

14/05/19

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B.E/B.Tech (FULL-TIME) DEGREE END SEMESTER EXAMINATIONS – APRIL / MAY 2019

Industrial Engineering

VI SEMESTER

(R2012)

IE 8602 PRODUCTION AND OPERATIONS MANAGEMENT

Time: Three hours

Max. Marks: 100

Answer ALL questions

PART – A (10 X 2 = 20 Marks)

1. What do you mean by Production System?
2. Mention the characteristics of Operational decisions
3. State the Determinants of Demand.
4. List any four Measures of forecast error
5. What is Master Production Schedule (MPS)?
6. What is MRP - II ?
7. Define Capacity planning
8. List the Tools used for capacity planning
9. Define Scheduling
10. Write short note on JIT manufacturing



Part-B (5 X 16 = 80 Marks)

11. State and explain about the Objectives of Operation Management and functions of Operations Manager.

12a. The number of Patients visited in a hospital in five months are given below:

<u>Month</u>	<u>Patients</u>
1	48
2	52
3	50
4	54
5	55

Use Trend adjusted exponential smoothing to forecast demand for the period 6 with $\alpha = 0.3, \beta = 0.4$ and an initial forecast of 56.

(OR)

12b. The manager of Hotel is interested in forecasting the number of potato skin appetizers sold each week. He believes that the number sold has a linear relationship to the price and wishes to use linear regression to forecast. Develop the simple regression model to assist the Manager.

Week	(Price)	(Appetizers)
1.	2.70	760
2.	3.50	510
3.	2.00	980
4.	4.20	250
5.	3.10	320
6.	4.05	480



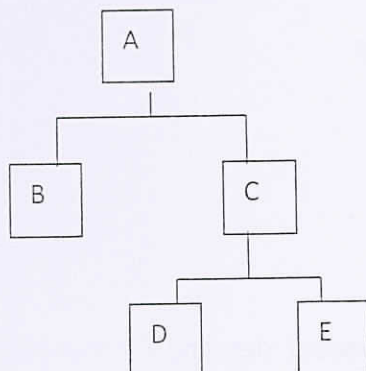
13a. ABC golf camp estimates the following workforce requirements for its services over the next year.

Quarter	1	2	3	4
Demand	4200	6400	3000	4800

Each certified instructor puts in 480 hours per quarter regular time and can work an additional 120 hours overtime. Regular-time wages and benefits cost the ABC Golf club Rs.7200 per employee per quarter for regular time worked up to 480 hours, with an overtime cost of Rs.20 per hour. Unused regular time for certified instructors is paid at Rs.15 per hour. There is no cost for unused overtime capacity. The cost of hiring, training, and certifying a new employee is Rs.10,000. Layoff costs are Rs.4000 per employee. Currently, eight employees work in this capacity. Use a chase strategy that varies the work-force level without using overtime or undertime. What is the total cost of this plan?

(OR)

13b. Given the following product structure, BOM and Inventory status, develop MRP tables for all items using Lot for Lot policy.



Bill of Materials

Item	No. Required	Initial stock	Lead Time
A	1	10	1
B	2	130	2
C	1	130	1
D	1	150	2
E	1	200	3

Master Production Schedule

Week	1	2	3	4	5	6
Scheduled Quantity	200	200	190	180	250	300

14a. State and explain about the factors affecting capacity.

(OR)

14b. Explain about the advantages and disadvantages of Business Process Outsourcing

15a. Describe about the characteristics of different types of Production

(OR)

15b. State and explain about the Functions of Production Activity Control Department

