

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE****Supplementary End Semester Examination – Summer 2022****Course: B. Tech. Branch : Mechanical Engineering****Semester : VII****Subject Code & Name: BTMEC 703- Manufacturing Processes - III****Max Marks: 60****Date: 22/08/2022****Duration: 3.45 Hrs.****Instructions to the Students:**

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in the bracket in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

**Q. 1 Solve Any Two of the following.**

- A) Explain the point – to – point, linear, and contouring systems with the help of suitable examples. **CO1** 6
- B) Describe recirculating ball screws w.r.t. types of thread forms, arrangements of recirculation, preloading of nuts, and advantages. **CO1** 6
- C) Describe stepper motors w.r.t. principle of working, advantages, and limitations. **CO1** 6

**Q.2 Solve Any Two of the following.**

- A) Describe various tool magazine arrangements used in CNC machines. **CO2** 6
- B) Explain the various designs and types of automatic pallet changer. **CO2** 6
- C) Explain the use of G00, G01, G02 codes with the help of suitable examples. **CO2** 6

**Q. 3 Solve Any Two of the following.**

- A) Explain the abrasive jet machining process. **CO3** 6
- B) Write in short about electron beam machining. **CO3** 6
- C) Discuss the principle of working of electro-chemical machining. **CO3** 6

**Q.4 Solve Any Two of the following.**

- A) Discuss the basic principles involved in the Physical Vapour Deposition (PVD) and Chemical Vapour Deposition (CVD) Processes. **CO4** 6
- B) Explain the electroplating and electroless plating processes in brief. **CO4** 6
- C) Briefly describe the thermal spraying processes. **CO4** 6

**Q. 5 Solve Any Two of the following.**

- A) Define rapid prototyping and explain the subtractive and additive processes in brief. **CO5** 6
- B) Explain fused deposition modeling and stereolithography processes. **CO5** 6
- C) Describe the LIGA microfabrication process. **CO6** 6

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