

S. B. Roll. No.....

CNC MACHINES AND AUTOMATION
6th Exam/Mech./5380/Jun'2022
(For 2018 Batch Onwards)

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Fill in the blanks:

15x1=15

- a. _____ logic is used in PLC.
- b. Punched tape contains _____ for NC machine.
- c. MCU mounted on the machine tool is called _____.
- d. Maintenance of AC/DC motor involves correct _____.
- e. High carbon steel tools are suitable for low _____.
- f. Ceramic tools can be used for _____ cutting speeds.
- g. A typical ATC system has _____ swing arm.
- h. Miscellaneous operations are addressed by _____ codes.
- i. Subroutines do loops and fixed cycles are used for _____ programming.
- j. Potentiometers are _____ transducers.
- k. LVDT's convert _____ motion into electrical signal.
- l. Continuous path motion control system is helpful in _____.
- m. Main problem with pneumatic system is the _____ of air.
- n. Fixed automation is _____ for products with high demand.
- o. FMS relies on the principle of _____ technology.

SECTION-B

Q2. Attempt any six questions.

6x5=30

- i. What do you understand by Machine Control Unit?
- ii. What do you mean by PLC control?
- iii. Define tool offsets?
- iv. Write a short note on Automatic tool changer?
- v. Write a short note on safety and protection devices used in CNC?
- vi. What are sensors, actuators and transducers?
- vii. Discuss common problems in mechanical and electrical components of CNC machine?
- viii. Define automation. What are the various types of automation?

SECTION-C

Attempt any three questions.

3x10=30

- Q3.** Discuss the types of CNC's and enlist the profitable applications of CNC?
- Q4.** a) Write a short note on recirculating ball screw and nut assembly.
b) Write a short note on swarf removal.
- Q5.** Explain different types of programming formats?
- Q6.** Explain the construction and working of LVDT?
- Q7.** Write short notes on Group technology, CAD/CAM and CIM?