

SDCMS MBA Modal Question Paper – 2020

Quantitative Techniques for Management

Time: 3 Hours
PAPER

PAPER CODE: KMB – 206

Total Marks: 100

ID:270247

Section-A

Attempt all questions in brief.

Marks (2*10=20)

1. What are the tools of Q.T.?
2. Give some uses of Q.T.
3. What are the applications of Linear Programming in Management?
4. What do you mean by Initial Basic Feasible Solutions of Transportation Problem?
5. Distinguish between Assignment & Transportation Problem.
6. What do you mean by saddle point?
7. Define a sequencing problem.
8. What do you mean by arrival rate and service rate in Queuing Theory?
9. What is the importance of replacement?
10. Explain time estimates in PERT.

Section-B

Attempt all questions in detail.

Marks (3*10=30)

1. Discuss the significance and scope of Operation Research in business and industry.
2. A company produces two types of presentation goods A and B that require gold and silver. Each unit of type A requires 3 grams of silver and 1 gram of gold while that of B requires 1 grams of silver and 2 grams of gold. The company can procure 9 grams of silver and 8 grams of gold. If each unit of type A brings a profit of Rs. 40 and that of type B Rs. 50. Determine the number of units of each type that should be produced to maximize the profit. Indicate the feasible region on a graph paper.
3. Why does the problem of replacement arise? What is individual and group replacement?

Section-C

Attempt all questions in brief.

Marks (5*10=50)

1. Discuss briefly the limitations of operation research techniques.
2. Solve Linear Programming Problem and solve the following LPP-
Maximize, $Z = 30x_1 + 40x_2 + 20x_3$
Stc, $10x_1 + 12x_2 + 7x_3 \leq 10,000$
 $7x_1 + 10x_2 + 8x_3 \leq 8,000$
 $x_1 + x_2 + x_3 \leq 1,000$
where, $x_1, x_2, x_3 \geq 0$
3. Explain the theory of dominance in the solution of rectangular game.

4. The XYZ Co. has 5 jobs to be done and 5 men to do these jobs. The no. of hours each man would like to accomplish each job is given below:

Jobs	Men				
	A	B	C	D	E
1	4	6	11	16	9
2	5	8	16	19	9
3	9	13	21	21	13
4	6	6	9	11	7
5	11	11	16	26	11

5. Calculate average expected time, and draw network for a project with the following activity times.

Activity	Op. time (in hrs.)	Time (in hrs.)	Mixed Lotelly time (in hrs.)
2-4	1	5	3
2-6	1	7	4
4-8	4	16	7
6-8	1	5	1.5
8-10	1.5	14.5	3.5

Also calculate the variance and standard derivation of the project.