BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BE **SEMESTER : VI**
BRANCH: PRODUCTION **SESSION : SP/18**

SUBJECT: PE6005 PRODUCTION PLANNING AND CONTROL

TIME: **FULL MARKS: 60**

INSTRUCTIONS:
1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a) Mention any four objectives of production management. [2]
Q.1(b) Explain the different types of production systems. [4]
Q.1(c) What is continuous production? What are its characteristics, advantages and limitations? [6]

Q.2(a) What are the steps in effective aggregate planning process? [2]
Q.2(b) Define forecast and explain the characteristics which are common to all forecasts. [4]
Q.2(c) An investigation into the demand for water pumps manufactured by Joy Engineering Pvt. Ltd. Resulted in the following historical data by linear regression: Project the trend of sales for next 3years. [6]

Year	1988	1989	1990	1991	1992	1993
No of water pumps sold	28	33	37	48	54	68

Q.3(a) Explain the techniques of routing. [2]
Q.3(b) Describe clearly the function of routing, scheduling and dispatching. [4]
Q.3(c) Find the sequence that minimizes the total elapsed time required to complete the following task on 2 machines. [6]

Job No	1	2	3	4	5	6	7	8	9
Machine A	2 hrs	5	4	9	6	4	7	5	4
Machine B	6 hrs	8	7	4	3	9	3	8	11

Q.4(a) Explain the problem of inventory control with deterministic demand. [2]
Q.4(b) Define the terms ‘safety stock’ and ‘EOQ’ with the help of ideal inventory model. [4]
Q.4(c) The requirements of a particular size of oil seal at an automobile firm is estimated at 40,000 no. next year. The oil seal is available locally with a lead time of 2 weeks and its cost rs. 10 each. The procurement cost is Rs. 50 per order. The holding cost is estimated at Rs. 2 per unit for storage plus 20% per unit per year on account of opportunity cost of the capital. (i) How many units should the firm order at a time to optimize the inventory costs. (ii) What is the annual inventory costs. [6]

Q.5(a) Explain the technique “Always better Control”. [2]
Q.5(b) What is SDE, FSN, and VED analysis and explain their importance in materials management? [4]
Q.5(c) The success of the business, besides other factors, depends to a large extent on the efficient storage & material control. Justify. [6]

Q.6(a) How to develop the process and product layout? [2]
Q.6(b) Discuss product type layout, where it is used. State its advantages and disadvantages. [4]
Q.6(c) What are the functions of stores? Discuss the scope of materials management. [6]

Q.7(a) What is preventive maintenance? [2]
Q.7(b) Explain the six sigma maintenance process. [4]
Q.7(c) What is condition-based maintenance approach? Briefly illustrate the various steps involved in a condition-based maintenance program. [6]

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