

Roll No. 

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (CAD/CAM) (Sem.-3)

**COMPUTER CONTROL IN MACHINE TOOLS**

Subject Code : ME-504

M.Code : 23508

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q1. (a) How will you justify the purchase of a CNC machine in the present global scenario? 12  
(b) Discuss the production characteristics under which CNC machines are most suited? 08
- Q2. (a) What is adaptive control? Discuss the different types of adaptive control. 12  
(b) What is a DNC system? Explain the structure of a DNC system. 08
- Q3. Conventional Structure of machine tools is not suitable for CNC machines. Discuss the major points of difference. 20
- Q4. (a) What is the importance of feedback in CNC machines? Discuss the working of a rotary encoder in CNC machine. 10  
(b) How are the axis identified in CNC machines? Explain with the example of a 5 axis machine centre. 10
- Q5. (a) How is step-less speed variation provided in CNC machines? 10  
(b) Discuss the role of computer in the CNC machines. 10
- Q6. (a) Explain the term work zero, tool zero and floating zero in CNC machines. 03  
(b) What are the methods used in CNC machines to minimize the tool change time. 05  
(c) Compare the characteristics of work holding devices used in CNC machines and conventional medium. 12
- Q7. Discuss the following :  
(a) Part programming formats. 03  
(b) Tool length and tool radius compensation. 05  
(c) Computer assisted part programming. 12
- Q8. Give the features of any CAD/CAM package. 20

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**