

**M. TECH. IN PRINTING ENGINEERING AND GRAPHIC COMMUNICATION
FIRST YEAR 2ND SEMESTER EXAMINATION 2018
TOTAL PRODUCTIVE MAINTENANCE IN PRINTING**

Time: 03 hrs

Full Marks: 100

Answer any five

1. a) Explain different types of maintenance techniques.
b) What is maintainability? How it is related with 'Mean time to repair (MTTR)'?

12+8=20
2. a) Define 'Availability'. Distinguish between Inherent Availability, Achieved Availability and Operational Availability.
b) Explain Downtime. What are the types of downtime?

10+10=20
3. a) What is Risk Based Maintenance (RBM) methodology? How can you assess the risk by using RBM strategy?
b) Define Total Productive Maintenance (TPM). What are its main objectives?

10+10=20
4. What are the interactively linked modules involved with the RBM methodology? Explain the modules which consist of different steps involved to reduce the risk through maintenance planning.

20
5. a) "TPM is aimed for eliminating the six big losses" What are the six big losses? Explain.
b) Define Overall Equipment Effectiveness (OEE). Define and explain the factors associated with OEE. How these factors are related with OEE.

8+12=20
6. Explain the steps involved for the implementation of TPM development program in an organization. Also mention the fundamental activities of TPM.

20
7. a) Explain the practical components of TPM to be achieved through maintenance (TPM) team.

b) A printing plant was expected to run for 120 hours/week continuously with production capacity of 2400 impressions/hour. At the end of the week it produced 2,20,000 impressions together with a waste of 3000 impressions. It had 120 minutes for breakdowns and 460 minutes for changeover and adjustment. Calculate the plant overall effectiveness.

10+10=20