

B.Tech II Year I Semester (R20) Supplementary Examinations April/May 2024

MANUFACTURING PROCESSES

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
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| (a) What is the difference between pattern and casting? | 2M |
| (b) What are the advantages of true centrifugal casting process? | 2M |
| (c) Define hot working. | 2M |
| (d) What are the advantages of extrusion process? | 2M |
| (e) Differentiate between Welding and soldering. | 2M |
| (f) What are the causes and remedies of welding process: (i) Spatter, (ii) Hot inclusions. | 2M |
| (g) What are applications of powder Ceramics? | 2M |
| (h) List the basic steps in Powder Metallurgy. | 2M |
| (i) Explain the process variables in ECM process. | 2M |
| (j) Explain any two parameters on working accuracy and metal removal rate in AJM. | 2M |

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

- 2 Describe the process of centrifugal casting with neat sketch. What are the advantages? 10M
- OR**
- 3 (a) What purpose is served by the risers in sand casting? Explain the principles of design of risers. 5M
- (b) What are the advantages, limitation and applications of investment casting? 5M
- 4 (a) Explain forward extrusion and backward extrusion with neat sketches. 7M
- (b) What are the advantages of cold forging? 3M
- OR**
- 5 List out the different forging operations and explain drop forging operation with neat sketch. 10M
- 6 What are the reasons and effects of Heat affected zone in welding? 10M
- OR**
- 7 With sketch, explain the laser beam welding process. Mention advantages and limitation of laser welding. 10M
- 8 Explain rotational moulding with a neat sketch. 10M
- OR**
- 9 Describe the steps involved in the preparation of ceramic powder. 10M
- 10 Explain the principle of EDM and list advantages and disadvantages of EDM. 10M
- OR**
- 11 Explain with neat sketch working principle of ultrasonic machine. Give the leading advantages of USM. 10M
