

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

Term-End Examination

June, 2017

00405

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

Time : 3 hours

Maximum Marks : 70

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

1. (a) Define production and operations management. Discuss different types of production systems with suitable examples.
- (b) Describe the steps involved in the development of a new product. 7+7
2. (a) What do you understand by merit rating? Discuss its advantages and limitations.
- (b) Differentiate between the Time Rate and Piece Rate for wage payment. Discuss their relative advantages and disadvantages. 7+7

3. Consider the following project management problem :

Table 1

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 network diagram.
(b) Determine the critical path.
(c) Compute all floats. 6+4+4
4. (a) Discuss the factors governing the location selection for a textile company.
(b) What is performance rating ? What are the different performance rating techniques ? Explain any one of them briefly. 7+7

5. A book binder has one printing press and one binding machine for preparing a number of books. The time required to perform printing and binding operations for each book are shown below in Table 2 :

Table 2
Machines

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

Determine the order in which the books should be processed, in order to minimize the total time required to turn out all the books. Also compute the minimum elapsed time, idle time for the binding machine and idle time for the printing press.

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6. (a) Explain the various strategies associated with aggregate planning.
- (b) Define and explain 'Quality'. Discuss the role of a quality control manager in a two-wheeler company.

7+7

7. (a) Compare and contrast product layout and process layout with a neat sketch.

(b) Discuss how MRP differs from inventory control system and MRP-II.

7+7