

Reg. No.

**MANIPAL INSTITUTE OF TECHNOLOGY****MANIPAL***(A constituent unit of MAHE, Manipal)*

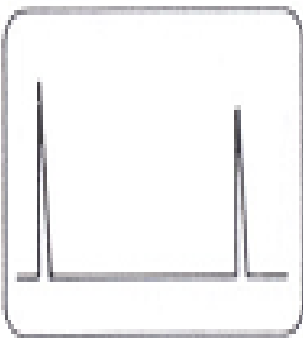
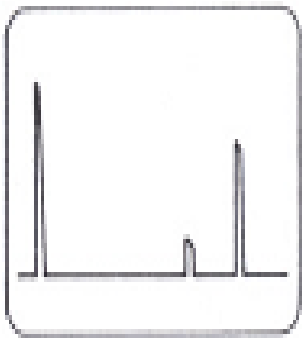
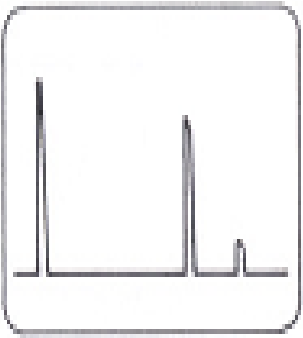
**II SEMESTER M.TECH. (CIVIL ENGINEERING) END SEMESTER
EXAMINATIONS JUNE 2019**

SUBJECT: NON-DESTRUCTIVE TESTING OF MATERIALS [CIE 5282]

Date of Exam: / / **2019** Time of Exam: **to** Max. Marks: **50**

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

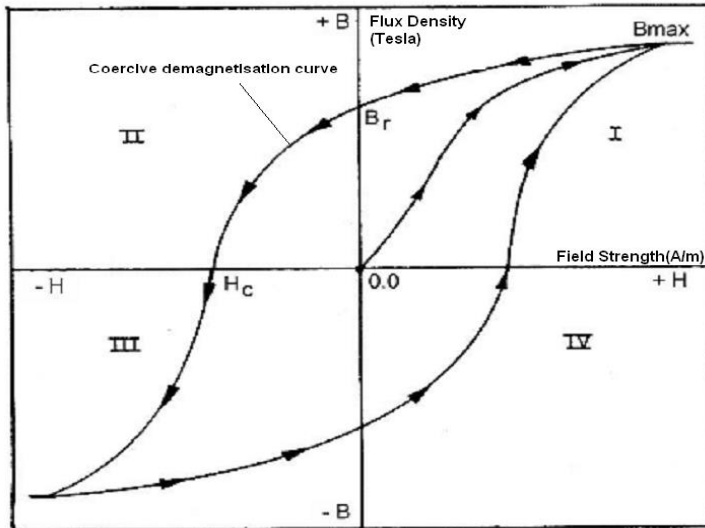
Q. No		Marks	CO
1A.	Distinguish between destructive testing and Non-destructive testing.	5	1
1B.	What is Liquid Penetrant Inspection and Magnetic Particle Inspection? Mention the difference between both the methods.	5	1
2A.	What is Computed Tomography? Mention its advantages and applications.	5	1
2B.	What is leak, leak rate, minimum detectable leak and minimum detectable leak rate?	2	1
2C.	Explain the different types of probes used in Ultrasound inspection technique?	3	2
3A.	What is Eddy current? Explain how it is produced and used in detection of defects.	4	2
3B.	Explain the requirements of liquid penetrants.	4	3
3C.	Explain Dye Penetrant leak testing.	2	4
4A.	With a neat sketch explain the inspection of weld defects, surface defects and radial defects using Ultrasound inspection technique.	6	4
4B.	Interpret the Ultrasound wave diagram shown below. <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p align="center">(a) (b) (c)</p>	4	5



5A. The Hysteresis curve used in Electro-magnetic method of NDT is shown below. Write your inference.

5

5



5B. Write your inference on the Acoustic Emission v/s Load graph shown below.

