Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 08

M.Tech. (Mechanical Engineering) (Sem.–3)

MAINTENANCE AND RELIABILITY ENGINEERING

Subject Code : MTME-211

M.Code : 74987

Date of Examination : 23-12-22

Time : 3 Hrs. **Max. Marks : 100**

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT question.**
2. **Each question carry TWENTY marks.**

1. a) What is the objective of Maintenance Engineering? (10)

   b) How do you classify various types of Maintenance? (10)

2. a) How do you differentiate between Preventive and Proactive Maintenance? (10)

   b) What are the functions covered in Maintenance planning? (10)

3. a) What is objective of Reliability centred maintenance? How is it implemented? (10)

   b) Why do you need to operate/prepare equipment history? How does it help in failure analysis? (10)

4. a) What are the various Hazard factors in safe plant operation? (10)

   b) How the hazard can be minimized by effective Housekeeping? Explain. (10)

5. a) What are the different Reliability Structure and design configurations? (10)

   b) What is the objective of Root Cause Analysis? How it is implemented? (10)

6. Develop a fault Tree Analysis diagram for four:

   a) Wheeler Hydraulic Brake not operating. (10)

   b) What is a constant failure rate model? Which distribution uses this parameter? What is the applicability of such distributions? (10)

7. a) What is a bath tub curve? Distinguish the various phases in them. (10)

   b) How is conditional Reliability different from instant Reliability? Give its advantage for equipment useful size. (10)

8. Write short notes on the following : (20)

   a) Design for Maintainability

   b) FMECA Method Application.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.