Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–VI (NEW) EXAMINATION – WINTER 2024

Subject Code:3161923 Date:05-12-2024

Subject Name: Non destructive Testing

Time:02:30 PM TO 05:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	What is visual examination? Explain visual examination method using borescope.	**07**
	(b)	State the principle of liquid penetrant testing. Discuss the various steps involved in the liquid penetrant testing (LPT).	**07**
Q.2	**(a)**	Explain the principle of Dye penetrant testing (DPT). Mention the application and limitation for same.	**07**
	(b)	List out and discuss briefly different MPT equipment.	**07**
		OR	
	(b)	Explain in details various steps involved in magnetic particle testing?	**07**
Q.3	**(a)**	Distinguish between A-Scan, B-Scan, and C-Scan presentation in ultrasonic testing.	**07**
	(b)	Give salient features of acoustic emission technique.	**07**
		OR	
Q.3	**(a)**	State the basic principle, advantages, limitations and applications of ultrasonic testing method.	**07**
	(b)	Explain use of ultrasonic testing (UT) in field of welding with types of defects that can be detected during the same.	**07**
Q.4	**(a)**	Explain the Radiographic Testing method.	**07**
	(b)	Explain in brief the leak testing of heat exchanger tubes in a boiler.	**07**
		OR	
Q.4	**(a)**	Discuss the use of radiography testing (RT) in the field of welding. Draw and explain the types of defects that can be observed during the same.	**07**
	(b)	Explain in brief about pressure decay and vacuum decay leak testing.	**07**
Q.5	**(a)**	Explain in brief Eddy Current Testing.	**07**
	(b)	Explain safety precautions to be taken during Radiographic testing (RT).	**07**
		OR	
Q.5	**(a)**	Discuss techniques and applications of thermography.	**07**
	(b)	Describe the significance of flux produced in Eddy Current Testing.	**07**

****