

**BACHELOR OF TECHNOLOGY IN  
MECHANICAL ENGINEERING  
(COMPUTER INTEGRATED  
MANUFACTURING)**

**Term-End Examination**

**June, 2010**

**BME-004 : CNC TECHNOLOGY**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : All questions carry equal marks. Answer any seven questions. Assume missing data if any.*

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1. (a) Explain the technological factors which have necessitated the development of Numerical control of machine tools. 5
- (b) Explain the following two controls of NC machine tool : 5
  - (i) Point to point
  - (ii) Continuous path
  
2. (a) How is a CNC control system organized ? Explain with the help of suitable block diagram. 5
- (b) List the advantages of the re-circulating ball screw compared to conventional type of screws. 5

3. (a) What is tool pre-setting ? Explain its requirements in CNC - machining. 5  
 (b) Describe five applications where the touch trigger probes can be used on a shop - floor. 5
4. (a) Explain the word address format that is generally used with CNC machining centres. 5  
 (b) What is circular interpolation in CNC programming ? Take an example and explain the syntax of circular interpolation using radius value and centre point coordinates. 5
5. (a) Describe the need of cutter diameter compensation while CNC programming. Explain with the help of a suitable sketch. 5  
 (b) Explain the need of canned cycle in milling. Give an example of canned cycle. 5
6. Write a part program to fabricate the part shown in figure-1 by using a turning centre. 10

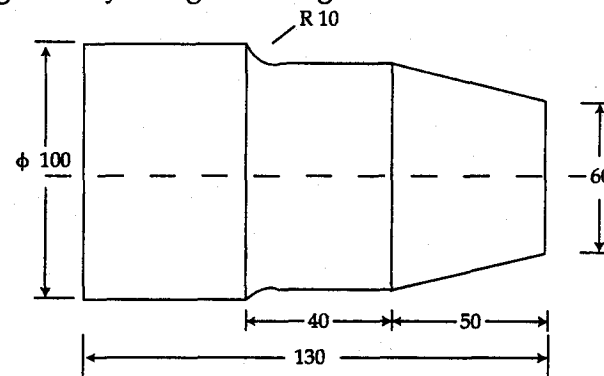


Figure - 1

7. (a) Explain the concept of post processor as used in computer aided part programming. 5  
(b) With suitable example, illustrate the use of G 94 canned cycle. 5
8. (a) With the help of suitable block diagram describe the hand shaking methods between communicating devices. 5  
(b) Explain the working of a bus network. Give reasons why it is the most widely used. 5
9. (a) Give a comparison of serial and parallel communication in DNC. 5  
(b) Write a short note on MAP. 5
10. (a) Discuss the points that need to be considered for selecting the type of material handling system. 5  
(b) Enlist the various steps involved in the development of flexible manufacturing systems and cells. 5
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