

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (R,S) Examination May 2024 (2019 Scheme)

**Course Code: MET372****Course Name: ADVANCED METAL JOINING TECHNIQUES****Max. Marks: 100****Duration: 3 Hours****PART A***Answer all questions, each carries 3 marks.*

		Marks
1	Explain about three types of lasers used in Laser Beam Welding	(3)
2	Write three application areas of Electron Beam Welding.	(3)
3	Write three merits and three demerits of diffusion welding.	(3)
4	Write three factors to be considered while selecting adhesive materials in adhesive bonding.	(3)
5	Explain about two process parameters of explosive welding.	(3)
6	Explain about linear friction welding.	(3)
7	Explain about furnace brazing.	(3)
8	Write the various equipment in ultrasonic welding operation.	(3)
9	Draw three joint configurations in plasma arc welding.	(3)
10	What is Magnetically impelled arc butt (MIAB) welding?	(3)

PART B*Answer any one full question from each module, each carries 14 marks.***Module I**

- 11 a) Explain the working principle of an electron gun in Electron Beam Welding with neat sketch. (10)
- b) Write two merits and two demerits of Electron Beam Welding. (4)

OR

- 12 a) Explain the working of Laser Beam Welding, using a neat sketch. (10)
- b) Explain about two process parameters in Laser Beam Welding. (4)

Module II

- 13 a) Explain adhesive bonding procedure with suitable diagram. (10)
- b) Write about two types of adhesives used in adhesive bonding and explain. (4)

OR

- 14 a) Using a neat sketch, explain the mechanism of cold pressure welding. (10)
b) Write four applications of cold pressure welding. (4)

Module III

- 15 a) Explain the working principle of parallel and inclined types of arrangements in explosive welding, using neat sketches. (10)
b) Write two advantages and two disadvantages of explosive welding (4)

OR

- 16 a) With the help of neat diagrams, explain the working of Friction stir welding. Also write four applications of Friction stir welding (14)

Module IV

- 17 a) With the help of a neat sketch, explain vacuum brazing and list out four applications. (14)

OR

- 18 a) With the help of a neat sketch, explain the working of ultrasonic welding. (10)
b) Write about two process parameters in ultrasonic welding. (4)

Module V

- 19 a) Using neat sketches, explain the operation of wet under water welding and dry under water welding (14)

OR

- 20 a) Using neat sketches, explain transferred and non-transferred plasma arc welding techniques (14)
