Reg No.: _____ Name: _____ PFA020526BA-I

Jyothi Engineering College(Autonomous)

M.Tech Degree S2 (R) Examination, May 2026 (2025 Scheme)

25PIAT202 - MODERN MANUFACTURING SYSTEMS

Total Mark: 60 **Total Time: 2hr 30min**

CO MARK

PART A

Answer All Questions

1. Discuss the effect of process parameters in Ultrasonic Machining (USM). CO1 (5)
2. Explain the material removal mechanism in Electrochemical Grinding (ECG) with the help of a neat sketch. CO2 (5)
3. Describe the Wire cut EDM process and its applications. CO3 (5)
4. Differentiate conventional forming and high velocity forming processes. CO4 (5)
5. Explain the principle of explosive forming and discuss the types of explosives used in the process. CO5 (5)

PART B

Answer Any Five Question(s)

6. Illustrate Ultrasonic Machining (USM) with a neat sketch and explain its elements, advantages, and limitations for machining hard and brittle materials. CO1 (7)
7. With the help of a neat sketch, explain the working principle of Electrochemical Machining (ECM) and describe its main elements. CO2 (7)
8. Explain the working principle and material removal mechanism of Laser Beam Machining (LBM) with a neat sketch, and discuss its machining characteristics. CO3 (7)
9. With a neat sketch, analyze the working of a D.C. plasma torch in Plasma Arc Machining (PAM) and the effect of process parameters on machining performance. CO4 (7)
10. Explain the energy in plastic deformation during explosive forming and derive the bulging equation for a flat disc. CO5 (7)
11. With the help of a neat sketch, explain the principle of Abrasive Jet Machining (AJM) and discuss its applications. CO1 (7)
12. Illustrate the magnetic pulse forming process with a neat sketch and explain its applications in engineering. CO5 (7)

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