SDCMS MBA Modal Question Paper – 2020
Quantitative Techniques for Management

Time: 3 Hours
PAPER

PAPER CODE: KMB – 206   **Total Marks: 100**   **ID:270246**

Section-A

Attempt all questions in brief.   **Marks (2*10=20)**

1. What is OT? State any four applications?
2. Explain time estimates in PERT.
3. What are slack & surplus variables?
4. Discuss in brief 'duality' in Linear Programming?
5. Explain Basic feasible solution & non-degenerate solution?
6. Discuss Hungarian method?
7. Explain pure and mixed strategies?
8. What is replacement situations & policies?
9. Explain M/M/1 Queuing Model?
10. Write the meaning of crashing of networks?

Section-B

Attempt all questions in detail.   **Marks (3*10=30)**

1. Solve the following LPP:-
   Maximize, $Z = 3x + 5y$
   Subject to constraints –
   $x + 2y \leq 20$
   $x + y \leq 15$
   $x \leq 5$
   where, $x, y, \geq 0$

2. Discuss the significance and scope of quantitative techniques for manager in business and industry.
3. At a service centre customers arrive at the rate of 10 per hour and are served at the rate of 15 per hour. Their arrival follows poisson distribution and service is exponentially distributed. Find the average length and average waiting time in the system.

Section-C

Attempt all questions in brief.   **Marks (5*10=50)**

1. What are the essential characteristics of Quantitative Techniques for Managers? Mention different tools and techniques in a quantitative technique for managers. Point out its limitations.

2. Solve Linear Programming Problem and solve the following LPP-
   Maximize, $Z = 3x + 9y$
   Stc, $x + 4y \leq 8$
        $x + 2y \leq 4$
       where, $x, y \geq 0$

3. Solve the following assignment problem. The data given in the matrix refer to production in certain units –

	Machines			
Operators	A	B	C	D
1	10	5	7	8
2	11	4	9	10
3	8	4	9	7
4	7	5	6	4
5	8	9	7	5

4. Explain two person zero sum game with suitable example, and solve the following game-

		Player B	
Player A	B1	B2	B3
A1	1	7	2
A2	6	2	7
A3	5	1	5

5. Seven jobs are to be processed through two machines A and B in the order AB. Processing time (in hours) are given below-

Job	1	2	3	4	5	6	7
Machine A	10	12	13	7	14	5	16
Machine B	15	11	8	9	6	7	16

Determine the optimal sequence and total elapsed time.