853

M.Tech 2nd Semester Examination

Production Planning and Control

PE-209

Time : 3 Hours   **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary continuation sheet will be issued.

Note :   Attempt any five questions. Be precise in your answers. All Questions carry equal marks.

1. (a)   Define production and production system. Differentiate between "Job Order" production and "Batch Production".   **(10)**

    (b)   Define production planning. State its objectives and list the information required for production planning.   **(10)**

2. (a)   Tasks A, B, C,......., H, I constitute a project. The precedence of the relationship are A<D; A<E; B<F; D<F; C<G; C<H; F<I; G<I. Draw a network to represent the project and find the minimum time of completion of the project when time in days, of each task is as follows:

Task	A	B	C	D	E	F	G	H	I
Time	8	10	8	10	16	17	18	14	9

Also identify the critical path.   **(10)**

2. (b) Explain the Philosophy of Toyota Production System & its basic Framework? **(10)**

3. (a) Define Forecasting? What are the various types of Forecasting? Flow does it help in Planning? **(10)**

   (b) Discuss the contribution of Henry Ford and Taguchi to operations management. **(10)**

4. (a) Briefly discuss the evolution of production system. **(10)**

   (b) What are the principles of plant layout? State the various steps in planning the layout for a new enterprise **(10)**

5. (a) What are the types of inventories and objectives of inventory control? Explain various costs associated with inventory. **(10)**

5. (b) Explain Computer Aided Process Planning (CAPP)? Explain variant and Generative approaches **(10)**

6. (a) A price discount schedule for an item that we purchase is offered as follows: Rs. 1 per unit in quantities below 800, Rs. 0.95 per unit in quantities for 800 to 1599, and Rs 0.90 per unit in quantities of 1600 and more. The requiremenl is 1600 units per year; the purchase order cost is Rs. 50 per order. An inventory holding cost is 10% of average inventory value per year. Rs 0.10 per unit per year at the Rs. 1 per unit price. The value of EOQ is 400 units.

What should the purchase quantity be in order to take advantage of the price discount? **(10)**

   (b) Discuss the following elements of Manufacturing planning

      1. Order release

      2. Inventory costs

      3. Capacity planning

      4. Route sheets **(10)**

7. (a) Discuss the quantitative and qualitative factors affecting the plant location. **(10)**

   (b) Discuss ISO 14001 and ISO 9000 and explain the role of automation in JUST-IN-TIME. **(10)**

8. (a) Explain the plant configuration & discuss various automated production lines. **(10)**

   (b) Discuss the classification of facilities layout and explain any two principles of facilities layout. **(10)**