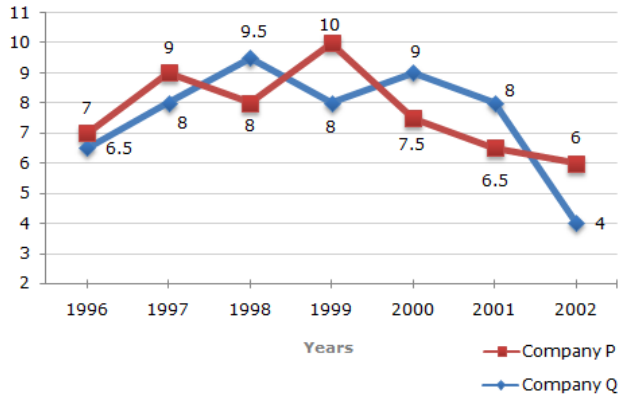


# Surprise Quant sectional Test 6



Directions: ( 1-5): Two different finance companies declare fixed annual rate of interest on the amounts invested with them by investors. The rate of interest offered by these companies may differ from year to year depending on the variation in the economy of the country and the banks rate of interest. The annual rate of interest offered by the two Companies P and Q over the years is shown by the line graph provided below.



- A sum of Rs. 4.75 lakhs was invested in Company Q in 1999 for one year. How much more interest would have been earned if the sum was invested in Company P?
  - Rs. 19,000
  - Rs. 14,250
  - Rs. 11,750
  - Rs. 9,500
  - None of these
- If two different amounts in the ratio 8:9 are invested in Companies P and Q respectively in 2002, then the amounts received after one year as interests from Companies P and Q are respectively in the ratio?
  - 2:3
  - 3:4
  - 6:7
  - 4:3
  - None of these
- In 2000, a part of Rs. 30 lakhs was invested in Company P and the rest was invested in Company Q for one year. The total interest received was Rs. 2.43 lakhs. What was the amount invested in Company P?
  - Rs. 9 lakh
  - Rs. 11 lakh
  - Rs. 12 lakh
  - Rs. 18 lakh
  - None of these

- An investor invested a sum of Rs. 12 lakhs in Company P in 1998. The total amount received after one year was re-invested in the same Company for one more year. The total appreciation received by the investor on his investment was?
  - Rs. 2,96,200
  - Rs. 2,42,200
  - Rs. 2,25,600
  - Rs. 2,16,000
  - None of these
- An investor invested Rs. 5 lakhs in Company Q in 1996. After one year, the entire amount along with the interest was transferred as investment to Company P in 1997 for one year. What amount will be received from Company P, by the investor?
  - Rs. 5,94,550
  - Rs. 5,80,425
  - Rs. 5,77,800
  - Rs. 5,77,500
  - None of these

Q6. A ball of lead, 4 cm in diameter, is covered with gold. If the volume of the gold and lead are equal, then the thickness of gold is approximately

- [given  $\sqrt[3]{2} = 1.259$ ]
- 5.038 cm
  - 5.190 cm
  - 1.038 cm
  - 0.518 cm
  - None of these

Q7. A conical cup is filled with ice cream. The ice cream forms a hemispherical shape on its open top. The height of the hemispherical part is 7 cm. The radius of the hemispherical part equals the height of the cone. Then the volume of the ice cream is  $[\pi = 22/7]$

- 1078 m<sup>3</sup>
- 1708 m<sup>3</sup>
- 7108 m<sup>3</sup>
- 7180 m<sup>3</sup>
- None of these

Q8. The ratio of the incomes of two persons is 5 : 3 and that of their expenditure is 9 : 5. If they save Rs. 2600 and Rs. 1800 respectively, then their incomes are:

- Rs. 8000, Rs. 4800
- Rs. 6000, Rs. 3600
- Rs. 10000, Rs. 60000
- Rs. 9000, Rs. 5400
- None of these

