Cognizant Placement Papers – 02

1. Three cubes of edges 6 cms, 8 cms and 10 cms are meted without loss of metal into a single cube. The edge of the new cube will be:
a) 16 cm
b) 14 cm
c) 12 cm
d) 8 cm

Answer: c) 12 cm

Solution:
Since the cube is melted so the volume of the new cube must be the same.
Volume of new cube = Volume of cube 1 + cube 2 + cube 3 = 63 + 83 + 103 = 216 + 512 + 1000
a^3 = 1728,
a = (1728)^(1/3) = 12

2. A reduction in the price of mangoes by 20% enables a farmer to purchase 12 more mangoes for Rs. 15. So what could be the price of 16 mangoes before the reduction of the price?
a) Rs. 9
b) Rs. 7
c) Rs. 5
d) Rs. 6

Answer: c) Rs. 5

Solution:
We know that
Price * Consumption = Expenditure
and, Consumption = Expenditure Price
So,
(15 / 8x) – (15 / x) = 12
x = (15 * 2) / (12 * 8)
For 16 Mangoes = [(15 * 2) / (12 * 8)] * 16 = 5 (answer)

3. Aman completes a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.
a) 220 km
b) 234 km
c) 230 km
d) 224 km

Answer: d) 224 km

Solution:
According to the question,
((1/2)x)/21 + ((1/2)x)/24 = 10
Solving this equation we get 15x = 168 * 20
Further x = (168 * 20)/15 = 224 km.

4. There are two alarm clocks ringing at regular intervals of 50 seconds and 48 seconds. If they first beep together at 12 noon, at what time will they beep again together?
a) 12:10 PM
b) 12:20 PM
c) 12:11 PM
d) 12:12 PM

Answer: b) 12:20 PM

Solution:
This can be found by finding the LCM of 48 and 50.
They will ring together after,
LCM of 48 and 50 secs.
48 = 2*2*2*2*3;
50 = 2*5*5;
So, LCM = 2*2*2*2*3*5*5 = 1200 secs = 20 min.
Therefore, they will beep together at 12:20 PM next.

5. Ram purchased 20 dozens of toys at the rate of Rs. 375 per dozen. He sold each one of them at the rate of Rs. 33. What was his percentage profit?
a) 5.6 %
b) 4.5 %
c) 3.5 %
d) 6.5 %

Answer: a) 5.6 %

Solution:
Let's find the cost price of 1 toy = 375 / 12 = 31.25 rupees.
Now, SP of 1 toy = 33 rupees.
So, Gain = SP – CP = (33 – 31.25) = Rs. 1.75
and Profit % = 1.75 / 31.25 * 100 = 5.6 %

6. A cistern can be filled by a tap in 4 hours while it can be emptied by another tap in 9 hours. If both the taps are opened simultaneously, then after how much time cistern will get filled?
a) 7 hours

b) 7.1 hours
c) 7.2 hours
d) 7.3 hours

Answer: 7.2 hours

Solution:
So according to the question,
1/4 th of the cistern can be filled in one hour
1/9 th of the cistern can be emptied in 1 hour
Therfore, net filled in 1 hour = 1/4 – 1/9 = 5/36
So cistern that can be filled in 36/5 hours = 7.2 hours

7. In how many different ways, can the letters of the word 'INHALE' be arranged?
a) 650 ways
b) 360 ways
c) 120 ways
d) 720 ways

Answer: d) 720 ways

Solution:
There are 6 letters in the word and no letters are repeated.
So, the 6 letters can be arranged in 6! ways = 720 ways.

8. In a meeting, there are 12 persons. All the persons of one country shake hands with all delegates of the other country. Find the number of handshakes possible?
a) 72
b) 288
c) 144
d) 234

Answer: c) 144

Solution:
Total number of handshakes = 12 * 12 = 144

9. What is the smallest number which when decreased by 8 is divisible by 21, 27, 33, and 55?
a) 1490
b) 10405
c) 15490
d) none of the above

Answer: d) none of the above

Solution:
We need to find the LCM of the given numbers,
LCM of 21, 27, 33, and 55 = 10395
So we need to add an extra 5 = 10403 (answer)

10. There are 8 football teams in a certain league and each team plays each of the other teams exactly once. If each game is played by 2 teams, what is the total number of games played?
a) 15
b) 16
c) 64
d) 28

Answer: d) 28

Solution:
Since there are 8 teams, so each pair will pay a match = 8C2 = 28 matches.