**Examination Nov/Dec 2019**

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**SUBJECT CODE NO:- H-452**
**FACULTY OF SCIENCE AND TECHNOLOGY**
**B.E. (Mechanical) (Sem-I)**
**Elective-I: Production Planning and Control**
**[OLD]**

[Time: Three Hours]                                                                                [Max.Marks:80]

Please check whether you have got the right question paper.

N.B
1) Solve any three questions from each section.
2) Use of non – programmable calculator is permitted.
3) Assume suitable data, if required, clearly stating the relevant assumptions made.

Section A

Q.1  a) Draw typical internal organization chart of PPC used in industry.                    07

b) Briefly explain the action and control phase in PPC.                                        07

Q.2  a) Write on benefits of Production Planning and Control in any industry.               05

b) Explain any 4 types of qualitative techniques used in sales forecasting.              08

Q.3  a) Briefly explain least square method and correlation in sales forecasting.          06

b) The following shows the year and demand of the particular company for 10 months.     07

| Month  | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct |
|--------|-----|-----|-------|-------|-----|------|------|-----|------|-----|
| Demand | 110 | 100 | 100   | 120   | 130 | 140  | 130  | 140 | 150  | 160 |

Determine the
a) Curves for 3 months and 5 months moving average
b) Find the trend for the November
c) Determine the Mean absolute deviation

Q.4  a) Describe the P system of selective control techniques with suitable graph.          06

b) The annual requirement of the raw material of a company is 50 tonnes. The cost of raw material is Rs 500 per ton. The ordering cost is Rs 100 per order and the carrying cost is 20% of unit cost per year.     07
Determine the
a) EOQ
b) Total Inventory cost
c) Increase in inventory cost if EOQ is 25 tonnes

Q.5    a) Following table shows the incomplete material requirement planning (MRP-1) of XYZ Company, final goods. Calculate the MRP and shows when planned order release to be made    06

Lead time = 5;            Order quantity = 250

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Requirements | | 0 | 40 | 0 | 100 | 0 | 0 | 90 | 0 |
| Scheduled receipts | | | | | | | | | |
| On hand | 160 | | | | | | | | |
| Planned order Release | | | | | | | | | |

   b) Explain in detail MRP I (Material Requirement Planning) and ERP (Enterprise Resource Planning)    07

## Section B

Q.6    a) A job production unit has 4 jobs A, B, C, D which can be manufactured on each of the 4 machines P, Q, R, S. the processing cost of each of each job for each machine is given in the table below.    08

| Jobs \ Machines | P | Q | R | S |
|---|---|---|---|---|
| A | 31 | 25 | 33 | 29 |
| B | 25 | 24 | 23 | 24 |
| C | 19 | 21 | 23 | 24 |
| D | 38 | 36 | 34 | 40 |

The achieve min processing cost, which job will you assigned on which machine?

   b) Define scheduling? Write on assignment and sequencing method of scheduling.    05

Q.7    a) Discuss five key principles used in Lean production.    05

   b) Explain the elements of JIT manufacturing.    08

Q.8    a) Define loading and differentiate between loading and routing.    06

   b) Write on activities of dispatcher and dispatching procedure.    07

Q.9    a) Write on Route sheets and Bill of materials.    08

   b) Write on how existing plant is transformed to lean production system.    05

Q.10    Write a short notes on **any two**    14
     a) Line balancing
     b) Expediting
     c) Chase planning
     d) Setup time reduction technique