

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

**CLASS: B. TECH.  
BRANCH: PRODUCTION**

**SEMESTER: VII  
SESSION: MO/2022**

**SUBJECT: PE407 ADVANCED MANUFACTURING PROCESSES**

**TIME: 2 HOURS**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The total marks of the questions are 25.
  2. Candidates attempt for all 25 marks.
  3. Before attempting the question paper, be sure that you have got the correct question paper.
  4. The missing data, if any, may be assumed suitably.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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			CO	BL
Q1 (a)	Why Advanced Manufacturing processes are important? Explain.	[2]	CO1	BL2
Q1 (b)	Explain the most appropriate process of casting one piece of an Engine Block of Internal Combustion Engine and Justify.	[3]	CO1	BL4
Q2 (a)	What is the industrial application of Ceramic Shell Investment Casting process? Explain.	[2]	CO1	BL2
Q2 (b)	What are the advantages of Semi-Solid Metal casting processes over Sand Casting?	[3]	CO1	BL2
Q3 (a)	What are the advantages and Limitations of Plaster Mould Casting Process? Explain.	[2]	CO1	BL1
Q3 (b)	What is the principle of cold welding? Which materials can be cold welded, and which cannot? Explain.	[3]	CO2	BL3
Q4 (a)	Explain solid-state welding?	[2]	CO2	BL2
Q4 (b)	What is the principle of Friction Stir Welding? Which Materials can be friction stir welded and which cannot? Explain.	[3]	CO2	BL4
Q5 (a)	What is the industrial application of Diffusion welding process?	[2]	CO2	BL2
Q5 (b)	What are the Industrial application, advantages, and limitations of Explosive Welding process?	[3]	CO2	BL2

::: 26/09/2022 :::M