

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**M.Tech., Winter 2017 - 18 Examination**

**Semester: 2**  
**Subject Code: 03208153**  
**Subject Name: CNC Technology**

**Date: 09/01/2018**  
**Time: 02:00 pm to 04:30 pm**  
**Total Marks: 60**

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**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Answer the following questions.**

- A) Write down applications of 3D printing. (05)
- B) State advantages of CNC machine tools over NC machine tools. (05)
- C) Explain the following codes: (05)
1. G90 & G91
  2. G41 & G42

**Q.2 Answer the following questions. (Attempt any three) (Each five mark) (15)**

- A) Enlist the types of ATC and explain any one with neat sketch.
- B) Write a short note on Fuzzy logic.
- C) Discuss various programming methods used for robotics.
- D) Explain the following terms.
1. Absolute System
  2. Incremental System
  3. Block and Words
  4. Formats

**Q.3 A) State merits and demerits of lead screw and recirculating ball screw used for NC/CNC machines. (07)**

- B) Classify CNC machine tools on the basis of following with neat sketch : (08)
1. Type of feedback system
  2. Type of tool motion control

**OR**

- B) Write a part program for the given geometry in **figure 1** using turning canned cycle. (08)
- Raw material size : 90 mm diameter x 112 mm long
- Raw material : MS bar
- All dimensions are in mm.

**Q.4 A) Compare CNC machines with conventional machines. (07)**

**OR**

- A) Classify sensors for robotics. Explain different types of sensors with their applications in detail. (07)
- B) Discuss the various grippers used for robotics with their applications. (08)

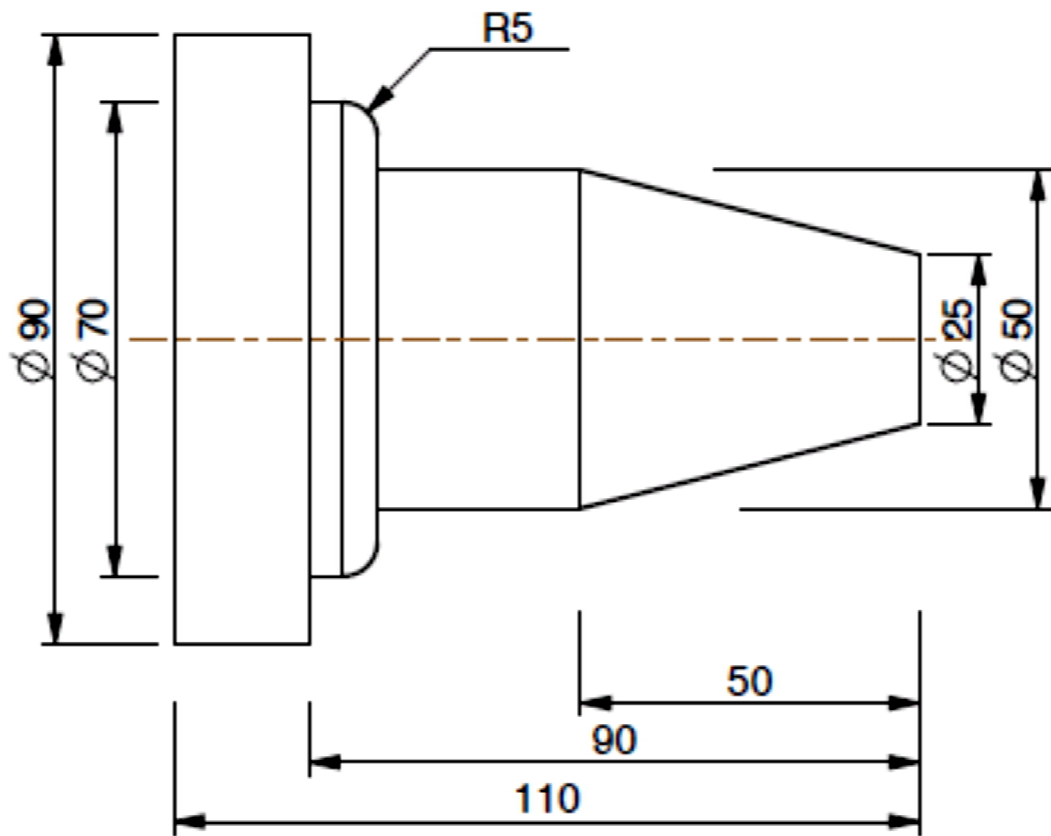


Figure 1