

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

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

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

**SUBJECT: PE407 ADVANCED MANUFACTURING PROCESSES**

**TIME: 3:00 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Illustrate the advantages of Plaster Mould Casting process over Sand Casting process.	[2] CO1	BL1
Q.1(b)	Describe the characteristics of Thixocasting and Rheocasting.	[3] CO1	BL4
Q.1(c)	Describe the Ceramic Shell Investment Casting processes with industrial applications.	[5] CO1	BL3
Q.2(a)	Classify the Solid-State Welding Process.	[2] CO2	BL2
Q.2(b)	Describe the characteristic of a good Under Water Welding.	[3] CO2	BL3
Q.2(c)	Describe the Diffusion Welding process with industrial applications.	[5] CO2	BL3
Q.3(a)	Illustrate the advantages of Superplastic forming.	[2] CO3	BL1
Q.3(b)	Summarize the product and application of Ring Rolling process.	[3] CO3	BL2
Q.3(c)	Briefly describe the High Energy Rate Forming (HERF) process.	[5] CO3	BL4
Q.4(a)	Illustrate the advantages of Cold Isostatic Pressing (CIPing).	[2] CO4	BL1
Q.4(b)	Summarize the advantages of Hot Isostatic Pressing (HIPing).	[3] CO4	BL2
Q.4(c)	Briefly describe the Powder Metallurgy Process.	[5] CO4	BL4
Q.5(a)	Illustrate the advantages of Rotational Moulding of plastics.	[2] CO5	BL1
Q.5(b)	Illustrate the advantages and disadvantages of Injection Moulding of plastics.	[3] CO5	BL2
Q.5(c)	Describe the working principle and process parameters of Extrusion of Plastics.	[5] CO5	BL4

:::21/11/2022:::M