

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

Term-End Examination

December, 2015

BME-013 : PRODUCTION MANAGEMENT

Time : 3 hours

Maximum Marks : 70

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

1. Define and explain the various types of plant layout with suitable sketches. Give their advantages and limitations. Also write their suitability of application.

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2. Distinguish between CPM and PERT. Consider the following problem involving activities from A to J :

Activity	Immediate predecessor(s)	Duration (months)
A	-	1
B	A	4
C	A	2
D	A	2
E	D	3
F	D	3
G	E	2
H	F, G	1
I	C, H	3
J	B	2

- (a) Construct the CPM network.
 (b) Determine the critical path and duration.
 (c) Compute total floats and free floats for non-critical activities.

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3. Describe the objectives of supply chain. Explain the performance attributes of a supply chain. Explain the three critical components (Supply, Demand and Logistics) of Supply Chain Management.

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4. Distinguish between method study and time study. Briefly discuss the steps in method study. Explain the different charts and diagrams which are used in method study. 14
5. Distinguish between single machine scheduling and flow shop scheduling. Consider the following two machines and six jobs flow, shop scheduling problem. Using Johnson's algorithm, obtain the optimal sequence which will minimize the make span. 14

Job i	Machine Number	
	1 (time units)	2 (time units)
1	5	4
2	2	3
3	13	14
4	10	1
5	8	9
6	12	11

6. Explain the significance of ABC analysis. How is it helpful in inventory control? A purchase manager places an order each time for a lot of 500 units of a particular item. From the available data the following results are obtained :

Inventory carrying costs = 40% of unit cost

Ordering cost per order = ₹ 600

Cost per unit = ₹ 50

Annual demand = 1000

Find out the loss to the organization due to his ordering policy. 14

7. Write short notes on any *two* of the following : 14

- (a) Capacity Planning
 - (b) Material Requirement Planning
 - (c) Break Even Analysis
 - (d) Theory of Constraints
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