

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## September / October 2023 Supplementary Examinations

**Programme: B.E.**

**Branch: Industrial Engineering and Management**

**Course Code: 19IM4DCCIM**

**Course: Computers in Manufacturing**

**Semester: IV**

**Duration: 3 hrs.**

**Max Marks: 100**

**Date: 20.09.2023**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

### UNIT - I

- 1 a) With a help of a block diagram explain the application of Computers in design process. **10**
- b) List out the advantages and disadvantages of CAD/CAM **10**

### UNIT - II

- 2 a) State the difference between wire frame and solid modeling **10**
- b) Discuss the importance of 2D transformations Computer graphics in CAD system **10**

### UNIT - III

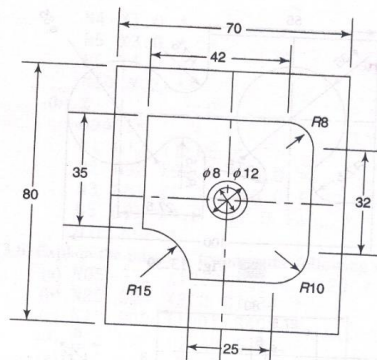
- 3 a) Explain the two types of Adaptive Control Systems in CNC Machines. **10**
- b) Explain the working and benefits of an automatic tool changer? **10**

### OR

- 4 a) Explain open loop and closed loop control system in CNC machines with neat sketches. **10**
- b) List the advantages and disadvantages of servo motors in CNC System **10**

### UNIT - IV

- 5 a) Write a manual part program for the component shown below(except drilling) **12**

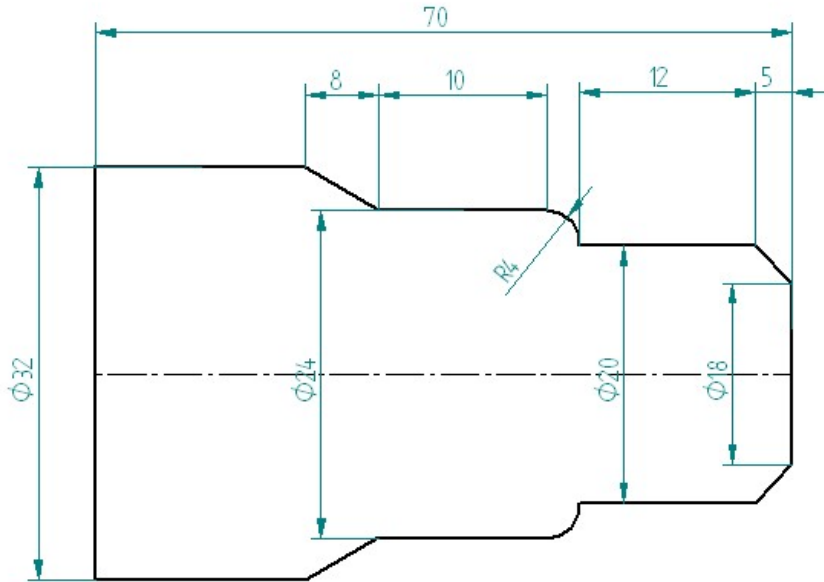


**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

- b) Explain differences between: 08
- i. Absolute and Incremental CNC systems
  - ii. Tool radius and Tool length compensation

**OR**

- 6 a) Generate program for turning operation for the profile given below. Cutting tool: LH turning tool 12



- b) Briefly explain different NC words required for NC part program. 08

**UNIT - V**

- 7 a) What is an End Effector? Explain the types of end effectors used in robots. 10
- b) Differentiate between contact and noncontact sensors in robots with the help of examples 10

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