

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (ME) (Sem-6)
MANUFACTURING PROCESSES

Subject Code : BTME-503-18

M.Code : 78249

Date of Examination : 16-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) Differentiate between up-milling and down milling process.
- b) Explain the basic principle of arc welding processes.
- c) Outline the various post sintering operations adopted in powder metallurgy.
- d) Differentiate between forward and backward extrusion processes.
- e) Distinguish between brazing and soldering operations.
- f) Briefly explain the need for rapid prototyping.
- g) What is meant by rapid tooling?
- h) Classify the unconventional machining process on the basis of type of energy employed.
- i) Make a comparison of solid state lasers with gas lasers.
- j) Enumerate the different applications for jigs and fixtures.

SECTION-B

2. Discuss the heat transfer of sand casting. Explain the parameters on which solidification time depends in metal casting.
3. List out applications of rapid prototyping. Discuss the steps followed in rapid prototyping process.
4. Write a short note on different theories associated with Adhesive Bonding.
5. What is the principle of Electro Chemical Machining (ECM)? Describe the chemistry involved in the ECM process. Enlist the elements of ECM process with a suitable sketch.
6. Describe- the principles of forging die design giving a neat sketch.

SECTION-C

7.
 - a) Explain some defects that can be present in casting products.
 - b) How do you define the tool life? Explain the parameters that control the tool life of a single point cutting tool.
8.
 - a) Explain various elements of geometry of twist drill giving a neat sketch.
 - b) With the help of neat sketch, explain the principle of USM. Discuss the effects of different process parameters on the metal removal rate in USM.
9.
 - a) Explain the methods of obtaining metal powders used in powder metallurgy process with the help of neat sketches.
 - b) What is rapid tooling and explain the applications of RPT in manufacturing and tooling.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.