

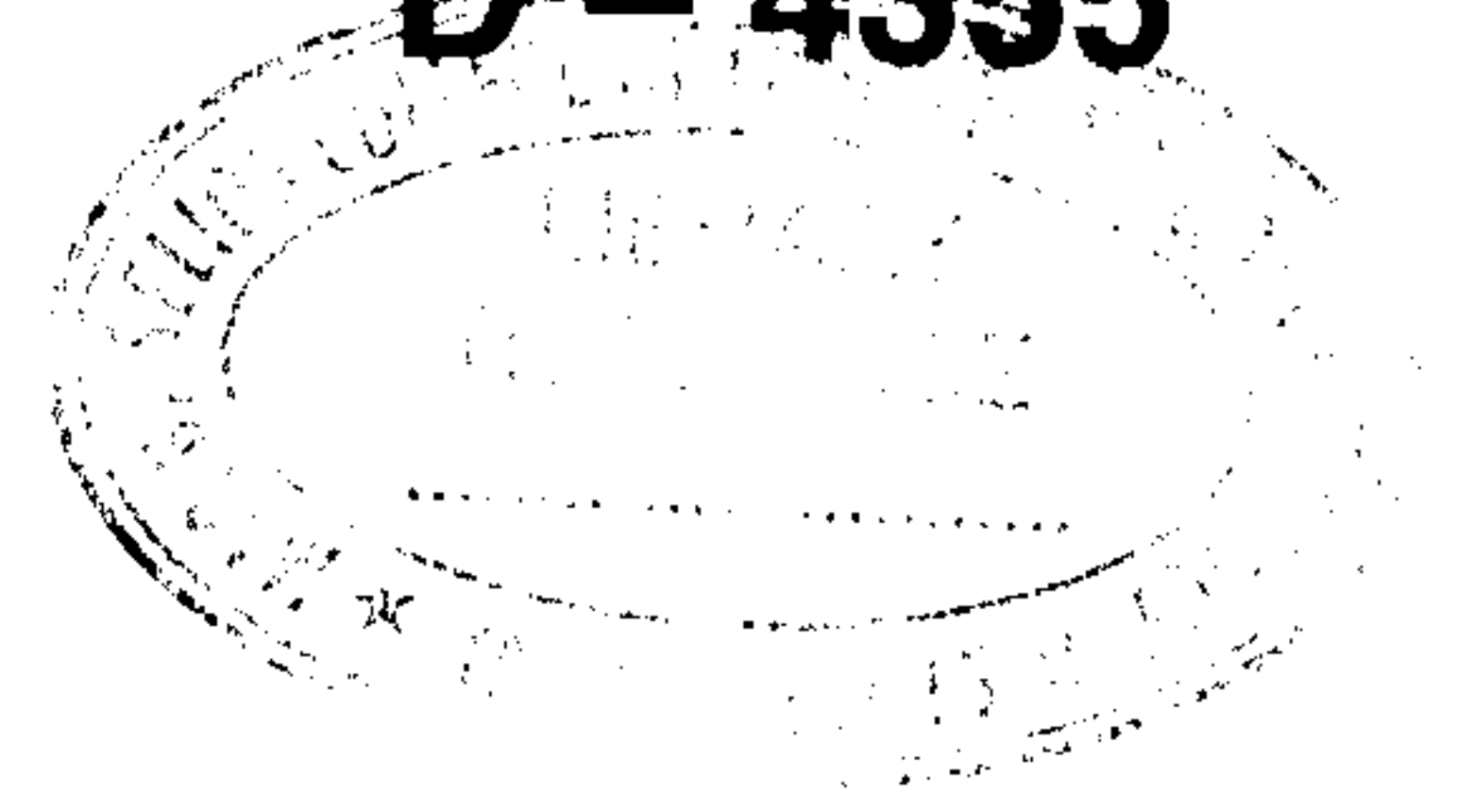


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**D – 4355**

Reg. No. : .....

Name : .....



**Fifth Semester B.Tech. Degree Examination, January 2018  
(2008 Scheme)**

**08.506.13 : NON DESTRUCTIVE TESTING (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions ; **Each** questions carries **4** marks :

1. What are the advantages of non-destructive testing methods ?
2. Mention the advantages of using the fluorescent penetrant process.
3. Compare destructive and non-destructive testing.
4. A radiograph is made using film X with an exposure of 10 mA-min. Film density obtained in the area of interest is 1.0. If it is desired to achieve a density of 2.0 in the area of interest, what exposure is required ?  
(Log relative exposure = 1.1 for a density of 1.0 and 1.62 for a density of 2.0)
5. Define Radiographic sensitivity and what are the variables affects Radiographic sensitivity.
6. Write the general characteristics of ultrasonic waves.
7. Mention the properties of X-rays.
8. Is it essential to demagnetise the specimen after magnetic particle testing ?  
Explain.
9. What are the limitations of eddy current testing ?
10. What are the methods of leak detection in a storage tank ?

**P.T.O.**



## PART – B

Answer **any one full** question from **each** Module, **each** question carries **20** marks :

**Module – I**

11. i) Explain fluorescent penetrant testing. What are its advantages ? 15  
ii) What is visual inspection ? Write the application and limitation of visual inspection. 5

OR

12. i) Which type of penetrant process would be best suited to the detection of wide, shallow discontinuities ? Explain. 14  
ii) Illustrate holographic testing techniques using neat sketch. 6

**Module – II**

13. Discuss in brief :  
i) How does the ultrasonic frequency affect the penetration and resolution ? 14  
ii) What are the limitations of ultrasonic waves ? 6

OR

14. Describe the film processing, interpretation and evaluation of test results in Radiography testing method. 20

**Module – III**

15. i) Elucidate contact and non-contact type inspection method in thermography. 14  
ii) Explain magnetic hysteresis loop. 6

OR

16. Write short notes on the followings : 20  
i) Field sensitive probes  
ii) Image quality indicators  
iii) Acoustic emission testing  
iv) Scope of thermal inspection.
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