Reg No.:_____ Name:_____

03000ME366052103

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree Regular and Supplementary Examination July 2021

Course Code: ME366

Course Name: ADVANCED METAL JOINING TECHNOLOGY

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks. Marks

1 a) What is meant by radiant energy welding? (3)

b) Write about electron beam welding including the following (7)

i) Principle of operation

ii) Joint preparation

iii) Work piece cleaning

iv) Welding process

2 a) Explain two types of laser sources with the help of neat sketches. (6)

b) What are the applications and limitations of LBW? (4)

3 a) With neat sketches explain the different techniques for cold welding lap joints. (8)

b) Explain the applications of cold welding process. (2)

4 a) What are the variables which control the strength of welding in diffusion welding process? (3)

b) Explain the theory of diffusion welding process. (7)

PART B

Answer any three full questions, each carries 10 marks.

5 a) Briefly explain explosive welding. (4)

b) What are the key variables in explosive welding? (6)

6 a) Explain structural adhesives and non-structural adhesives. (4)

b) Explain various types of adhesive joint geometries. (6)

7 a) Explain the principle of operation of ultrasonic welding. (7)

b) What are the controllable variables of ultrasonic welding? (3)

8	a)	Compare vacuum brazing with welding.	(3)
	b)	Explain the principle of operation of brazing.	(7)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	What are the applications of plasma arc welding?	(4)
	b)	Explain the principle of operation of plasma arc welding.	(6)
10	a)	Explain the process of Needle Arc Micro Plasma Welding.	(10)
11	a)	Differentiate TIG Torch and Plasma torch with help of diagrams.	(5)
	b)	Explain under water shielded metal arc welding.	(5)
12	a)	Explain the principle of operation and steps involved in magnetically impelled arc butt welding.	(8)
	b)	Explain the applications of MIAB welding.	(2)
13	a)	Explain the basic principles of friction welding.	(8)
	b)	What are process capabilities of friction welding?	(2)
14	a)	Explain the components of friction welding machine.	(6)
	b)	What are the major process parameters in friction welding?	(4)

*****