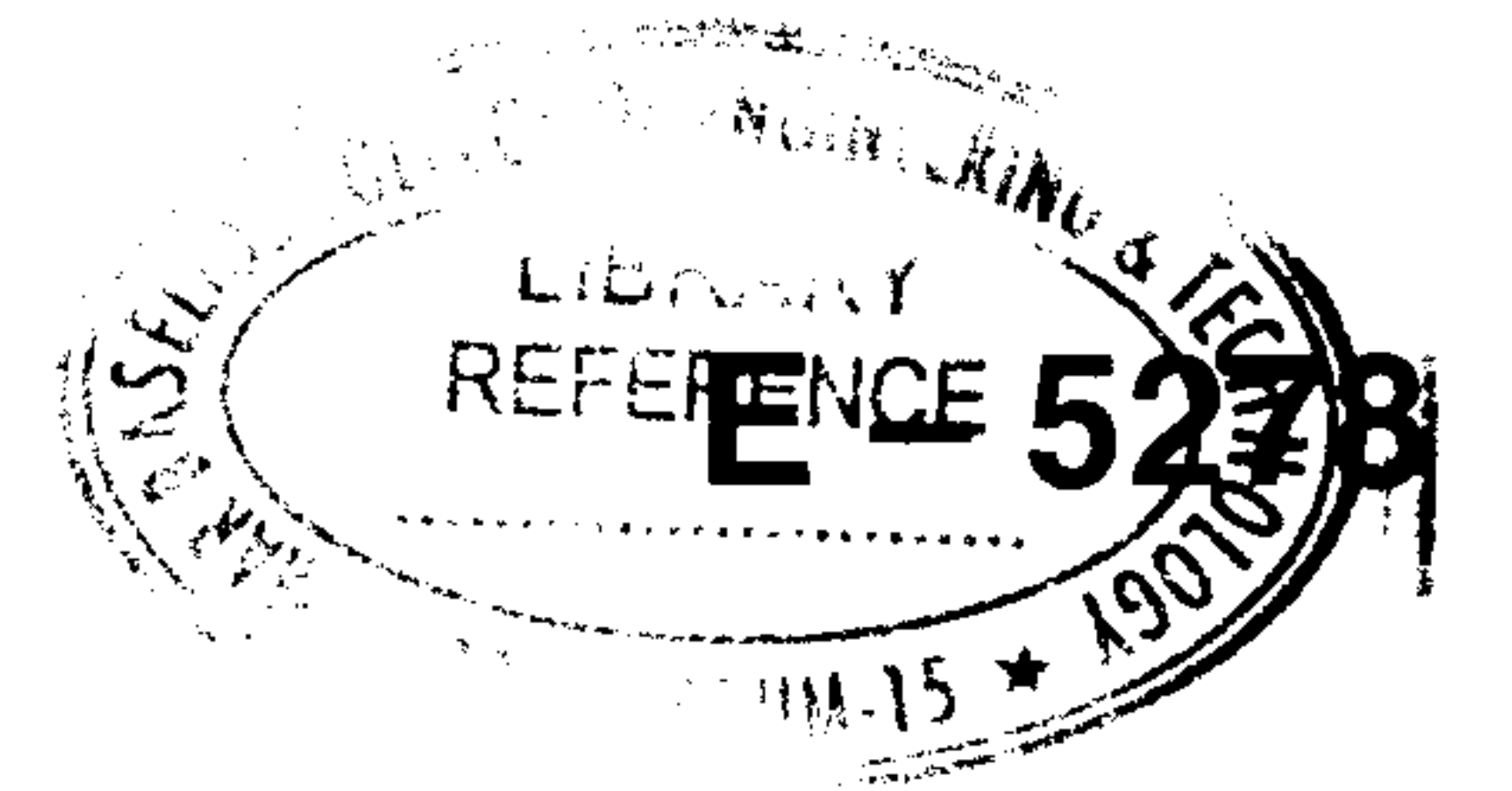




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Reg. No. : .....

Name : .....

**Seventh Semester B.Tech. Degree Examination, October 2018  
(2013 Scheme)**

**13.706.1 : PLANT ENGINEERING AND MAINTENANCE (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer all questions from Part – A :

1. List down the environmental factors affecting wear.
2. What are causes of lubrication failure ?
3. What is meant by fretting corrosion ?
4. Explain the significance of reliability to plant engineer.
5. Distinguish between MTTF and MTTR.
6. What do you mean by maintainability ?
7. State the merits of good preventive maintenance.
8. What are the objectives of safety organisation ?
9. Write a brief note on RCM.
10. What are the tangible factors related with replacement ? **(10×2=20 Marks)**

**PART – B  
Module – I**

11. a) Give an account on various methods adopted for preventing wear in industries. **12**
- b) 'Wear is all important for mechanical items.' Explain. **8**
12. a) Discuss the classification of lubricants mentioning the typical applications of each. **14**
- b) What are the factors to be considered for selecting a lubricants ? **6**

**P.T.O.**

**Module – II**

13. a) Discuss the important characteristics of 'Bath Tub Curve'. **8**  
b) What is redundancy ? How it improves the reliability ? Differentiate between standby, redundancy and parallel redundancy. **12**
14. Prepare short notes on following : **(4×5=20 Marks)**  
i) MDT  
ii) Weibull distribution  
iii) Probability of failure  
iv) Failure density.

**Module – III**

15. Explain the following different methods of equipment replacement analysis : **20**  
i) Total life average method  
ii) Rate of return method.
16. Discuss different types of maintenance systems. Give few illustrative examples for each system. **20**

**Module – IV**

17. a) Draw the sketch of portable fire extinguisher and explain its working. **10**  
b) Describe the procedure for investigation of an industrial accident. **10**
18. Write short notes on following : **(4×5=20 Marks)**  
i) DMS  
ii) Eye protection  
iii) Effect of noise on human beings  
iv) Safety colour codes.

**(4×20=80 Marks)**  

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