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**B.E. (Full Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2011**

Fifth Semester / Manufacturing Engineering

**MN 372 – CNC TECHNOLOGY**

(Regulation 2004)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

1. List any four control system used in CNC machines.
2. What are the draw backs of CNC system.
3. Why slant bed design preferred in CNC turning centre?
4. List the types of mounting methods of ball screws in CNC machine.
5. What are the advantages of AC spindle motor?
6. How the feed back devices are classified?
7. What is meant by tool nose radius compensation in CNC turning centre?
8. Write the "M" codes used for spindle operations in CNC machining centre.
9. List the important properties of carbide cutting tools.
10. What is meant by "presetting" of tools in CNC system?

**Part – B ( 5 x 16 = 80 marks)**

11. a) i) Write a CNC part program for the fig.1. Assume suitable spindle speed and feed. Use standard ISO G and M codes. (12)

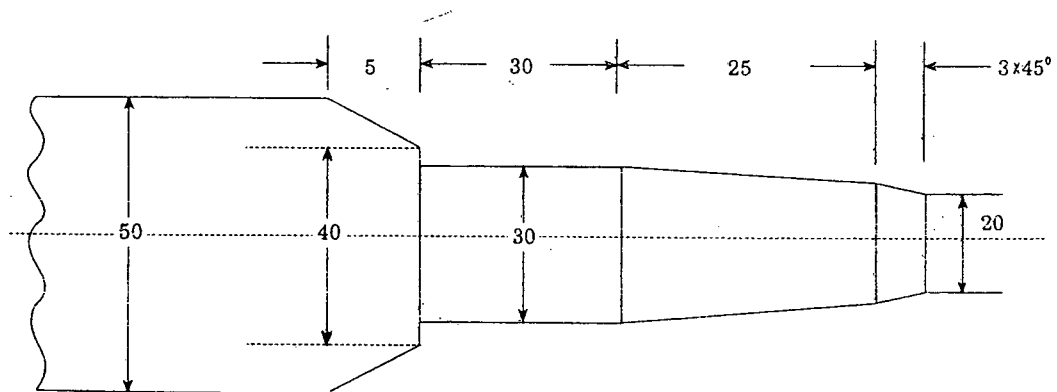


Fig.1

- ii) How computers are helpful in NC code generation? (4)
12. a) i) Describe the features of Turn-mill centre. (6)
- ii) With the aid of simple sketch, explain the working principle of CNC EDM machine. (10)

**OR**

b) Write a short notes on the following interpolations :

- i) Linear                      ii) Circular                      iii) Helical                      iv) Parabolic

13. a) i) What are the important features considered while CNC machine building? (8)

ii) With the simple sketch, explain the Linear Motion Bearing System in CNC. (8)

**OR**

b) i) List the advantages of ball screws over ACME screws. (6)

ii) How the recirculating ball screws are used in CNC system? Explain in detail. (10)

14. a) i) Explain with the aid of block diagram the spindle speed control system in CNC vertical machine centre. (12)

ii) List the advantages analog feed back devices. (4)

**OR**

b) i) What is Morie Fringes? (4)

ii) How the incremental linear transducer used in CNC machine tool for measuring the incremental system? Explain in detail. (12)

15. a) Write a short notes on

- i) Qualified and Semi Qualified cutting tools  
ii) CBN and PCD cutting tools

**OR**

b) i) Discuss the various activities in preventive maintenance of CNC machine tool. (12)

ii) List the working holding devices for rotating components and fixed components in CNC machine tool. (4)