

**DEPARTMENT OF MANAGEMENT
SCHOOL OF MANAGEMENT & BUSINESS STUDIES
JAMIA HAMDARD**

**Examination – MBA IIIrd Semester
Maintenance Management
(Paper Code: MBA-GE-OT 03)
Role No. _____**

Time : 3 Hours

Max. Marks:- 75

Attempt any five questions (5 x 15= 75)

1. Explain maintenance management with its various types?
2. Elaborate Fault-tree analysis? State fault-tree calculation with the help of an illustration.
3. Explain Aggregate production planning? Enumerate the important factors affecting the quality in the production process?
4. A production house has following figures:

Regular Production cost per unit = Rs 2
Inventory Carrying Cost = Rs. 0.50 Unit/quarter
Production per employee = 1,000 Unit/quarter
Beginning work Force = 100 Workers

Quarter	Sales Forecast
1 st	80,000
2 nd	50,000
3 rd	120,000
4 th	150,000
Hiring Cost = Rs 100 per worker	
Firing Cost = Rs 500 per worker	

Which strategy is beneficial for the production house?

5. What is replacement decision? The following failure (mortality) rates have been observed for a certain type of transistors in a digital computer.

End of Week	1	2	3	4	5	6	7	8
Probabilities of Failure to date	0.05	0.13	0.25	0.43	0.68	0.88	0.96	1

Total transistors in one computer are 1000. The cost of replacing an individual failed transistor is Rs. 1.25 while group replacement will cost Rs 0.30. Which policy needs to implement for replacement decision?

6. A group of 25 identical machines is maintained for 5 months, and without Preventive Maintenance the number of break down in each month is as follow:

Months of Operation before Break down	1	2	3	4	5
No. of break down	3	4	3	5	10
Probability of break down	0.12	0.16	0.12	0.20	0.40

This indicates that the longest time a machine runs before breaking down is 5 months, and that for example 4 machines run 2 months before they broke down. The cost of

repairing a machine after breakdown is Rs 500. whereas the cost of preventive maintenance on a machine is Rs 100. What should you do as a maintenance manager and why?

7. A medium volume manufacturing facility with a capacity of producing 2 parts/minute actually produced 800 parts in a planned running 2 shifts of 8 hours each. It had breaks and scheduled maintenance for 40 minutes and also faced 40 minutes breakdowns and 1 hour 20 minutes for changeover and adjustment. Number of rejects and re-works were 10 and 6 parts respectively. Calculate its overall effectiveness.
8. Write short notes on any three;
 - a) MTBF and MTTR
 - b) Spare parts Management
 - c) Bath-tub Curve
 - d) Types of Scheduling
 - e) Optimum preventive maintenance