337813 (37)

BE (8th Semester)

Examination, April-May 2022

Branch : Mechanical

PRODUCTION MANAGEMENT

Time Allowed : Three Hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : (i) In each question part (a) is compulsory.

Attempt any two parts from (b), (c) & (d).

(ii) Assume suitable data wherever required.

(iii) Use of normal distribution table is permitted.

P.T.O.

UNIT - I

Q. 1. (a) Define the term productivity. 2

(b) Discuss the various types of production system; also draw the analysis chart of production system. 7

(c) Explain product life cycle. What is the role of creativity & innovation in 'PLC' explain with the help of an example. 7

(d) A shoe manufacturing company have a fixed cost for T-20 world cup 2012 as Rs. 80,000. The estimated sales for the period are valued at Rs. 2,00,000. The variable cost / unit for single product made is Rs. 4. If each unit sells at Rs. 20 & the number of

units involved concides with the expected volume of output, construct the break even chart & calculate :   7

(i) Break even point

(ii) Determine the profit earned at a turnover of Rs. 1,60,000

(iii) Draw & calculate margin of safety

UNIT - II

Q. 2. (a) Define sales forecasting. Name various types of forecasting methods.   2

(b) Discuss the position & importance of forecast in an operating system.   7

(c) Monthly demand for a product over the past one year is given in Table - I below.

Use moving average with N=3, N=6 to produce forecast for one period ahead. Also plot the Demand V/s month data on graph paper.   7

(d) The demand history of AC-MILAN football team for practice footballs in given below :   7

Month	JAN	FEB	MAR	APR
Demand	1000	1200	900	1100
Weights	0.1	0.2	0.3	0.4

Determine following :

(i) Forecast for the month of 'MAY' using three period moving average without using weights.

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(ii) Forecast for 'May' using weighted moving average.

(iii) Forecast for the 'FEB' using smoothing factor $\alpha = 0.2$ if forecast for January was 1100.

(iv) "Forecast absolute error" for the month of 'FEB'.

UNIT - III

Q. 3. (a) Define material requirement planning.   2

(b) Name the functional steps involved in PPC, & briefly explain the following :   7

(i) Loading

(ii) Dispatching

(iii) Expediting

(c) Explain the various principles of material handling. 7

(d) Using Johnson's sequencing algorithm solve n-job two machine problem with reference to Table – II below :

Jobs	J_1	J_2	J_3	J_4	J_5
Machine - I (hrs.)	4	7	3	5	4
Machine - II (hrs.)	6	2	8	9	1

(i) Total time elapsed

(ii) Idle time for Machine-II

(iii) Optimal sequence 7

UNIT - IV

Q. 4. (a) What do you understand by a tender ? 2

(b) Discuss the various functions of stores-manager. Explain with a suitable example. 7

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(c) The annual demand for an item is 3200 parts. The unit cost is Rs. 6 & inventory carrying cost estimated as 25% per annum. If the cost of one order is Rs. 150. Find :

    (i) EOQ

    (ii) Number of orders / year

    (iii) Total cost   7

(d) Write short notes on following :   7

    (i) ABC analysis

    (ii) VED analysis

    (iii) FSN analysis

UNIT - V

Q. 5. (a) Define "quality".   2

    (b) Explain the concept of producer's risk and consumer's risk with the help of OC-curve.   7

(c) Discuss the various types of control charts used by quality control department. 7

(d) Discuss some of the important characteristics of 'JIT' purchasing strictly in the light of existing conditions in India. Discuss the preparatory steps if this can be implemented in an Indian organization. 7

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