.035 yards/sec.

15. Reversing the digits of father's age we get son's age. One year ago father was twice in age of that of his son? find their current ages?

Sol:

Let father's age = $10x + y$

Son's age = $10y + x$ (As, it is got by reversing digits of fathers age)

At that point

$$(10x + y) - 1 = 2\{(10y + x) - 1\}$$

$$\Rightarrow x = (19y - 1)/8$$

Let $y = 3$ then $x = 7$.

For any other y value, x value combined with y value doesn't give a realistic age (like father's age 120 etc)

So, this has to be solution. Hence father's age = 73.

Son's age = 37.

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