

Registration no:

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Total Number of Pages: 2

B.TECH
PCME4404

8th Semester Regular / Back Examination 2015-16
PRODUCTION AND OPERATION MANAGEMENT

BRANCH: CIVIL, MECH, PLASTIC

Time: 3 Hours

Max Marks: 70

Q.CODE: W300

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 service blueprinting?
- In which ways is the simple exponential smoothing method better than the simple moving average method?
- Compare Level Output Rate plan and Chase plan production strategy.
- What are the inputs and outputs of MRP?
- What is Reserve Stock? List the factors that determine safety stock.
- What is Delphi Method?
- What do you mean by reverse engineering?
- Write the name of various Priority Dispatching Rules used in job-shop scheduling.
- Explain the concept of term Kaizen.
- What do you mean by De-coupling Inventory?

Q2 a) What is the simple median model? How is it used to find the best location of plant? **(4)**

b) Calculate the trend adjusted forecasts using the following data: **(6)**

| Quarter | 1 | 2 | 3 | 4 | 5 |
|---------|-----|-----|-----|-----|-----|
| Demand | 650 | 600 | 550 | 650 | 625 |

Further given initial estimate=600,initial trend=0, $\alpha=0.1$, $\beta=0.2$

Q3 a) Explain the concepts involved in new product design. **(5)**

b) Distinguish between Continuous Review System and Periodic Review System of inventory control. **(4)**

c) What is work sampling? **(1)**

Q4 a) What are the types of demand pattern in forecasting? Explain them with suitable sketches. **(5)**

b) Explain the basic principles of JIT manufacturing system. **(5)**

- Q5 a)** What do you mean by bill of material? Give examples. **(4)**
b) There are six jobs to be processed through three machines M1, M2 and M3. The processing time (in hours) required for each job is given below. **(6)**

| Machine | | M1 | M2 | M3 |
|---------|---|----|----|----|
| Job | A | 11 | 10 | 12 |
| | B | 13 | 8 | 20 |
| | C | 15 | 6 | 15 |
| | D | 12 | 7 | 19 |
| | E | 20 | 9 | 7 |

Determine the optimal sequence. Find total time elapsed to complete the jobs and idle time for each machine

- Q6 a)** Compare between job and cellular production systems. **(4)**
b) A company is setting an assembly line to produce 192 units per eight hour shifts. The information regarding work elements in terms of times and immediate predecessors are given. **(6)**

| Work Element | Time(Sec) | Immediate Predecessors |
|--------------|-----------|------------------------|
| A | 40 | None |
| B | 80 | A |
| C | 30 | D,E,F |
| D | 25 | B |
| E | 20 | B |
| F | 15 | B |
| G | 120 | A |
| H | 145 | G |
| I | 130 | H |
| J | 115 | C,I |

Find the minimum number of work stations, balance delay and line efficiency.

- Q7 a)** Explain the steps of time study. **(4)**
b) Microcosm Software Ltd sources 9000 blank CDs annually from a supplier. The ordering cost per order is Rs. 10 and each CD costs Rs. 20. The carrying cost is 10% of the CD price. The supplier offers the following discounts: **(6)**

| Quantity | Discount |
|---------------|----------|
| 100 – 449 | 2% |
| 450 – 899 | 4% |
| 900 and above | 5% |

Evaluate the various discount options and also the EOQ option, and advise the management of Microcosm about the best inventory policy for CDs.

- Q8** Write short notes on any TWO. **(5 x 2)**
a) TPM
b) CRAFT Algorithm
c) FMS
d) Poka Yoke