No. of Printed Pages : 3

BIMEE-012

B.Tech. MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination December, 2012

01041

BIMEE-012 : PRODUCTION AND OPERATIONS MANAGEMENT

Time : 3 hours *Maximum Marks : 70*

Note: *Attempt **any five** questions. Use of scientific calculator is permitted.*

---

1. (a) Define Production Management. Discuss functions of production manager of a modern factory. **7+7**

(b) Differentiate between job production, batch production and continuous production.

2. (a) Discuss the difference between the Time Rate and Piece Rate. Also discuss their relative advantages and limitations. **7+7**

(b) What do you understand by merit rating ? Explain its advantages and limitations.

3. (a) Why do we consider the facility location problem as a strategic decision ? List major factors that help in the decision making of facility location problems. **7+7**

(b) Explain the advantages, limitations and suitability of following layouts :

(i) Product layout (ii) Cellular layout

4. (a) What is the purpose of work measurement ? Explain its applications. 7+7

(b) Explain the MRP. Discuss different inputs and outputs of MRP.

5. (a) What is meant by product design ? What are the requirements of a good design ? 7+7

(b) What do you understand by capacity planning ? Distinguish between design capacity and system capacity.

6. Consider the following problem involving activities from A to J. 14

Activities	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.

(c) Compute total floats and free floats for non-critical activities.

7. A book binder has one printing press and the binding machine for preparing a number of books. The time required to perform printing and binding operations for each book are shown below. Determine the order in which books should be processed, in order to minimize the total time required to turn out all the books. **14**

Book	1	2	3	4	5	6
Printing time (hr)	30	120	50	20	90	110
Binding time (hr)	80	100	90	60	30	10

Also compute minimum elapsed time, idle time for binding machine and idle time for printing machine.