Code No: **R32036** **R10** **Set No. 1**

III B.Tech II Semester Supplementary Examinations, April -2017

INDUSTRIAL ENGINEERING & MANAGEMENT

(Mechanical Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Explain the concept of management. What is its importance?
b) Explain the development of industrial engineering.

2 a) List out and briefly explain quantitative techniques used for optimal design of layout.
b) What are the advantages derived from efficient plant layout?

3 a) What do you understand by 'work measurement' and elaborate the important techniques involved in work measurement?
b) What are the benefits of time study?

4 The following data were obtained over a 5-day period to indicate X and R chart for a quality characteristic of a certain manufacturing product that had required a substantial amount of rework. All the figures apply to the product made on a single machine by a single operator. The sample size was 3. Two samples were taken per day. Comment on the process using X and R charts

Sample number	Observations		
	1	2	3
1	11	8	8
2	10	12	13
3	10	12	12
4	12	13	11
5	10	13	7
6	10	12	13
7	7	10	8
8	11	12	9
9	10	9	8
10	8	11	11

5 a) Explain the difference between job evaluation and merit rating.
b) What are the principles of human resource management?

6 a) Explain the applications of quality circles in management.
b) Briefly explain the concept of six sigma.

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7 State and explain the principles of supply chain management

8 Details of a project are shown in table

Activity	Normal		Crash	
	Time (days)	Cost in Rs.	Time(days)	Cost in Rs.
1-2	6	7000	3	14500
1-3	8	4000	5	8500
2-3	4	5000	1	9000
2-4	5	8000	3	15000
3-4	5	5000	3	11000

Indirect cost is Rs.2500 per day.

Determine optimal project duration and optimal cost of project.

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