

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME SEMESTER II EXAMINATION – SUMMER 2017**

**Subject Code: 2722808**

**Date: 29/05/2017**

**Subject Name: Product Automation and CNC technology**

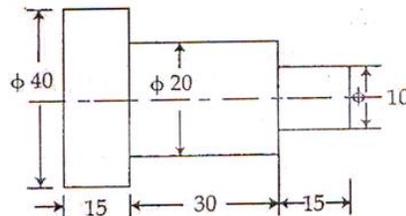
**Time: 02:30 PM to 05:00 PM**

**Total Marks: 70**

**Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1 (a) Discuss various practical aspects of introducing CNC machines in industry. 07  
(b) Explain various drive used in CNC machines. 07
- Q.2 (a) Explain ACC and ACO briefly. 07  
(b) Classify with neat sketch the NC system based on motion control. 07
- OR
- (b) Give the difference between an Open loop and a Closed loop control system. 07
- Q.3 (a) Write a note giving examples of repetitive programming in APT. 07  
(b) Give some examples of automation with specific reference to manufacturing of discrete components and parts. 07
- OR
- Q.3 (a) Explain need of canned cycles in turning centers with suitable example. 07  
(b) Explain any 7 vocabulary words used in APT language. 07
- Q.4 (a) Explain the programming of CNC Machining centre with suitable example. 07  
(b) Write a note on Word Address Format that is generally used with CNC machining center. 07
- OR
- Q.4 (a) Explain Part programming for machining along curved surface using example. 07  
(b) What is the importance of using subroutines in a part program? Explain nested subroutines with an example. 07
- Q.5 (a) Explain in brief G code used for Stock removal turning cycle and finish turn cycle. 07  
(b) Discuss how tool length is compensated in the CNC system. 07
- OR
- Q.5 (a) Write a manual par program for machining following component on CNC lathe. 07  
Bar stock diameter is 42.



(All the dimensions are in mm)

- (b) Describe a CNC wire EDM machine. 07

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