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Total Number of Pages: 2

B.TECH
PCME 4404

8th Semester Regular / Back Examination 2016-17
PRODUCTION AND OPERATION MANAGEMENT
BRANCH: EEE, ELECTRICAL
Time: 3 Hours
Max Marks: 70
Q.CODE: Z227

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: (2 x 10)

- What is forecasting by linear regression analysis? How is it different from trend analysis?
- What are the repercussions if location of a facility is not planned at all?
- What is service blueprinting?
- How is a U-shaped assembly line different from a regular assembly line? What are its advantages?
- What are the difference between Job Enlargement and Job Enrichment?
- Distinguish between flow shop scheduling and job shop scheduling.
- What are the charts and diagrams used in method study?
- What is the difference between prediction and forecasting?
- By means of a graph, explain the quantity cost relationship in inventory.
- What are various lot sizes used for MRP?

Q2 a) What is meant by assembly line balancing? Define cycle time and explain its various implications. (3)

b) The following table represents sales data for litres of milk sold by a milk booth. (7)

Month	1	2	3	4	5	6	7	8
Sale	96	106	92	114	108	98	99	115

- Use single exponential smoothing to forecast demand, with α of 0.20 and initial forecast of 100.
- Use trend adjusted exponential smoothing to forecast sales through period 9 for the following data. Use an α of 0.30, a β of 0.50, an initial base of 29 and a trend of 1.

- Q3 a) Why it is necessary to give allowances? (2)
 b) Oriflame Cosmetics is offering price discounts to its customers if they purchase their 100 ml packs of shampoo in the following quantity ranges: Rs.50/unit for 10-19 units, Rs. 45/unit for 20-29 units, and Rs. 40/unit for 30 and more units. The carrying cost of a pack of shampoo is estimated at 10% of the inventory value and the ordering cost is Rs. 50. A customer has an annual demand of 100 packs of shampoo. Suggest the most economical order size for this customer. (8)
- Q4 a) List and explain various pure strategies and mixed strategies. (4)
 b) Enumerate the various steps in production and operations management from the point of view of an entrepreneur. (4)
 c) What do you mean by REL chart? (2)
- Q5 Find the makespan for the following flow shop problems and also draw Gantt chart. (10)

Machine		M1	M2	M3	M4
Job	A	5	4	8	9
	B	4	8	3	6
	C	2	3	5	8
	D	4	5	4	3

- Q6 a) Discuss the places where Poka Yoke works well. (3)
 b) Udhampur Distilleries Ltd. Has four existing facilities – W, X, Y and Z. The details of these facilities are given in following table. The company wants to locate a new facility such that the total transportation cost is minimum. Advice the management of the company about the best possible location using the simple median model. Also, find the total transportation cost. (7)

Existing Facility	Coordinate location (x , y)	Cost of moving one unit by unit distance (Rs)	Annual load(units)
W	(20,30)	10	279
X	(70,10)	10	473
Y	(50,40)	10	350
Z	(10,80)	10	266

- Q7 a) Explain the steps in new product design. (5)
 b) What is selective control of inventory and explain various selective control techniques. (5)
- Q8 Write short notes on any TWO. (5 x 2)
- a) Master Production Scheduling
 b) CRAFT
 c) Lean Manufacturing
 d) Tools for Concurrent Engineering