BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: B. TECH **SEMESTER : V**
BRANCH: PIE **SESSION : MO/2025**

SUBJECT: PE317 ADVANCED WELDING TECHNOLOGY

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	Explain the working principle of friction welding with neat sketches.	[2]	1	2
Q.1(b)	Explain the mechanism of explosive welding. What are the advantages and limitations of this process?	[3]	1	2
Q.2(a)	Discuss the key process parameters in diffusion welding.	[2]	1	2
Q.2(b)	Describe the main equipment components of an electron beam welding (EBW) machine and their functions.	[3]	1	1
Q.3(a)	Show the paraxial and coaxial arrangements in hybrid welding?	[2]	2	3
Q.3(b)	Compare the weld quality and efficiency of hybrid welding with conventional arc welding and laser welding.	[3]	2	2
Q.4(a)	Describe the working principle of arc spraying processes.	[2]	2	1
Q.4(b)	Explain the differences between cladding, and build-up, with suitable examples.	[3]	2	2
Q.5(a)	Show the position of electrode in flat, horizontal, vertical, and overhead welding.	[2]	3	3
Q.5(b)	Discuss the problems encountered in underwater welding compared to welding in air?	[3]	3	2

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