Wipro previous placement questions - 2

1. At how many points between 10 O'clock and 11 O'clock are the minute hand and hour hand of a clock at an angle of 30 degrees to each other?

Sol:

Between 10 and 11, the minute hand and hour hand are at an angle of 30o to each at (12/11) x 45 minutes past 10 = 49 1/11 minutes past 10. The next time they will be at angle of 30o to each other will be at 11.

2. The egg vendor calls on his first customer & sells half his eggs & half an egg. To the 2nd customer he sells half of what he sells half of what he had left & half an egg. & to the 3rd customer he sells half what he had then left & half an egg. By the way he did not break any eggs. In the end three eggs were remaining . How many total eggs he was having ?

Sol:

31 eggs.

After selling to 3 persons , he was left with 3 eggs.

After selling to 2 persons , he was left with 3 x 2 + 1 = 7 eggs.

After selling to 1 person , he was left with 7 x 2 + 1 = 15 eggs.

Before selling to 1 st person , he was having 15 x 2 + 1 = 31 eggs.

3. There are some people in party, 1/3rd left the party . Then 2/5th of the remaining left the party , then 2/3rd of the remaining left the party . At last 6 were remaining . How many people were in total ?

Sol:

45

If x persons were there in total , then

x × (1 – 1/3)× (1 – 2/5) ×(1 – 2/3) = 6

x×2/3 × 3/5 × 1/3 = 6

x = 6 × 5 × 3/2 = 45

4. Two trains are traveling from point A to point B such that the speed of first train is 65 kmph and the speed of 2 train is 29 kmph. Where is the distance b/w A and B such that the slower train reached 5 hrs late compared to the faster?

Sol:

If x is the distance, then

x/29 – x/65 = 5

Then $x = 5 \times \dfrac{29 \times 65}{65 - 29}$ = 261.8055 kms

5. A person was fined for exceeding the speed limit by 10 km/hr.Another person was also fined for exceeding the same speed limit by twice the same.If the second person was traveling at a speed of 35 km/hr,find the speed limit.

a) 19 km/hr

b) 27 km/hr

c) 30 km/hr

d) 15 km/hr

Sol:

If x is speed limit,

Speed of first person = x + 10

Speed of 2nd person = x + 20

But speed of 2nd person = 35 kmph

x + 20 = 35

x = 15 kmph.

so speed limit is 15 kmph option D

6. The average of ten numbers is 7. If each number is multiplied by 12, then the average of new set of numbers is :

a) 7

b) 19

c) 82

d) 84

Sol:

The avg will be = 12×7= 84

7. The average of eight numbers is 14. The average of six of these numbers is 16.The average of the remaining two numbers is :

a) 4

b) 8

c) 16

d) none

Sol:

Average of eight numbers = 14

Average of six numbers = 16

Average will be = (14×8 – 16×6)/2

8. The average age of a class of 39 students is 15 years. If the age of the teacher be included, then the average increases by 3 months .Find the age of the teacher.

a) 25 years

b) 27 years

c) 35 years

d) 28 years

Sol:

Sum of the ages of the students = 39×15 = 585

New average = 15 years 3 months = $15 + \frac{1}{4}$ year

Sum of the ages of students and teacher = $40 \times 15\frac{1}{4}$ = $40 \times \frac{61}{4}$ = 610

Teacher age = 610 − 585 = 25 years.

9. Two trains start from stations A and B spaced 50 kms apart at the same time and speed. As the trains start, a bird flies from one train towards the other and on reaching the second train, it flies back to the first train. This is repeated till the trains collide. If the speed of the trains is 25 km/h and that of the bird is 100 km/h. How much did the bird travel till the collision.

Sol:

Since the trains is travelling at 25 kmph, at each other, the relative speed is 50 kmph.

Speed = 50 kmph

Distance = 50 km

Time to collision = distance / speed = 1 hr

Speed of bird = 100 kmph

Time flying = 1 hr (the bird is flying till the trains collide)

Distance travelled = speed × time = 100 km

10. There are 20 poles with a constant distance between each pole. A car takes 24 second to reach the 12th pole. How much will it take to reach the last pole.

Sol:

Assuming the car starts at the first pole.

