Q.29 What is Swarf removal, its main function in CNC machine.

Q.30 What is conventional NC machine, write its main component.

Q.31 Write the name of cutting tools used in CNC machine.

Q.32 Define part programming, name any G or M code used in programming.

Q.33 What is potentiometer with its advantage and application.

Q.34 Give the specification of the CNC machine.

Q.35 Difference between CNC and DNC machine.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the function and working of re circulating ball screw mechanism with a neat diagram.

Q.37 Write a short note on :
a) Transducer
b) Sensor

Q.38 Write short note on following:
a) Opto interrupt
b) Any five (5) NC word.

5th Sem / Branch : Mechatronics
Sub.: CNC Machines & Automation

Time : 3Hrs.   M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory   (10x1=10)

Q.1 In part programming Interpolation is used for obtaining_____ trajectory.
a) Helicoidal   b) Pentagonal
c) Triangular   d) Zig-Zag

Q.2 M-Codes are also known as.
a) Preparatory codes   b) Spindle speed codes
c) Tool selection code d) Miscellaneous codes

Q.3 The setting of tool to a specific length, away from the machine is called .
a) Tool on setting   b) Specific setting
c) Presetting   d) Post Setting

Q.4 A stepper motor
a) Can control the angular displacement quit precisely
b) Cannot control the angular displacement precisely
c) Both A and B
d) None of the above

Q.5 In servo motor input command is
a) Magnetic field b) Electrical pulses
c) Mechanical device d) Hydraulic Device
Q.6 Point to point system used for
a) Drilling b) Parting
c) Grooving d) Facing
Q.7 Which type of Feed back device used in CNC machine
a) Positional feedback b) Velocity Feed Back
c) Both A & B d) None of the above
Q.8 Full form of FMS
a) Flow machine system
b) Flexible manufacturing system
c) Flexible metal system
d) None of them
Q.9 In a DNC system
a) Many machine can be controlled simultaneously
b) Only a single machine controlled
c) NC machine cannot be controlled
d) None of the above
Q.10 In a CNC machine which code is used to change tools
a) M03 b) M04
c) M05 d) M06

SECTION-B
Note: Objective type questions. All questions are compulsory. (10x1=10)
Q.11 Define Degree of freedom
Q.12 What is the first law of Robotics.

Q.13 Give binary equivalent of 108.
Q.14 Expand SCARA robot.
Q.15 The axis perpendicular to work holding surface of a CNC machine is_____
Q.16 The input command in servo motor is in the form of _____.
Q.17 Write two application of CNC machine.
Q.18 Give the name of the PLC component.
Q.19 Write the name of motor which is used in CNC machine.
Q.20 Give two properties of the cutting tool.

SECTION-C
Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
Q.21 Write the main advantage and disadvantages of CNC machine.
Q.22 What is MCU? Write the function of MCU.
Q.23 Define slide ways, write its different types of slide ways.
Q.24 Difference between open loop and closed loop system.
Q.25 What is tool off set, how it is used in the CNC machine.
Q.26 Enlist any six major pneumatic component problem.
Q.27 Write a short note on FMS.
Q.28 What is group technology, discuss its importance.