Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (S,FE) Examination May 2022 (2015 Scheme)

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) Explain solid state and fusion welding process. (3)

b) Explain the necessity of vacuum in electron beam welding. (3)

c) Write short note on i) Safety in electron beam welding ii) Types of joint in electron beam welding. (4)

2 a) Explain how different process parameter influence laser beam welding. (4)

b) With the help of schematic diagram explain the woking of laser beam welding. (6)

3 a) What are the different methods of diffusion welding? How surface preparations affect the strength of the joint? (10)

4 a) Explain the types of cold welding equipments used. (3)

b) Explain the applications and limitations of diffusion welding process (4)

c) Name the materials that can be welded by diffusion welding process. (3)

PART B

Answer any three full questions, each carries 10 marks.

5 a) Describe the different equipments needed for explosive welding. (5)

b) Explain the explosion welding of tube to tube plate with sketches. (5)

6 a) What are the different adhesives used for bonding plastics? (4)

b) Explain with sketches, typical lap and butt joints used for adhesive bonding. (6)

7 a) Explain the types of ultrasonic weld. (8)

b) What are the advantages ultrasonic welding. (2)

8 a) Explain theory, mechanism, key variables and equipments of vacuum brazing. (10)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	Compare metal inert gas welding and plasma arc welding.	(4)
	b)	Describe the shielding mechanism in plasma arc welding.	(6)
10	a)	Explain transferred and non-transferred arc welding techniques.	(7)
	b)	What are the advantages of constricting plasma in PAW?	(3)
11	a)	Explain dry under water welding.	(5)
	b)	Explain the advantages and dis advantages of underwater welding.	(5)
12	a)	Differentiate friction welding and Friction Stir welding with examples.	(7)
	b)	List major application of friction welding.	(3)
13	a)	Explain the influence of tool geometry in friction welding process.	(7)
	b)	List out the materials that can be friction stir welded.	(3)
14	a)	Explain the type of friction welding process.	(7)
	b)	Explain the parameters affecting friction stir welding process.	(3)

****