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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE(S) EXAMINATION, DECEMBER 2019

Course Code: ME366

Course Name: Advanced Metal Joining Technology

Max. Marks: 100 Duration: 3 Hours

PART A

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

1	a)	List out the process parameters which are needed to be controlled during EBW?	(5)
	b)	What are the main parts of electron gun? List out and explain its functions.	(5)
2		Explain the different types of Lasers	(10)
3	a)	Describe the theory and principle behind the diffusion welding process	(5)
	b)	List the key process variables in diffusion welding process	(5)
4	a)	With the help of neat sketch explain the equipment and setup of cold pressure welding	(7)
	b)	List the advantages of deformation welding	(3)

PART B

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

5	a)	Compare oblique and parallel explosion welding processes.	(5)
	b)	List the advantages and limitations of explosion welding process.	(3)
	c)	Explain the importance of detonation velocity in explosion welding.	(2)
6	a)	With the help of neat sketch explain the failure mechanisms of adhesive bonding	(5)
	b)	What are the major classifications of adhesive used in adhesive bonding?	(5)
7	a)	Explain the main process parameter in Ultrasonic welding.	(5)
	b)	Describe the theory and working principle of Ultrasonic welding with neat sketches.	(5)
8	a)	Explain the key features of vacuum brazing furnace.	(5)
	b)	List the advantages and limitations of Vacuum brazing.	(5)

PART C

Answer any four full questions, each question carries 10 marks.

9	a)	Explain in detail the equipment and tooling used in Plasma Arc Welding.	(7)
	b)	Write a short note on Needle Arc Micro Plasma welding.	(3)
10	a)	With the help of a neat sketch explain hyperbaric welding.	(7)
	b)	List the demerits of underwater welding.	(3)

11	a)	Explain the principle of Magnetically Impelled Arc Butt welding process.	(5)
	b)	Compare transferred and non - transferred arc technique in PAW.	(5)
12	a)	With the help of neat sketch explain the different stages of friction welding.	(5)
	b)	Describe the influence of process parameters in friction welding.	(5)
13	a)	Explain Influence of Tool Geometry on Material Flow Patternin Friction Stir Welding Process.	(7)
	b)	List out the materials that can be friction stir welded.	(3)
14	a)	Draw the different shapes of probes used in friction stir welding.	(5)
	b)	List the application of friction stir welding.	(5)

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