FAROOQ ACADEMY

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XII - BUSINESS MATHS

TOP 10 IMPORTANT FIVE MARKS CHAPTER - 01

1. Two types of soaps A and B are in the market. Their present market shares are 15% for A and 85% for B. Of those who bought A the previous year, 65% continued to buy it again while 35% switch over to B. Of those who bought B the previous year, 55% buy it again and 45% switch over to A. Find their market shares after one year and when is the equilibrium reached? (EXERCISE 1.3 - 3)

2. Two products A and B currently share the market with shares 50% and 50% each respectively. Each week some brand switching takes place. Of those who bought A the previous week, 60% buy it again whereas 40% switch over to B. Of those who bought B the previous week, 80% buy it again whereas 20% switch over to A. Find their shares after one week and after two weeks. If the price war continues, when is the equilibrium reached?(EXERCISE 1.3 - 4)

3. For what values of the parameter λ, will the following equations fail to have unique solutions: $3x-y+\lambda z=1, 2x+y+z=2, x+2y-\lambda z= -1$ by the rank method (EXERCISE 1.1-6)

4.Find k, if the equations $x+2y-3z=-2$, $3x-y-2z=1$, $2x+3y-5z=k$ are consistent. (EXAMPLE 1.15)

5.Investigate for what values of 'a' and 'b' the following system of equations $x+y+z = 6$, $x+2y+3z = 10$, $x+2y+az = b$ have (i) no solution (ii) a unique solution (iii) an infinite number of solutions. (EXAMPLE 1.17)

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6. Solve by Cramer's rule

x+y+z=4,

2x-y+3z=1,

3x+2y-z=1 (EXAMPLE 1.22)

7.A total of ₹8,600 was invested in two accounts. One account earned 4 3/4 % annual interest and the other earned 6 1/2% annual interest. If the total interest for one year was ₹431.25, how much was invested in each account? (Use determinant method). EXERCISE 1.2 - 3

8.An amount of ₹5,000/- is to be deposited in three different bonds bearing 6%, 7% and 8% per year respectively. Total annual income is ₹358/-. If the income from first two investments is `70/- more than the income from the third, then find the amount of investment in each bond by rank method. (EXERCISE 1.1 -8)

9.Show that the equations

x+y+z=6,

x+2y+3z=14,

x+4y+7z=30 are consistent and solve them.

10. Show that the following system of equations has a unique solution:

x + y + z = 3,

x+ 2y + 3z=4 ,

x + 4y + 9z = 6 by rank method.

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