Q9. A bag contains one rupee, 50 paise and 25 paise coins in the ratio 2 : 3 : 5. Their total value is Rs. 144. The value of 50-paise coins is:

- Rs. 24
- Rs. 36

- (c) Rs. 48  
(d) Rs. 72  
(e) None of these

- 4) 17%  
5) 18%

Q10. Two numbers are in the ratio  $1\frac{1}{2} : \frac{2}{3}$ . When each of these is increased by 15, they become in the ratio  $1\frac{2}{3} : \frac{1}{2}$ . The greater of the numbers is:

- (a) 27  
(b) 36  
(c) 48  
(d) 64  
(e) None of these

12. What is the approx percentage of unsold toys of type B in 2004?

- 1) 16%  
2) 25%  
3) 30%  
4) 35%  
5) 20%

Direction (Q. 11-15): Study the following table carefully to answer the questions that follow:

**Number of 4 types of toys manufactured by a Company**

Type ↓ Year →	2001	2002	2003	2004
A	205	195	167	148
B	192	364	217	252
C	630	510	398	416
D	107	327	463	659

**Sold Toys**

Year →	2001	2002	2003	2004
A	163	142	151	101
B	95	231	169	176
C	490	398	199	268
D	97	264	395	543

13. What is the average number of toys produced through all the year of all types?

- 1) 1412.5  
2) 1612.5  
3) 328.12  
4) 1210.5  
5) 1312.5

14. What is the average number of toys sold through all the years of all types?

- 1) 242.65  
2) 930.5  
3) 970.5  
4) 910.5  
5) 200.25

15. What is the average number of toys sold by A in 2002 and manufactured by D in 2003?

- 1) 300.5  
2) 302.5  
3) 289.5  
4) 400  
5) 150.5

11. What was the percentage of unsold toys of type C in 2002? (approx)

- 1) 20%  
2) 30%  
3) 22%

Solutions:

1. Answer: (D)  
 DIFFERENCE = Rs. [(10% of 4.75) - (8% of 4.75)]  
 = Rs. (2% of 4.75) lakhs  
 = Rs. 0.095 lakhs  
 = Rs. 9500.
2. Answer: (D)  
 Let the amounts invested in 2002 in Companies P and Q be Rs. 8x and Rs. 9x respectively.  
 Then, interest received after one year from Company P = Rs. (6% of 8x)  
 = Rs. (48x/100)  
 and interest received after one year from Company Q = Rs. (4% of 9x)  
 = Rs. (36x/100)  
 Required ratio = 4/3
3. Answer: (D)
4. Answer: (C)  
 Amount received from Company P after one year (i.e., in 199) on investing Rs. 12 lakhs in it  
 = Rs. [12 + (8% of 12)] lakhs  
 = Rs. 12.96 lakhs.  
 Appreciation received on investment during the period of two years  
 = Rs. (14.256 - 12) lakhs  
 = Rs. 2.256 lakhs = Rs. 2, 25,600
5. Answer: (B)  
 Amount received from Company Q after one year on investment of Rs. 5 lakhs in the year 1996  
 = Rs. [5 + (6.5% of 5)] lakhs  
 = Rs. 5.325 lakhs.  
 Amount received from Company P after one year on investment of Rs. 5.325 lakhs in the year 1997  
 = Rs. [5.325 + (9% of 5.325)] lakhs  
 = Rs. 5.80425 lakhs  
 = Rs. 5, 80, 425

S6. Ans.(d)

Sol. Volume of lead =  $\frac{4}{3}\pi r^3 = \frac{4}{3}\pi \times 2^3$

Let, the thickness of gold be x cm.

