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VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

B.E. (Mech. Engg.: CBCS) VI-Semester Advanced Supplementary Examinations, July-2019

Production and Operation Management

(Elective-I)

Time: **3** hours Max. Marks: **70**

*Note: Answer **ALL** questions in **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

1. Define operations management and mention its primary objective.
2. Explain salient features of method study.
3. Differentiate between qualitative and quantitative models of forecasting.
4. What are the possible reasons for forecast errors?
5. List various strategies pertaining to aggregate planning.
6. How to decide planned orders to be released?
7. Discuss briefly the role of inventory control techniques in manufacturing industries.
8. Explain the concept of ABC analysis.
9. Define the terms Network diagram and critical path.
10. What are the significant aspects of Fulkerson's rule?

Part-B (5 ×10 = 50 Marks)

11.a) What are the various types of production systems? Explain any two of them. [5]

b) Draw break even chart and explain its objectives and applications. [5]

12.a) "Accuracy in the forecasting values is very much essential for the success of an organization" – Elaborate your views with proper analysis and justification. [4]

b) The past actual demands of a product are as shown below [6]

Month	Oct	Nov	Dec	Jan	Feb	March
Demand	84	89	86	90	92	96

i) Calculate three months moving averages forecast for all the possible months.

ii) If the forecast for March is 94 units what will be the exponential smoothing forecast for the month of April by considering smoothing factor 0.2.

13.a) List out and explain various elements of cost. [5]

b) Define Master production scheduling and mention its prerequisites. [5]

14.a) Define inventory and explain various types of costs involved in deterministic inventory control analysis. [4]

b) Annual demand of a particular component is 3200 units. The unit cost is Rs. 6 and the inventory carrying cost is Rs. 1.50 per unit per year. If the ordering cost is Rs. 150 per order, Calculate optimum order quantity, number or orders per year and total optimal cost. [6]

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15.a) Define project and explain the procedure of project management. [4]

b) Draw network diagram. Find critical path and duration of the project for the following data: [6]

Activity	1-2	1-3	2-3	2-4	3-4	3-5	4-5
Duration (days)	4	5	3	7	5	6	4

16.a) What is work measurement? Explain its procedure. [5]

b) Differentiate between simple and weighted average forecasting techniques with examples. [5]

17. Answer any ***two*** of the following:

a) Materials Requirement Planning (MRP). [5]

b) Probabilistic inventory models. [5]

c) Crashing of network. [5]