

B. E. 6th Semester (Mechanical Engg.) Examination,

May-2013

INDUSTRIAL ENGINEERING

Paper-ME-312E

Time allowed : 3 hours]

[Maximum marks : 100

Note : Students are required to attempt any five questions.

1. (a) Define method study and motion study and bring out the relationship between them. What are the tools used for methods improvement ? 10

(b) A weaver wove 215.6 metres of cloth on his loom in 40 hrs of actual work. Determine his production efficiency with the following data available : 10

Job was time standard for 16 hrs continuously

The overall performance rating = 90%

Avoidable delay during study = 180 min

Fatigue allowance = 5% of total std.time

Operating conditions=standard

Unavoidable delays=5% of total std.time

Personal delay allowance =5% of total std.time

Production during time study = 65.0 metres.

2. (a) What do you mean by productivity ? How would you measure productivity ? Explain in detail.

- (b) What do you mean by job evaluation ? What are the four basic methods of job evaluation ? Discuss. 10

3. (a) The list price of a machine is Rs. 6000/- and the distributor is allowed 20% discount. The marketing and administrative expenditure is 50% of factory cost and the material cost, labour cost and factory overheads are in the ratio 1 : 3 : 2. If the cost of labour on the manufacture of the machine is Rs. 1200/- determine the profit on each machine. 10

- (b) What is cost estimating ? Describe various indirect expenses and explain the methods of allocating overhead expenses. 10

4. (a) Explain VED and ABC analysis used in inventory control. 10

- (b) A shopkeeper has a uniform demand of an item at the rate of 50 items per month. He buys from a supplier at a cost of Rs. 6 per item and the cost of ordering is Rs. 10 each time. If the stock holding costs are 20% of stock value, how frequently

should he replenish his stock ? Suppose the supplier offers a 5% discount on orders between 200 and 999 items and 10% discount on orders exceeding 1000, Can the shopkeeper reduce his cost by taking advantage of either of these discounts ? 10

5. (a) Explain OC curve in detail including AQL and LTFD. 10
- (b) Discuss Quality assurance process in detail. Also discuss its importance. 10
6. (a) What are the functions of production planning and control ? Explain the technique of scheduling and dispatching with the help of practical examples. 10
- (b) What is the importance of forecasting ? Explain the method of simple and weighted moving average methods. 10
7. (a) What is MIS ? Explain the types and importance of MIS systems. 10
- (b) Discuss the role of MIS in decision making. Also discuss system analysis and design. 10

8. (a) What do you understand by Product Development ? Discuss its need. Explain the factors which should be taken into account while developing a new product. 10
- (b) Discuss the concept of value engineering and value analysis in detail. 10