$\therefore$  Volume of gold =  $\frac{4}{3}\pi((2+x)^3 - 2^3) \text{ cm}^3$

Now, according to the question,

$$\frac{4}{3}\pi((2+x)^3 - 2^3) = \frac{4}{3}\pi \times 2^3$$

$$\Rightarrow (2+x)^3 - 2^3 = 2^3$$

$$\Rightarrow (2+x)^3 = 8 + 8 = 16$$

$$\Rightarrow (2+x)^3 = 2^3 \times 2$$

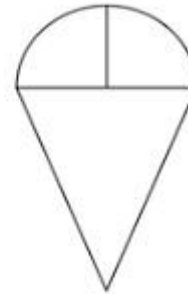
$$\Rightarrow 2+x = 2 \times \sqrt[3]{2}$$

$$\Rightarrow 2+x = 2 \times 1.259 = 2.518$$

$$\therefore x = 2.518 - 2 = 0.518 \text{ cm}$$

S7. Ans.(a)

Sol.



Volume of hemisphere =  $\frac{2}{3}\pi r^3$ ,

where  $r$  = radius = 7 cm

$$= \left(\frac{2}{3} \times \frac{22}{7} \times 7 \times 7 \times 7\right) \text{ cm}^3$$

Volume of conical part =  $\frac{1}{3}\pi r^2 h$  [ $\because r = h$ ]

$$= \left(\frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \times 7\right) \text{ cm}^3$$

$\therefore$  Volume of ice cream

$$= \frac{2}{3} \times \frac{22}{7} \times 7^3 + \frac{1}{3} \times \frac{22}{7} \times 7^3$$

$$= \frac{22}{7} \times 7^3 = 22 \times 7^2 = 1078 \text{ cm}^3$$

S8. Ans.(a)

Sol.

Let,  $I_1$  and  $I_2$  be the incomes of two persons and  $E_1, E_2$  be their expenditure respectively.

$$\therefore \frac{I_1}{I_2} = \frac{5}{3}, \frac{E_1}{E_2} = \frac{9}{5}$$

$$\text{And } I_1 - E_2 = 2600 \quad \dots(i)$$

$$I_1 - E_2 = 1800$$

$$\Rightarrow \frac{3I_1}{5} - \frac{5E_1}{9} = 1800$$

$$\Rightarrow 27I_1 - 25E_1 = 1800 \times 45 \quad \dots(ii)$$

$$\Rightarrow 27I_1 - 27E_1 = 2600 \times 27 \quad \dots(iii)$$

$\therefore$  From (ii) and (iii), we get

$$2E_1 = 1800 \times 45 - 2600 \times 27$$

$$E_1 = 900 \times 45 - 1300 \times 27 = 100(405 - 351) = 5400$$

$$\therefore I_1 = 8,000; I_2 = 4800, \text{ i.e.}$$

The incomes of the two persons are

Rs. 8000 and 4800 respectively.

S9. Ans.(b)

Sol. Let the number of one-rupee coins, 50-paise coins and 25-paise coins be 2k, 3k and 5k, respectively.

$$\therefore 2k \times 1 + 3k \times 0.50 + 5k \times 0.25 = 114$$

$$\Rightarrow 2k + 1.50k + 1.25k = 114$$

$$\Rightarrow 4.75k = 114$$

$$\Rightarrow k = 24.$$

$$50 \text{ paise value} = 1.5x = 1.5 \times 24 = 36$$

S10. Ans.(c)

Sol. Let the numbers be  $\frac{3}{2}x$  and  $\frac{8}{3}x$

$$\frac{\frac{3}{2}x + 15}{\frac{8}{3} + 15} = \frac{\frac{5}{2}}{\frac{5}{2}} \text{ or, } \frac{\frac{3x+30}{2}}{\frac{8x+45}{3}} = \frac{2}{3}$$

$$\text{Or, } \frac{3x+30}{8x+45} \times \frac{3}{2} = \frac{2}{3} \text{ or, } = \frac{3x+30}{8x+45} = \frac{4}{9} \text{ or } x = 18.$$

$$\therefore \text{ greater of the numbers} = \frac{8}{3} \times 18 = 48.$$

6. 3

7. 3

8. 5

9. 3

10. 2