

Roll No.

Total No. of Pages : 02

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M.Tech. (PE) (E-II) (Sem.-2)

**MANAGEMENT OF PRODUCTION SYSTEMS**

Subject Code : PE-515

M.Code : 39014

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. (a) Discuss the information and systems approach for production systems. (10)  
(b) What do you understand by 'System'? Explain its functional elements. (10)
2. (a) Explain the motivational factors in system design. (10)  
(b) Explain the essential characteristics of a linear programming model. (10)
3. (a) Discuss the micro-analysis of complex and man-machine open systems. (10)  
(b) Discuss the need of systematic human relationships. (10)
4. (a) Discuss the types of complexities that may occur in production and distribution systems. (10)  
(b) Explain the assumptions and limitations of Queuing Model I; using single channel with Poisson arrivals and Exponential service, infinite model [(M/M/I): (FCFS/ $\infty$ / $\infty$ )]. (10)
5. (a) What do you mean by human integration? Explain. (10)  
(b) Explain the various types of inventory costs and their components with their mathematical expressions. (10)
6. (a) Discuss the effect of advance technology on the management of production systems. (10)  
(b) Explain the large scale integrating system. (10)

7. A firm manufactures two products A and B on which the profit earned per unit are Rs. 3 and Rs. 4 respectively. Each product is processed on two machines M1 and M2. Product A requires one minute of processing time on M1 and two minutes on M2, while B requires one minute on M1 and one minute on M2. Machine M1 is available for not more than 7 hours 30 minutes while Machine M2 is available for 10 hours during working day. Find the number of units of product A and B to be manufactured to get maximum profit by graphical method. (20)
8. Explain the following :
- (a) Monte Carlo simulation (7)
  - (b) ABC analysis of inventory control (7)
  - (c) Industrial Dynamics (6)

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**