337655(37)

B. E. (Sixth Semester) Examination, April-May 2020

(New Scheme)

(Mechanical Engg. Branch)

PRODUCTION MANAGEMENT

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) of each question is compulsory & carries 2 marks. Solve any two parts from (b), (c) and (d) & carries 7 marks each.*

Unit-I

1. (a) Discuss the objectives and scope of Production Management.

(b) Explain briefly the characteristic features of different types of Production System.

(c) Explain with neat graph, the various stages of product life cycle.

(d) A company plans to sell an article at a local market. The articles are purchased at ₹ 5 on the condition that all unsold articles shall be returned. The rent for the space is ₹ 2000. The articles will be sold at ₹ 9. Determine the number of articles which must be sold :

(i) To Break-even

(ii) to earn ₹ 400 as profit

(iii) If the company sells 750 articles.

Calculate margin of safety and profit.

Unit-II

2. (a) What are quantitative and qualitative sales forecasting?

(b) Discuss Delphi Method of forecasting. What are the merits and demerits of this techniques.

(c) Monthly sales of an item is given below. Calculate 3 months and 6 months moving average and plot the graph of demand vs. month :

Month	Demand
Jan.	199
Feb.	202
Mar.	199
Apr.	208
May	212
June	194
July	214
Aug.	220
Sept.	219
Oct.	234
Nov.	219
Dec.	233

(d) A survey revealed that the demand for coolers in town depending on the population is as follows :

Population of the town $(x) \times (10^6)$	5	7	8	11	14
No. of Coolers (y)	45	65	55	75	95

Fit a Linear regression of (Y) on (X) and estimate the demand for coolers for a town having population of 20×10^6.

Unit-III

3. (a) Write the objectives of production planning and control.

(b) What is aggregate planning? What are its various elements? Discuss the relationship between the various elements of aggregate planning with the help of a flow diagram.

(c) Discuss different types of Material Handling equipments which are commonly used in Industry.

(d) The processing times for six jobs A, B, C, D, E and F which all have to pass through process-I and then process-II are given below :

Job	Time for Process-I (in hrs.)	Time for Process-II (in hrs.)
A	1	2
B	6	4
C	5	6
D	5	4
E	3	2
F	6	7

Determine the sequence in which the job should be scheduled to processed to minimize the throughout times. Calculate the minimum total time in which all six jobs can be processed.

Unit-IV

4. (a) Define Procurement.

(b) Explain objectives and functions of material management.

(c) What do you mean by standardization? Write advantages and disadvantages of standardization.

(d) A manufacturer has to supply his customer 3600 units of his product per year. Shortages are not permitted. Inventory carrying amount ₹ 1·2 per unit annum. The set-up cost per run is ₹ 80. Find :

(i) Economic Order Quantity

(ii) Optimum number of order per annum

(iii) Average annual Inventory cost (Minimum)

(iv) Optimum period of supply per optimum order.

Unit-V

5. (a) Explain the difference between Inspection and Quality control.

(b) Explain the concept of Producer's risk and consumer's risk with the help of O.C. curve.

(c) Explain JIT manufacturing with a neat diagram.

(d) Draw C-chart for the following data :

Sample No.	1	2	3	4	5	6	7	8	9	10	11	12
No. of defects	5	3	6	4	2	7	8	4	5	6	3	7

Give your opinion and comments for the above.