

# END TERM EXAMINATION

SIXTH SEMESTER [B.TECH.] MAY-2010

Paper Code: ETME302

Subject: Management of Manufacturing System

Time : 3 Hours

Maximum Marks :75

Note: Attempt any five questions including Q.1 which is compulsory.

- Q1 (a) Define productivity. What the various types of productivity. (3x5=15)  
(b) Enlist the various objectives of Plant Layout.  
(c) Differentiate between Cycle Graph and Chrono cycle graph.  
(d) Explain ABC analysis of inventory control.  
(e) Discuss the organization for Maintenance Department.
- Q2 (a) Explain why plant location decisions are important to the organization. Also discuss the advantages and disadvantages of urban, semiurban and rural locations. (7.5)  
(b) How the plant layouts are related to type of production? Explain product, process and group layout and discuss in which type of production each are used? (7.5)
- Q3 (a) Define method study. Explain the procedure for method study. Explain the construction and significance of- (7.5)  
(i) Flow process chart (ii) Two handed process chart  
(b) What is a multiple activity chart? Construct a multiple activity chart for following machining operations. (7.5)  
(i) Pick the job, place on a hydraulic vic (0.2min)  
(ii) Make the switch 'ON' to tightly hold part (0.08min)  
(iii) Make the switch 'ON' start automatic cycle (0.08min)  
(iv) Machining on auto cycle (1.5min)  
(v) Wait till vice opens automatically (0.08)  
(vi) Pickup machined job from vice (0.05)  
(vii)Keep it in tray (0.05)
- Q4 (a) What is inventory? Why does it is essential to keep inventories? Derive an expression for EOQ when the stock replishment is instantaneous giving the assumptions. (7.5)  
(b) ABC company buys a particular item at a cost of Rs.5 per unit. The company is offered following discount:- (7.5)  
Order quantity less than 500 units-Rs.5/- per unit  
500 to 1250 units-Rs. 4.80/- per unit, 1250 units or more-Rs.4.80/- per unit. The cost of placing an order is Rs. 36. Annual demand is 2800. Inventory carrying cost is 20% of avg. inventory investment. Give your decision regarding the quantity to be ordered.
- Q5 (a) Differentiate prediction and forecasting. What are the different methods of sales forecasting and discuss the merits and limitations of each method. (7.5)  
(b) What are the objectives of plant maintenance? Explain the costs associated with maintenance. Also, elaborate MAPI method of replacement policy. (7.5)
- Q6 (a) What are the basic assumptions made in BEP? How BEP can be lowered. A manufacturing firm incurs a fixed cost of Rs. 18,000. The variable costs accounts Rs. 8 per unit and selling price is Rs. 13. Find the no. of pieces to be produced at Break even. (7.5)  
(b) Define PPC. What are the various objectives and functions of PPC? Explain in detail.(7.5)
- Q7 Write short notes on **any five** of the following:- (3x5=15)  
(a) Line and Staff organization structure.  
(b) Scheduling in PPC  
(c) Breakdown, Corrective and Preventive Maintenance.  
(d) Scientific Management  
(e) Cost of Production, Cost centre and cost unit  
(f) PMTS  
(g) IMO charts and Therblings

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