

[Total No. of Questions: 09]

EVENING

[Total No. of Pages: 02]

Uni. Roll No.

04 JUL 2022

Program/ Course: **B.Tech. (Batch 2018 onward)**

Semester: 4th

Name of Subject: **Modern Manufacturing Processes**

Subject Code: **PCME-109**

Paper ID: **16199**

Time Allowed: 3 Hours

Max. Marks: 60

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

Q1.

- a) What is the meaning of sintering?
- b) What are the advantages and limitations of the EBM process?
- c) Write the working principle of the Wire cut EDM process.
- d) How does abrasive jet machining differ from abrasive flow machining?
- e) What do you understand by honing?
- f) Write the process parameters used in EDM.

Part – B

[Marks: 04 each]

- Q2.** With the help of diagrams, discuss the “Shell moulding” method and also give the advantages, disadvantages and product applications of the Shell moulding method.
- Q3.** Describe the principle of explosive forming. Compare confined system and nonconfined system of explosive forming.
- Q4.** Explain the need and characteristic features of non-traditional machining.
- Q5.** What are the process variables that affect the performance of the water jet machining process?

EVENING

04 JUL 2022

- Q6. Compare the Cold-chamber and Hot-chamber methods of die casting.
- Q7. What is a flexible manufacturing system? Explain the principle of evaporative casting.

Part – C

[Marks: 12 each]

- Q8 (a) With a neat sketch, explain the working principle of the ultrasonic welding process.
- (b) Mention the advantages, disadvantages and applications of ultrasonic welding.

OR

- (a) Give a brief note on the economic aspects of ECM and also explain their Metal removal rate, process variable and applications of it.
- (b) What are the advantages of the chemical machining process?

- Q9 (a) What do you mean by powder metallurgy? Write advantages and disadvantages of powder metallurgy.
- (b) What is electrohydraulic forming? Explain with a neat diagram.

OR

Write note on Rapid Prototyping and Rapid Tooling