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Total No. of Questions : 08

M.Tech.(ME) (Sem.–2)

OPERATIONS MANAGEMENT

Subject Code : MME-508

Paper ID : [E0428]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :
1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

Q1 (a) What are the challenges of global business facing by Indian industries? (10)

(b) Define correlation and explain Pearsonian and Rank correlation methods to find the coefficient of correlation. How will you check the significance of coefficient of correlation? (10)

Q2 (a) Explain various factors affect the product design and development. (10)

(b) Explain the process design in services. (10)

Q3 The demand for a product in last 10 years is given below. Forecast the demand for the 11^{th} year by 3-yearly moving average and regression methods. Compare the forecasts with the historical data from 5^{th} to 10^{th} year data to find MAD, Bias, MAPE and Standard deviation in both the cases. Which method of forecasting would you recommend? (20)

Year	1	2	3	4	5	6	7	8	9	10
Units	120	135	152	155	160	157	161	170	187	172

Q4 (a) How is the Master Production schedule prepared and what are factors affecting it? (10)

(b) Explain the functions of production planning and control. (10)

Q5 (a) What is maintenance management? Explain Total productive maintenance. (10)

(b) Discuss the advantages and limitations of the plant located in urban, sub-urban and rural areas. (10)

Q6 A new plant needs to be established to receive raw materials from 3 suppliers, P, Q and R and to supply finished products to three warehouses, U, V, and W. Sources of raw materials and the destination points may be considered as existing facilities. The coordinates of existing facilities and the amount of material movement between existing facilities and the new facility are shown as under : (20)

Existing facility (i)	Coordinates of i		Material movement to new facility (W_i)
	Xi	Yi	
P	400	300	600
Q	200	500	400
R	300	100	500
U	100	550	300
V	500	400	600
W	350	600	600

Find the optimal location and optimal cost of new facility.

Q7 (a) Distinguish between single and double sampling plans with OC curve. (10)

(b) Define Supply chain management and explain its objectives and drivers. (10)

Q8 Write the short notes on the following :

(i) MRP (6)

(ii) Aggregate Planning (7)

(iii) Stores management (7)