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**B. E. (Eighth Semester) Examination,
April-May 2021**

(New Scheme)

(Mech., Automobile Engg. Branch)

INDUSTRIAL ENGINEERING & MANAGEMENT

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Each question has four parts. Part (a) is compulsory. Answer any two parts from (b), (c) and (d). Draw diagrams sketches where ever required.

Unit-I

1. (a) Define Industrial Engineering. 2
- (b) Explain the factors affecting location of a plant. 7

- (c) State the advantages and disadvantages of product layout and process layout. 7
- (d) Explain the principles of plant layout. 7

Unit-II

2. (a) Define Work Study. 2
- (b) Work sampling study was conducted in a machine shop. During 30 days study period 1000 observations were recorded. Idle observations were recorded as 200. Number of working hours per day are 8. Average rating observed as 110%. Personal and delay allowances are 8%. During study period 600 components were produced. Compute standard time per component. 7
- (c) Define Method study. Explain the steps in Method study. 7
- (d) Explain the principles of motion economy related to arrangement of the workplace. 7

Unit-III

3. (a) What is the main objective of job evaluation? 2
- (b) Explain the procedure for point rating system of job evaluation. What are the advantages? 7
- (c) What is the difference between Halsey plan and Rowan wage incentive plan? Calculate wage as per Rowan wage incentive plan with data: Standard time is 32 Hours, actual time taken is 26 hours, hourly Rate is Rs. 4. 7
- (d) What is the difference between Taylor's differential Piece-rate System in and Merrick Differential Piece-Rate System? Illustrate the Merrick Piece-Rate System with example. 7

Unit-IV

4. (a) What is the main difference authority and responsibility. 2
- (b) Explain the Herzberg's Two-Factor Theory of Motivation. 7

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- (c) Explain Maslow's Hierarchy of needs Theory of Managers. 7
- (d) Explain the operative functions of Human Resource Management. 7

Unit-V

5. (a) What is Capital budgeting? 2
- (b) In a plant, Fixed Expenses = Rs. 90,000 7

Variable Cost per unit: Direct Material = Rs. 5,
Direct Labour = Rs. 2, Direct Overheads = 100%
of Direct Labour, Selling Price per unit = Rs. 12.

Calculate:

- (i) P/V ratio.
- (ii) Break-even sales with the help of P/V ratio.
- (iii) Sales required to earn a profit of Rs. 4,50,000
- (c) What is a Distribution Channel? Explain the types of Distribution Channels. 7

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- (d) Explain the concept of break even analysis with graph. 7