

II B. Tech II Semester Regular Examinations, April - 2018
INDUSTRIAL ENGINEERING AND MANAGEMENT
 (Com to ME, AE, AME, MIN)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **FOUR** Questions from **Part-B**
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PART -A

1. a) What is industrial engineering? (2M)
- b) Differentiate product and process layout. (3M)
- c) What are the objectives of method study. (2M)
- d) List out the steps involved in Inspection. (3M)
- e) What is Human Resource Management? (2M)
- f) Define ERP? (2M)

PART -B

2. a) What is meant by management? Explain Fayol's principles of management. (7M)
- b) What is productivity? Discuss the methods to improve productivity. (7M)
3. a) Explain briefly the types of plant layout. (7M)
- b) What is plant layout? Explain the principles and symptoms of a poor plant layout. (7M)
4. a) Explain in detail the advantages and procedure of work study (7M)
- b) Establish a relation between work study and productivity. (7M)
5. a) Elucidate the concept of Quality control. (7M)
- b) Explain various factors affecting TQM and its principles. (7M)
6. a) Describe the functions of Human Resource Management? (7M)
- b) Define job evaluation. Explain job evaluation process and its advantages. (7M)
7. a) Define network. Write the rules for drawing network diagram with examples. (7M)
- b) What are the difference between PERT and CPM? (7M)

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PART -A

1. a) Write the functions of Management? (3M)
- b) What are the advantages of product layout? (3M)
- c) Define method study and motion study (2M)
- d) What is Quality circle? (2M)
- e) Define personnel management. (2M)
- f) What is difference between Activity and Event? (2M)

PART -B

2. a) Explain the role of Industrial engineer in Manufacturing firms and service industries. (7M)
- b) Explain Taylor's scientific management in brief. (7M)
3. a) List various factors that affect plant location. Compare methods of site selection in rural and urban areas. (7M)
- b) What are the quantitative techniques that are used for optimal design of layouts? (7M)
4. a) What is therbligs? State the importance of micro motion study? (7M)
- b) Define method study and list its objectives. Explain charts and diagrams used for recording data. (7M)
5. a) What are the types of control charts? Explain them in detail (7M)
- b) Explain Six Sigma. (7M)
6. a) What are the different wage incentive plans? Explain with suitable examples. (7M)
- b) Elaborate the concept of industrial relation. (7M)
7. a) Describe different phases in value engineering. (7M)
- b) The following table provides project cost and time details. (7M)

Activity	Normal time(days)	Crash time(days)	Normal cost(Rs)	Crash cost
1-2	20	17	600	720
1-3	25	25	200	200
2-3	10	8	300	440
2-4	12	6	400	700
3-4	5	2	300	420
4-5	10	5	300	600

Draw the network diagram, find the floats, find the optimum duration and cost of the project.

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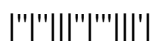
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PART -A

1. a) Define productivity. (2M)
- b) What is plant location? (3M)
- c) Write about Ergonomics. (2M)
- d) Define Quality control. (2M)
- e) What is merit rating? (2M)
- f) What are the three types of errors in drawing networks? (3M)

PART -B

2. a) Explain the differences between production management and industrial engineering? (7M)
- b) Explain the role of quantitative tools of IE and productivity measurement. (7M)
3. a) What do you mean by cellular manufacturing layout? What are the components involved in it? (7M)
- b) What are the methods used in the evaluation of Plant location? (7M)
4. a) Briefly discuss about PMTS and MTM. (7M)
- b) Write a detail note on work sampling? (7M)
5. a) What are the elements involved in statistical quality control. (7M)
- b) Define Total quality management. Explain the elements of TQM. (7M)
6. a) What do you understand by job evaluation? What are the principles of job evaluation? (7M)
- b) Discuss the essentials of successful job evaluation system (7M)
7. a) Write a short note: i) Earliest time ii) Latest time iii) critical path iv) floats (7M)
- b) What is supply chain management? What are the benefits of SCM? (7M)



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PART -A

1. a) Write about scientific management. (3M)
- b) What is plant layout? (2M)
- c) Objectives of Times study. (2M)
- d) Explain the zero defect concept. (3M)
- e) What are the objectives of HRM? (2M)
- f) What is cost slope? (2M)

PART -B

2. a) Explain the importance and functions of management? (7M)
- b) Explain the salient features of Douglas Mc-Gregor's Theory X and Theory Y. (7M)
3. a) Explicate the layout based on Group Technology (GT) and Fixed position layout. (7M)
- b) Elucidate preventive and breakdown maintenance in plant layout? (7M)
4. a) What are the steps involved in method study? (7M)
- b) Discuss the Principles of Ergonomics. (7M)
5. a) How the control procedure is adopted through the attributes? (7M)
- b) Write about the ISO certification? What is the procedure to register the ISO certification? (7M)
6. a) Explain the point rating method and factor comparison method of job evaluation. (7M)
- b) What are the advantages of having HRM practices in an organization? (7M)
7. a) Explain the overview and scope of ERP in business practices (7M)
- b) A project schedule has the following characteristics (7M)

Activity	Time(week)	Activity	Time(week)
1-2	4	5-6	4
1-3	1	5-7	8
2-4	1	6-8	1
3-4	1	7-8	2
3-5	6	8-10	5
4-9	5	9-10	7

- (i) Construct a network (ii) Compute earliest occurrence time (E) and least occurrence time (L) for each event (iii) Find the critical path.