

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

**00893 Term-End Examination**

**June, 2018**

**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 calculator is permitted.*

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1. (a) What do you understand by production and productivity ? Explain with suitable examples. 7
- (b) Enumerate the objectives of production and operations management. 7
2. (a) Explain the steps involved in new product design with the help of a flow diagram. 7
- (b) What are the factors affecting plant location for any company ? Discuss how breakeven analysis helps in the plant location decision. 7

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

	I	II	III	IV	V
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. A small project is composed of the following activities where time estimates are given below :

Activity	Optimistic time (weeks)	Most likely time (weeks)	Pessimistic time (weeks)
1 - 2	1	1	7
1 - 3	1	4	7
1 - 4	2	2	8
2 - 5	1	1	1
3 - 5	2	5	14
4 - 6	2	5	8
5 - 6	3	6	15

Draw the network and determine :

- (a) The expected duration and variance for each activity.
  - (b) The critical path and project completion time 14
5. (a) Explain the principal techniques of work measurement and their applications. 7
- (b) How does MRP differ from Inventory control system and MRP-II ? Explain. 7
6. (a) Define and explain 'Quality'. How do you perceive the role of a quality control manager in an organization ? 7
- (b) Discuss the various factors influencing capacity planning. 7
7. (a) Explain the techniques that are used for Statistical Quality Control (SQC). 7
- (b) Describe the concept of world class manufacturing, with the help of a suitable example. 7

8. Write short notes on any **four** of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Operation Strategy
  - (b) Master Production Scheduling
  - (c) Layout Planning
  - (d) Project Management
  - (e) Computer Aided Process Planning
  - (f) Conversion Process in Change
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