Q.P. Code: **16MB708** **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
MBA I Year II Semester Supplementary Examinations Jan 2018
OPERATIONS RESEARCH FOR MANAGERS

Time: **3 hours** Max. Marks: **60**

SECTION – A
(Answer all Five Units **5 x 10 = 50** Marks)

1 Enumerate, with brief description, some of the important techniques used in Operations Research. 10M

OR

2 Describe the various steps involved in Operations Research study. 10M

UNIT-II

3 Solve the following problem by Simplex method.

Max. $Z = 8x_1+19x_2+7x_3$
S/t $3x_1+4x_2+x_3 \leq 25$
$x_1+3x_2+3x_3 \leq 50$
$x_1, x_2, x_3 \geq 0.$

10M

OR

4 Find Assignement cost for the below problem through HAM method.

	1	2	3	4
A	10	12	9	11
B	5	10	7	8
C	12	14	13	11
D	8	15	11	9

10M

UNIT-III

5 Define job sequencing and explain its methods of solution. 10M

OR

6 Use Dominance rule to determine the value of the game and optimal strategies for both players.

	I	II	III
I	-4	6	3
II	-3	-3	4
III	2	-3	4

10M

UNIT-IV

7 Explain the characteristics of waiting line theory in detail. 10M

OR

8 A TV repairman finds that the time spent on his jobs has an exponential distribution with mean 30 minutes. If he repairs sets in the order in which they come in , and if the arrival of sets is approximately poisson with an average rate of 10 per 8 hour day,.

What is the length of the system?

What is the length of queue?

What is the waiting time of the queue?

What is the waiting time of the system?

10M

UNIT-V

9 What is replacement model and explain the replacement model types in detail.

10M

OR

10 Draw the network and identify the critical path. 10M

Activity	Duration
1-2	7
1-3	7
2-3	8
2-4	6
3-6	9
4-5	3
5-6	5

SECTION – B

(Compulsory Question)

1 x 10 = 10 Marks

11. Case Study

Apply project crashing for the below project and calculate the cost of the project

Activity	Time		Cost	
	Normal	Crash	Normal	Crash
1-2	8	4	3000	6000
1-3	5	3	4000	8000
2-4	9	6	4000	5500
3-5	7	5	2000	3200
2-5	5	1	8000	12000
4-6	3	2	10000	11200
5-6	6	2	4000	6800
6-7	10	7	6000	8700
5-7	9	5	4200	9000

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