Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .

MECM - 204

M.E./M.Tech., II Semester

Examination, June 2016

Productivity and Management

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

iii) Draw neat diagrams wherever required.

1. a) What is operation research? State its applications in engineering.

   b) State the limitations, scope and opportunities of operations research in problem solving.

2. a) Compare linear programming and integer programming.

   b) Compare Assignment and Transportation problems.

3. a) Explain Hurwitz criteria of decision analysis.

   b) Discuss unbalanced assignment problems.

4. a) Explain the steps to crushing a network.

   b) Define Slack and floats. What are forward and backward path calculations?

5. Minimize $Z = 8x_1 + 4x_2 + 2x_3$

   Subject to $4x_1 + 2x_2 + x_3 \leq 8$

   $3x_1 + 2x_3 \leq 10$

   $x_1 + x_2 + x_3 = 4$

   $x_1, x_2, x_3 \geq 0$

   Using Simplex method.

6. Briefly explain the following points:
   i) Node http://www.rgpvonline.com
   ii) Node numbering rule
   iii) Dummy activity
   iv) Critical path

7. Solve the following assignment problem. Assign one machine to one worker so that time in hours is minimized.

	M_1	M_2	M_3	M_4	M_5
A	3	2	7	4	8
B	5	4	3	8	5
C	3	7	9	1	2
D	4	2	6	5	7
E	2	8	4	6	6

8. Write short notes on the following: (any two)
   a) Principle of optimality
   b) Bellman's principle
   c) Time scaled NW

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