

1 - C	21 - C	41 - A	61 - C	81 - A
2 - A	22 - B	42 - C	62 - D	82 - D
3 - D	23 - A	43 - B	63 - A	83 - C
4 - A	24 - D	44 - C	64 - C	84 - A
5 - C	25 - B	45 - A	65 - C	85 - B
6 - C	26 - A	46 - C	66 - B	86 - C
7 - B	27 - C	47 - D	67 - D	87 - A
8 - D	28 - D	48 - B	68 - B	88 - D
9 - C	29 - B	49 - D	69 - C	89 - A
10 - D	30 - C	50 - C	70 - C	90 - B
11 - B	31 - B	51 - B	71 - C	91 - C
12 - C	32 - B	52 - B	72 - D	92 - C
13 - C	33 - A	53 - C	73 - D	93 - C
14 - B	34 - C	54 - C	74 - D	94 - B
15 - A	35 - C	55 - B	75 - C	95 - B
16 - C	36 - B	56 - C	76 - C	96 - C
17 - B	37 - A	57 - A	77 - D	97 - C
18 - D	38 - B	58 - D	78 - D	98 - A
19 - B	39 - B	59 - C	79 - C	99 - A
20 - B	40 - B	60 - C	80 - D	100 - B

### Solution 11 -

Merchant B computes his profit as a percentage of selling price. He makes a profit of 25% on selling price of Rs.1000. i.e. his profit = 25% of 1000 = Rs.250

Merchant A computes his profit as a percentage of cost price.

Therefore, when he makes a profit of 25% or  $\frac{1}{4}$ th of his cost price, then his profit expressed as a percentage of selling price =  $\frac{1}{1+4} = \frac{1}{5}$ th or 20% of selling price.

So, Merchant A makes a profit of 20% of Rs.1000 = Rs.200.

Merchant B makes a profit of Rs.250 and Merchant A makes a profit of Rs.200

Hence, Merchant B makes Rs.50 more profit than Merchant A.

### Solution 12

The sum of the first 100 natural numbers is .

$$\frac{n(n+1)}{2} = \frac{100(101)}{2} = 50(101)$$

101 is an odd number and 50 is divisible by 2.

Hence,  $50 \times 101$  will be divisible by 2.

### **Solution 13**

Let  $x$  and  $y$  be the upstream and downstream speed respectively.

Hence,  $50/x + 72/y = 9$  and  $70/x + 90/y = 12$

Solving for  $x$  and  $y$  we get  $x = 10$  km/hr and  $y = 18$  km/hr

We know that Speed of the stream =  $1/2 \times (\text{downstream speed} - \text{upstream speed})$   
 $= 1/2 (18 - 10) = 4$  km/hr.

### **Solution 14**

In one day X can finish  $1/15^{\text{th}}$  of the work.

In one day Y can finish  $1/10^{\text{th}}$  of the work.

Let us say that in one day Z can finish  $1/Z^{\text{th}}$  of the work.

When all the three work together in one day they can finish  $1/15 + 1/10 + 1/Z = 1/5^{\text{th}}$  of the work.

Therefore,  $1/Z = 1/30$ .

Ratio of their efficiencies =  $1/15 : 1/10 : 1/30 = 2 : 3 : 1$ . Therefore Z receives  $1/6^{\text{th}}$  of the total money.

According to their efficiencies money is divided as 240: 360: 120.

Hence, the share of Z = Rs 120

### **Solution 15**

Let the amount of Basmati rice being mixed be  $x$  kgs. As the trader makes 25% profit by selling the mixture at Rs.40/kg, his cost /kg of the mixture = Rs.32/kg.

$$\text{i.e. } (x \times 42) + (25 \times 24) = 32(x + 25)$$

$$\Rightarrow 42x + 600 = 32x + 800$$

$$\Rightarrow 10x = 200 \text{ or } x = 20 \text{ kgs.}$$

### **Solution 16**

Let the number of horses =  $x$

Then the number of pigeons =  $80 - x$ .

Each pigeon has 2 legs and each horse has 4 legs.

Therefore, total number of legs =  $4x + 2(80 - x) = 260$

$$\Rightarrow 4x + 160 - 2x = 260$$

$$\Rightarrow 2x = 100$$

$$\Rightarrow x = 50.$$

### **Solution 17**

Let the cost of an equipment is Rs. 100.

Now the percentages of depreciation at the end of 1st, 2nd, 3rd years are 15, 13.5, 12, which are in A.P., with  $a = 15$  and  $d = -1.5$ .

Hence, percentage of depreciation in the tenth year =  $a + (10-1)d = 15 + 9(-1.5) = 1.5$

Also total value depreciated in 10 years =  $15 + 13.5 + 12 + \dots + 1.5 = 82.5$

Hence, the value of equipment at the end of 10 years =  $100 - 82.5 = 17.5$ .

The total cost being Rs. 6,00,000/100 \* 17.5 = Rs. 1,05,000.

### **Solution 18**

When a 5 cc cube is sliced into 1 cc cubes, we will get  $5*5*5 = 125$  1 cc cubes.

In each side of the larger cube, the smaller cubes on the edges will have more than one of their sides painted.

Therefore, the cubes which are not on the edge of the larger cube and that lie on the facing sides of the larger cube will have exactly one side painted.

In each face of the larger cube, there will be  $5*5 = 25$  cubes. Of these, there will be 16 cubes on the edge and  $3*3 = 9$  cubes which are not on the edge.

Therefore, there will be 9 1-cc cubes per face that will have exactly one of their sides painted.

In total, there will be  $9*6 = 54$  such cubes.