Enrollment No.

NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Engineering and Technology
Program/s: Mechanical Engineering
Year: 3rd **Semester:** 6th
Examination: End Semester Examination
Examination year: May – 2023

Course Code: ME 434 **Course Name:** **Advance Welding Technology**
Date: 22/05/2023 **Total Marks:** 40
Time: 2:00 pm to 4:00 pm **Total Pages:** 01

Instructions:

- *Write each answer on a new page.*
- ** COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping*

Q. No.1	**Answer all the questions**	**Marks (25)**	COs*	BTL#
1.	How does the thermal cycle affect the residual stresses? What are the causes of residual stress in welding? How it is can be reduced in welded metal?		CO1 CO2	BT1, BT2
2.	To weld the metal under water which welding techniques are used? Explain anyone process in detail.		CO2	BT 1, BT 2
3.	Explain the mechanism responsible for higher penetration in the Flux Zone TIG welding process with a neat sketch.		CO3	BT 2,
4.	What are the types of distortions and shrinkages formed during fusion welding? Shows the relation with base material characteristics.		CO3	BT 2
5.	What do you understand by the quality of weld joints? Explain its characteristics.		CO2	BT 4, Bt 6
Q. No.2	**Answer ANY THREE questions**	**Marks (15)**		
1.	List down various parameters of Friction Stir Welding and explain their effect.		CO3	BT4 BT6
2.	Two plates 300 mm wide and 8 mm thick are to be welded by means of transverse welds at the ends. If the plates are subjected to a load of 60 kN, find the size of the weld assuming the allowable tensile stress 70 MPa.		CO3	BT 2 BT 4
3.	How to weld the metal in space? Explain the most efficient method in detail.		CO2	BT 2 BT 4
4.	Write a short note on the Plasma Arc welding process.		CO2	BT 2 BT 2

**********End of Question Paper**********