No. of Printed Pages : 4 221751
Roll No. .....

5th Sem / Mechanical Engg, Mechanical (Tool & Die)

Subject : CNC Machines and Automation

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 G-codes are also known as

a) Preparatory codes b) Spindle speed codes

c) Tool selection codes d) Miscellaneous codes

Q.2 DNC stands for

a) Direct Numerical Complain

b) Direct Numerical Control

c) Direct Note control

d) Direct Note complain

Q.3 Which of the following code will give circular interpolation clockwise?

a) G00 b) G01

c) G92 d) G02

Q.4 Which of the following feedback device translate physical motion into electrical data?

a) Encoder

b) Transducer

c) Digital system monitoring

d) None of the above

Q.5 A robot's arm is also known as its

a) Actuator b) End effector

c) Manipulator d) Servo mechanism

Q.6 A stepper motor

a) Can control the angular displacement quit precisely

b) Cannot control the angular displacement precisely

c) Cannot be used for positioning of tables and tools is CNC machine tools

d) Cannot be readily interfaced with microprocessor based controller

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Name the components of a DNC system.

Q.8 Full form of PLC is_____

Q.9 Define active and passive transducer.

Q.10 LVDT stands for_____

Q.11 Define AGV.

Q.12 Define automation.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Write the main advantages and disadvantages of CNC machines.

Q.14 Differentiate between absolute and incremental coordinate system.

Q.15 Explain the concept of tool offsets in CNC.

Q.16 What are the main problem in electrical components of CNC machine.

Q.17 Write a short note on swarf removal in CNC machines.

Q.18 Write a short note on automatic tool changer and its significance.

Q.19 Explain the purpose of PLC.

Q.20 Explain the different types of automation.

Q.21 Define CIM. Write its benefits.

Q.22 What is subroutine ? Discuss its importance.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain following in detail.

a) Canned cycle

b) Cutter Radius compensation

Q.24 Explain the following in detail

a) FMS

b) Group Technology

Q.25 Explain the function and working of recirculating ball screw mechanism with a neat diagram.