CS/B.Tech/ME/PE/BT/TT/APM/Even/6th Sem/
ME-611/2014

2014

Production & Operations Management

Time Allotted : 3 Hours *Full Marks : 70*

The figure in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A

(Multiple Choice Type Questions)

1. Choose correct alternative for any *ten* questions 10x1=10
   i. Which among the following is not a tool for demand forecasting?
      a) Regression Analysis
      b) Exponential Smoothing Method
      c) Simplex Method
      d) Moving Average Method
   ii. Which among the following is not a phase in the product life cycle?
      a) Maintenance b) Growth c) Decline d) Maturity
   iii. In ABC classification of inventory items, A items are –
      a) 20% items, 20% money value
      b) 80% items, 20% money value
      c) 20% items, 80% money value
      d) None of the above
   iv. PDCA means –
      a) Plan Do Check Act
      b) Plan Development Check Arrange

   c) Plan Development Cost Array
   d) Plan Development Check Art
   v. PERT in project activity is –
      a) Programme Engineering Research Technique
      b) Programme Evaluation & Review Technique
      c) Programme Evaluate Review Technique
      d) Programme Evaluate Research Technique
   vi. CRAFT is abbreviation of –
      a) Computer Related Activity of Functional Technology
      b) Computerized Relative Allocation of Facilities Technique
      c) Computer Relative Allocation of Facilities Technique
      d) None of these
   vii. CORELAP means –
      a) Computerized Relationship Layout Planning
      b) Computer Requisite Layout Plan
      c) Computerized Relationship Layoff Planning
   viii. MPL is –
      a) Motivated Production Level
      b) Motivated Productivity Level
      c) Motion Product Level
      d) None of these
   ix. CPM means in Project management –
      a) Critically Path Measure b) Critical Path Method
      c) Crisis Production Model d) Cry Parameter Matrix
   x. CAD and CAM in production and operation management means –
      a) Computer Aided Design or Computer Aided Manufacturing
      b) Computer Aided Design and Computer Aided Manufacturing
      c) Computer And Design & Computer And Manufacturing
      d) None of the above
   xi. VED analysis in inventory means
      a) Vital Essential Desirable b) Vital Engineering Design
      c) Very Essential Design d) Virtual Essential Desirable
   xii. LOB is – i) Line of Balancing b) Linear of Balance
      c) Line of Balance d) None of these

Group-B
(Short answer type questions)
Answer any *three* of the following

3x5=15

2. Highlight the system view of production. Highlight different production activities.
3. Depict Productivity dynamics with a block diagram.
4. What are the benefits of ERP?
5. What are the aims of JIT?
6. What are the factors affecting Product Design & Development (PDD)

Group – C
(Long answer type questions)
Answer any *three* of the following

3x15=45

7. a) What does Economic Order Quantity (EOQ) mean? Deduce an expresson for EOQ in terms of unit procurement cost (Cp), carrying cost (Cc) and total annual demand (A).
   b) What is the necessity of Inventory Control?
   c) The annual demand of an item is 10,000. The ordering cost for producing the item is Rs. 25 per order. The carrying costs amount to $12^1/_2$% of average inventory. Unit cost is Rs. 2.0. Determine –
   i) EOQ ii) The number of orders per year
   iii) Carrying cost per year iv) Ordering cost per year
   v) The annual cost of acquiring and holding the inventory
   5+3+7
8. a) How Forecasting of information's are converted into production goals?
   b) What are the importances of Forecasting?
   c) Lakeside Hospital has used a 9 month moving average forecasting method to prepare a drug. The actual demand is shown on the table. Using the previous moving average data, construct to an exponential smoothing forecast of the month 33.

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Month	24	25	26	27	28	29	30	31	32
Damand	78	65	90	71	80	101	84	60	73

4+4+7

9. a) Distinguish between MRP closed-loop MRP, and MPR II.
   b) Explain Bill of Material (BOM) with suitable example.
   c) What is master Production Schedule (MPS)? 5+5+5=15
10. a) What is meant by scheduling?
   b) What are the factors that affect scheduling?
   c) Highlight relative merits and demerits of forward scheduling and backward scheduling. 5+5+5
11. a) Explain various quality control charts.
   b) A manufacturer purchases small bolts in cartons that usually contain several thousand bolts. Each shipment consists of a number of cartons. As a part of the acceptance procedure for these bolts, 400 bolts are selected at random from each carton and are subjected to visual inspection for certain defects. In a shipment of 10 cartons the respective percentages of defectives in the samples from each carton are 0, 0, 0.5, 0.75, 0, 2.0, 0.25, 0, 0.25 and 1.25. Does this shipment of bolts appear to exhibit statistical control with respect to the quality characteristics examined in this inspection?

10+5=15

12. a) The table below lists all the activities which together constitute a small engineering project. Calculate the total project duration. Also find out total float for each activity.

Activity	1-2	1-3	1-4	2-5	3-4	4-5	4-6	5-6	5-7	6-7	3-7
Activity Duration (days)	20	23	8	19	16	0	18	0	4	10	24

   b) Define the following terms?
      i. Optimistic time
      ii. Pessimistic time
      iii. Most likely time 10+5

____x-x-x____