Code No: RT32036

R13

SET - 1

III B. Tech II Semester Regular/Supplementary Examinations, April -2018

INDUSTRIAL ENGINEERING & MANAGEMENT

(Mechanical Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1 a) Define management state the important characteristics of management. [4M]
b) List out the important factors which determine the location of an industrial plant? [4M]
c) Define work study. What are the advantages of work study? [4M]
d) What is quality control? How is it different from inspection? [3M]
e) What are the functions of personnel management? [4M]
f) Define supply chain management? [3M]

PART -B

2 a) What are the qualities required for an industrial engineer? [6M]
b) Describe the principles of scientific management in brief. [10M]

3 a) What is process layout? Explain. [3M]
b) What is plant location? Discuss the need for plant location. What are the steps involved in selecting a location? [8M]
c) Explain in detail the various types of plant layouts? [5M]

4 a) What are flow process charts? Give their importance. [8M]
b) What do you understand by work measurement and elaborate the important techniques involved in work measurement? [8M]

5 a) Define quality and explain the factors that influence the quality of a product. [8M]
b) The following table gives the number of defects in a casting used for making crank case of diesel engine. [8M]

Casting No	1	2	3	4	5	6	7	8	9	10
Number of defects	15	11	25	10	12	20	15	10	17	13

Construct an appropriate control chart with the control limits and comment on the process.

6 a) Define HRM? Explain its elements and significance to organizational development. [8M]
b) What is personnel management? What are its features and functions? [8M]

7 a) Calculate EST, CST, EFT LFT total float and project duration for the following project. [8M]

Activity	1-2	1-3	1-4	2-3	2-6	3-5	3-6	4-5	5-6
Duration (days)	3	4	14	10	5	4	6	1	1

b) Discuss the functions and significance of Enterprise Resource Planning? [8M]

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Code No: RT32036 **R13** SET - 2

III B. Tech II Semester Regular/Supplementary Examinations, April -2018

INDUSTRIAL ENGINEERING & MANAGEMENT

(Mechanical Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1 a) List out any four functions of management? [4M]
b) Differentiate between product layout and process layout? [4M]
c) What is method study technique? Explain its significance. [4M]
d) Explain the significance of statistics in quality control? [4M]
e) Explain the job evaluation techniques? [3M]
f) Define and explain CPM? [3M]

PART -B

2 a) Differentiate between production management and industrial engineering? [6M]
b) Define scientific management. What are the criticisms to scientific management? Write the basic approaches to scientific management. [10M]

3 a) Enumerate the various factors to be considered in the design of plant layout? [8M]
b) Product layout is better than process layout. Do you agree with this statement? Justify. [8M]

4 a) Explain in detail about travel chart? [8M]
b) What is PMTS? What are the different types of PMTS? Discuss the procedure involved in PMTS. [8M]

5 a) In a manufacturing unit, a sample of 5 sheets is taken every one hour. The data collected from the measurement of thickness of these sheets is tabulated below: [10M]

Thickness in mm for 5 sheets

Sample number	I	II	III	IV	V
1	25	31	22	26	24
2	32	31	30	34	33
3	35	34	33	32	32
4	26	25	29	30	25
5	33	34	30	29	33
6	34	32	31	28	27

Draw the control chart for mean and range, and establish whether the process is under control?

b) Write about ISO and explain the benefits of ISO registration? [6M]

Code No: RT32036 **R13** SET - 2

6 a) Briefly explain various wage intensive schemes? [8M]

b) Define merit rating. Discuss the objectives, advantages and disadvantages of merit rating. [8M]

7 a) Explain the objectives of supply chain management? [6M]

b) Details of project are shown in table [10M]

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

In direct cost is Rs. 3000 per day. Determine optimal project duration and optimal cost of project.

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Code No: RT32036 **R13** SET - 3

III B. Tech II Semester Regular/Supplementary Examinations, April -2018

INDUSTRIAL ENGINEERING & MANAGEMENT

(Mechanical Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1 a) Differentiate between production management and industrial engineering? [4M]
b) What is breakdown maintenance? Explain. [4M]
c) Discuss in detail about therbligs [4M]
d) Write about quality circles. [4M]
e) Explain job analysis techniques? [3M]
f) Define and explain PERT? [3M]

PART -B

2 a) What is McGregor theory X and theory Y? Explain. [8M]
b) Briefly describe the principles of management given by Henry Fayol? [8M]

3 a) Define and explain fixed – position layout: write their advantages, disadvantages. [8M]
b) Discuss in detail various tools and techniques used for optimal design of layouts? [8M]

4 a) What is performance rating? Explain various methods of rating. [8M]
b) Explain about " SIMO " chart and state its applications. [8M]

5 a) Gopal industries want to set-up a control chart for the number of defective units for its toaster production line. 25 Random samples of 400 units each inspected and the number of defective units in each sample were noted as follows. Draw suitable control for the data. [8M]

Sample No.	Number of defectives:	Sample No.	Number of defectives:	Sample No.	Number of defectives:
1	17	13	16	25	17
2	26	14	19		
3	22	15	19		
4	24	16	8		
5	30	17	8		
6	35	18	23		
7	15	19	20		
8	19	20	18		
9	23	21	18		
10	18	22	13		
11	15	23	20		
12	21	24	14		

Code No: RT32036 **R13** SET - 3

b) What is the need for ISO 9000 standards? What are the various certifications under this umbrella of ISO 9000? Explain. [8M]

6 a) What is the importance of industrial relations for the success of an organization? Explain. [8M]

b) Define wage incentive plans. What are its objectives and drawbacks? [8M]

7 a) Write a short note on enterprise resource planning. [6M]

b) Compute earliest start and finish times, latest start and finish times and floats for the following project. [10M]

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

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Code No: RT32036 **R13** SET - 4

III B. Tech II Semester Regular/Supplementary Examinations, April -2018

INDUSTRIAL ENGINEERING & MANAGEMENT

(Mechanical Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Bring out the contrast between theory X and theory Y?	[4M]
	b)	Explain process layout?	[3M]
	c)	How do you estimate time by MTM method? Explain.	[4M]
	d)	What is quality control? How is it different from inspection?	[4M]
	e)	What are the elements of HRM?	[4M]
	f)	Explain project crashing?	[3M]

PART -B

2	a)	What are the functions of management?	[4M]
	b)	List out the applications of industrial Engineering?	[8M]
	c)	Briefly describe productivity measurement system?	[4M]
3	a)	What is process layout? What are the advantages and disadvantages of process layout?	[8M]
	b)	Explain different types of maintenance systems?	[8M]
4	a)	Discuss in detail about work factor system?	[6M]
	b)	Write in detail about the applications and objectives of operations management?	[10M]
5	a)	Define total quality management? Describe the various elements of TQM in brief.	[8M]
	b)	Define control chart and state the objectives of $\overline{X}$ and R charts	[8M]
6	a)	Describe the functions of human resource management?	[8M]
	b)	Differentiate personnel and industrial relations from HRM?	[8M]
7	a)	Define value analysis? State the objectives of value analysis.	[6M]
	b)	With the help of following data ,	[10M]

i) Draw the network
ii) Find project duration for the following project and
iii) Identify the critical path.

Activity	1-2	1-3	1-4	2-4	2-5	3-4	3-7	4-6	4-7	5-6	5-7
Time(months)	4	6	12	7	11	7	8	8	13	4	4

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