

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

**Term-End Examination**

**June, 2016**

00116

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

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Attempt any *five* questions. All questions carry equal marks. Use of scientific calculator is permitted. Assume missing data suitably.

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1. (a) Define Production Management and Operations Management. Describe the production system with the help of a suitable example. 7
- (b) What are the steps involved in the development of a new product ? Discuss the factors affecting the 'Product Design'. 7
2. (a) What are the factors affecting plant location for any company ? Discuss how break-even analysis helps in plant location decision. Take suitable examples. 7
- (b) What are the benefits of a good plant layout ? Discuss the guiding principles in designing a layout of facilities in a plant. 7

3. There are five jobs to be assigned on each of the five machines. The associated cost matrix is given as follows :

		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.

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4. Construct an activity network for a production schedule with the following information :

Activity (i - j)	Time in Hours	Activity (i - j)	Time in Hours
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

Identify the critical path. Calculate the total completion time and determine the total float for each activity.

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5. (a) Distinguish between design capacity and system capacity. 7
- (b) Define and explain 'Quality'. Discuss the role of a Quality Manager in a manufacturing company. 7
6. (a) What is MRP and MRP-II ? Explain in detail with their limitations. 7
- (b) Discuss the objectives of work study. Describe how standard time for an activity is determined. 7
7. A car paint shop has eight jobs on hand with estimated processing times and due dates as given below :

Job	A	B	C	D	E	F	G	H
Processing Time (Days)	5	8	6	3	10	14	7	3
Due date (Days)	15	10	15	25	20	40	45	50

Schedule the Jobs using FCFS, LCFS, SPT and STR rules. Compare the results. 14