

**AF-139**

April-2015

**4<sup>th</sup> Year MBA (Integrated)****Production and Operations Management**

Time : 3 Hours]

[Max. Marks : 100

1. (a) Mercedes-Benz is one the leading company in automobile industry. Mention process strategies that can be followed in auto industry. **7**
- (b) Explain production system in detail. **7**
- (c) Machine X and Y can manufacture a product with following information : **6**

Description	Machine -X	Machine -Y
Investment	100000	160000
Interest on capital	10%	10%
Hourly charges	₹ 20	₹ 16
No of pieces produced per hour.	10	16
Annual operating hours	4000	4000

Calculate:

- (1) Which machine will have lower cost per unit ?
- (2) If only 8000 pieces are to be produced a year, which machine is better ?
2. (a) What are the various types of charts used in the method study ? **10**

**OR**

Define the term Plant Layout. Bring out comparison between Product Layout and Process Layout. Also explain merits and demerits of each.

- (b) Potential locations A, B and C have the cost structures shown for producing a product expected to sell at ₹ 50 per unit. Find the most economical location for an expected volume of 1000 units/year. Also determine the range of annual volume of production for each of the locations A, B and C through Analytical Method. Further information given below : **10**

Location	Fixed Cost / Year (₹)	Variable Cost / Unit (₹)
A	12500	25
B	25000	12.5
C	40000	7.5

3. (a) Distinguish between MRP 1 and MRP 2. Also write down definitions of terms used in MRP system. **10**
- (b) Explain various elements of production planning control in detail with relevant examples. **10**

4. (a) Explain types of maintenance. How these types can be utilized in production process ? **10**

**OR**

Explain Total Productive Maintenance.

- (b) A leading plastic bag manufacturer is having a good market in India. Help the company to identify the factors that affect while planning for material requirements. **10**
5. (a) Bring out similarities and dissimilarities between domestic operations management and international operations management. Explain the strategic issues involved in international operations management with relevant examples. **10**

(b)

Activity	Immediate Preceding Activity	Optimistic Time	Most Likely Time	Pessimistic Time
A	==	4	7	13
B	A	6	9	11
C	A	5	7	9
D	B	3	5	7
E	C	7	8	10
F	D	2	3	5
G	E	6	7	8
H	F, G	2	3	4

- (1) Draw the network diagram. **10**
- (2) Compute the expected time for each activity.
- (3) Find the Critical Path.
- (4) Compute the standard deviation of the critical path.