B.Tech. MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination

December, 2013

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)   What do you understand by Production   7
          and Productivity ? Explain with suitable
          examples.

    (b)   Explain about the "Production System" and   7
          how do you analyse production system.

2. (a)   Explain the factors affecting the "Product   7
          design."

    (b)   Explain the principles of plant layout and   7
          also mention the methods that may be used
          in plant and factory layout.

3. (a)   What is scheduling ?   Explain about   7
          scheduling procedure and techniques.

    (b)   What are the various functions of   7
          production planning ? Explain briefly.

4. (a)   What are the work measurement   7
          techniques ? Explain about Predetermined
          Time Standards.

    (b)   What is MRP and MRP - II ? Explain in   7
          detail with suitable examples.

5. (a) What is Quality ? What are the techniques   7
       to control the Quality of Production ?
       Explain any one of them.
   (b) How a Job is designed ? Explain with an   7
       exmaple.

6. The following list of activities relates to a new   14
   factory construction. The logical sequence and
   duration of each activity are given below. Draw
   the :
   (a) PERT Network and
   (b) identify the critical path by calculating the
       T_E and T_L (i.e. Earliest explected time and
       latest allowable occurance time).

Activity Code	Preceding Activities	Time Estimates t_o-t_m-t_p (in days)
A	____	6-8-14
B	____	6-9-12
C	____	12-15-18
D	A	2-3-4
E	B	5-6-7
F	D, E	11-13-15
G	D, E	1-2-3
H	C, G	4-5-6
I	G	4-5-6
J	G	2-3-4
K	C, J	7-10-13
L	I	4-5-6
M	F, K	7-8-9
N	H, L, M	8-14-20

7. Find the sequence for the following data so as to **14** minimise the idle time in hours.

JOBS

Machines :		A	B	C	D
	I	5	6	8	4
	II	4	7	9	10

(a) What is Total elapsed time and idle time ?
(b) What will be the earliest delivery time that 'B' can be promised ?

———