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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S6 (S,FE) Examination December 2025 (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		Draw the diagram EBW gun and mark the important parts	(3)
2		Write three applications of laser beam welding	(3)
3		Write three applications of adhesive bonding	(3)
4		Write a short note on cold pressure welding equipment	(3)
5		Draw the diagram of friction welding set up and mark the important parts	(3)
6		List the different components used in explosive welding process	(3)
7		Write three applications of ultrasonic welding	(3)
8		Write three advantages of brazing	(3)
9		Explain the term MIAB in welding	(3)
10		Write three limitations of plasma arc welding	(3)

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Explain the process characteristics and variables of Electron Beam Welding	(10)
	b)	Explain the weld joint design of Electron Beam Welding	(4)

OR

12	a)	Explain the principle of operation of laser beam welding with neat diagram	(10)
	b)	Write a short note on carbon dioxide lasers in welding	(4)

Module II

13	a)	Explain the principle of diffusion welding	(8)
	b)	List the different steps in adhesive bonding	(6)

OR

14	a)	Explain the types of adhesives and bonding method used in adhesive welding	(10)
	b)	Write four application of cold pressure welding	(4)

Module III

15	a)	Describe the different stages in explosive welding	(10)
	b)	Explain about two process variables in friction welding	(4)

OR

16	a)	Explain the principle of operation of friction welding	(10)
	b)	Write four applications of friction stir welding	(4)

Module IV

17	a)	Explain the working of ultrasonic welding with neat diagram	(10)
	b)	Explain about two process parameters of ultrasonic welding	(4)

OR

18	a)	Explain the working principle of brazing	(6)
	b)	Explain the following operations	(8)
		a. Torch brazing b. Vacuum brazing	

Module V

19	a)	Describe the steps involved of MIAB with neat diagram	(7)
	b)	Explain the principle of operation of dry under water welding	(7)

OR

20	a)	Write six applications of MIAB	(6)
	b)	Explain the principle of operation of Plasma arc welding	(8)

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