To reach the 12th pole, the car need to travel 11 poles (the first pole doesn't count, as the car is already there).

11 poles 24 seconds

1 pole (24/11) seconds

To reach the last (20th) pole, the car needs to travel 19 poles.

19 pole 19 x (24/11) seconds

= 41.4545 seconds

11. Father's age is three years more than three times the son's age. After three years, father's age will be ten years more than twice the son's age. What is the father's present age?

Sol:

Let the son's present age be x years.then father's present age will be 3x + 3 years.

After 3 years,3x + 3 + 3 = 2 (x + 3) + 10

Solving we get, x = 10.

Substituting x =10 in 3x + 3,

Hence father's present age will be x = 33 years.

12. In a railway station, there are two trains going. One in the harbor line and one in the main line, each having a frequency of 10 minutes. The main line service starts at 5 o'clock and the harbor line starts at 5.02 A.M. A man goes to the station every day to catch the first train that comes. What is the probability of the man catching the first train?

Sol:

For each 10 min interval, if man comes in first 2 min, he'll catch the 1st train, if he comes in next 8 min, he'll catch the 2nd train.

Hence for harbor line = (2/10) = 0.2 and for main line 0.8.

13. A ship went on a voyage. After it had traveled 180 miles a plane started with 10 times the speed of the ship. Find the distance when they meet from starting point.

Sol:

Let the speed of the ship = m miles/hr. and plane took 't' hours to meet the ship

Then, m×t is the distance ship traveled after plane started

So we have, mt + 180 = 10mt

$\Rightarrow$ 9mt = 180

$\Rightarrow$ mt = 20

Hence distance = 180 + 20 = 200 miles

14. On 8th Feb, 2005 it was Tuesday. What was the day of the week on 8th Feb, 2004?

a. Tuesday

b. Monday

c. Sunday

d. Wednesday

Sol:

Sunday

The year 2004 is a leap year and therefore, two days will be preceded from Tuesday

15. At what time between 2 and 3 o'clock will the hands of a clock be together?

a. 10×10/11

b. 10×11/10

c. 11×10/11

d. 12×10/11

Answer : d

Sol:

The hands of a clock would be together when the angle between The hour hand and minute hand is Zero. Now apply the formula: $\theta = \left| 30h - \dfrac{11}{2}m \right|$

Here $\theta = 0$

$\Rightarrow 11/2m - 30h = 0$

⇒ 11/2m – 30×2 = 0

⇒ m = 120/11

16. At what angle the hands of a clock are inclined at 15 minutes past 5?

a. 117/2 °

b. 64 °

c. 135/2 °

d. 145/2 °

Sol:

Apply the formula:

$$\theta = \left| 30h - \frac{11}{2}m \right|$$

⇒ Angle = 30 × 5 – 11/2 × 15 = 150 – 165/2 = 135/2

17. At 3.40, the hour hand and the minute hand of a clock form an angle of

a. 120°

b. 125°

c. 130°

d. 135°

Answer: C

Sol:

Use formula $\theta = \left| 30h - \frac{11}{2}m \right|$

Angle = 30×3 – 11/2 × 40 = 90 – 220 = 130°

18. How many times in a day, the hands of a clock are straight?

a. 22

b. 24

c. 44

d. 48

Sol:

The hands of a clock point in opposite directions (in the same straight line) 11 times in every 12 hours. (Because between 5 and 7 they point in opposite directions at 6 o'clock only).

So, in a day, the hands point in the opposite directions 22 times.

19. Find the angle between the hour and the minute hand of a clock when the time is 3.25.

a. 47 ½

b. 49 ½

c. 55 ½

d. 57 ½

Sol:

Formula : $\theta = \left| 30h - \dfrac{11}{2}m \right|$

Angle = 11/2 × 25 – 30×3 = 95/2 = 47.5

20. At what time, in minutes, between 3 o'clock and 4 o'clock, both the needles will coincide each other?

A. 5 1/11 °

B. 12 4/11 °

C. 13 4/11°

D. 16 4/11°

sol:

Formula : $\theta = \left| 30h - \dfrac{11}{2}m \right|$

Here angle is 0. So

11/2 m – 30 h = 0

11/2 m – 30 × 3 = 0

m = 180/11

= 16 4/11

Ans:: D