M.B.A. (Semester—II) Examination
PRODUCTION AND OPERATIONS MANAGEMENT
Paper—MBA/206

Time : Three Hours] [Maximum Marks : 70

N.B. :— (1) All questions are compulsory.

(2) Figures to the right indicate marks.

(3) Use of scientific calculator is permitted.

SECTION—A

1. (a) What is Plant Layout ? Discuss planning and analysis methods for Plant Layout. 14

OR

(b) What is production and operations management ? Explain in brief scope of production and operations management. 14

SECTION—B

2. (a) What is production planning and control ? Elaborate. 7

(b) There are seven jobs to be processed on two machines M_1 and M_2 in order M_1 M_2. Find optional sequence and minimum elapsed time and also find the idle time on machine M_2.

Job →		A	B	C	D	E	F	G
Machine	M_1	6	24	30	12	20	22	18
(Time in hours)	M_2	16	20	20	13	24	2	6

7

OR

(c) Discuss various types of Industrial Hazards. 7

(d) James Bearing is committed to supply 24000 bearings per annum to M/S Duro Fans on a steady daily basis. It is estimated that it costs 10 paise as inventory holding cost per bearing per month and that the setup cost per run of bearing manufacture is Rs. 324.

(i) What is optimum run size for bearing manufacturer ?

(ii) What should be the interval between the consecutive optimum runs ?

(iii) Find out the minimum inventory holding cost. 7

3. (a) Explain the concept of Total Quality Management. 7

(b) A production manager at a light bulb plant has inspected the number of defective light bulbs in 10 random samples with 30 observations each, as follows :

Sample	Number Defectives	Number of observations in sample
1	1	30
2	3	30
3	3	30
4	1	30
5	0	30
6	5	30
7	1	30
8	1	30
9	1	30
10	1	30
Total	17	300

(i) Find out Center Line of the chart.

(ii) UCL

(iii) LCL. 7

OR

(c) Explain the concept of Capacity Planning. 7

(d) In a factory producing spark plugs the number of defectives found in inspection of 20 lots of 100 each, is given below :

Lot No.	No. of defectives	Lot No.	No. of defectives	Lot No.	No. of defectives
1	5	8	3	15	3
2	10	9	3	16	4
3	12	10	5	17	5
4	8	11	4	18	8
5	6	12	7	19	6
6	4	13	8	20	10
7	6	14	2	–	–

Construct appropriate control chart and state whether the process is under control. 7

SECTION—C

4. (a) Explain various models of inventory. 7

(b) State various objectives of store management. 7

OR

(c) Describe various equipments of handling material. 7

(d) Elaborate the objectives of purchase management. 7

SECTION—D

5. The following data is available for a machine in manufacturing unit.

Number of hours worked per day	8
Working days per month	25
Number of operators	1

Standard time per unit of production

Machine Time	22 min
Operator Time	08 min
Total Time/Unit	30 min

(i) If a plant is operated at 75 % efficiency and the operator is working at 100 % efficiency, what is the output per month ? 5

(ii) If the machine productivity is increased by 10 % over the existing level, what will be the output per month ? 5

(iii) If the operator efficiency is reduced by 20 % over the existing level, what will be the output per month, if the plant is operated at 75 % efficiency ? 4