

**B.Tech. MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

June, 2014

**BIMEE-012 : PRODUCTION AND OPERATIONS
MANAGEMENT**

Time : 3 hours

Maximum Marks : 70

Note : (i) *Answer any five questions.*
(ii) *Use of scientific calculator is permitted.*

1. (a) What are the various types of production systems ? Explain them in detail. 7
(b) What are the operational strategies to be followed for competitive advantage ? Explain with example. 7
2. (a) What is product design ? What are the requirements of a good product design ? 7
(b) What are the factors governing plant location ? Explain briefly with suitable examples. 7
3. (a) What is performance rating ? What are the different rating techniques ? Explain any one of them briefly. 7
(b) What are the methods of time study ? Explain them briefly. 7

4. (a) What are the uses of scheduling ? Explain how will you prepare the master schedule ? 7
- (b) What are the guiding principles of Material Handling ? How a Material Handling device is selected ? 7
5. (a) What are the types of wage incentive plans for Direct Workers ? Explain about straight piece rate system. 7
- (b) Brief about "Toyota Production System" and its advantages over other production systems. 7
6. Construct an activity network for a production schedule with the following characteristics : 14

Activity (i-j)	Time in Hrs	Activity (i-j)	Time in Hrs
1-2	4	5-6	4
1-3	1	5-7	8
2-4	1	6-8	1
3-4	1	7-8	2
3-5	6	8-10	5
4-9	5	9-10	7

Calculate T_E , T_L and slack time for each activity and indicate critical path.

7. There are five Jobs to be assigned on each to 5 machines and the associated cost matrix is as follows : 14

		Machines				
		I	II	III	IV	V
Jobs	A	11	17	8	16	20
	B	9	7	12	6	15
	C	13	16	15	12	16
	D	21	24	17	28	26
	E	14	10	12	11	15

Find the optimum assignment and the associated cost using the Assignment Technique.
