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Roll No. ....    031755

**5<sup>th</sup> Sem / Mech, Mecatronics, Prod, T&D, CAD/CAM,  
Mech. (Fabrication Tech.), Mechanical Engg.  
(CAD/CAM Design&Robotics)**

**Subjec:- CNC Machines and Automation**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

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

Q.1 Full form of CAD

- a) Computer aided Design
- b) Computer aided Dimension
- c) Computer aided Drafting
- d) None of the above

Q.2 Do-loops always are implemented on

- a) Incremental mode    b) Absolute mode
- c) Both A and B mode    d) None of the above

Q.3 M00 code use for

- a) Spindle stop                      b) Coolant stop
- c) Programme stop                  d) End of programe

Q.4 Manual data input (MDI) os alos known as

- a) Controller                      b) Control panel
- c) Reader unit                      d) Machine control unit

Q.5 The setting of tools in advance at a place away from the machine tool is known

- a) Qualified tool                      b) Semi-qualifid tools
- c) Inserted bit tool                  d) Pre-set tools

Q.6 In close tools control system

- a) Feedback system is present
- b) Feedback system is not present
- c) Tool offset is present
- d) None of the above

Q.7 .....device works upon resistance .

- a) Potentiometer                      b) Tachometer
- c) LVDT                                  d) None of the above

Q.8 AGVs are material.....system that can be independently operated.

- a) Control                                  b) Handling
- c) Manufacturing                      d) None of the above

Q.9 Design feature of CNC tooling is that .

- a) Tool has to withstand higher cutting forces
- b) Variety of operations are to be done
- c) Flexibility
- d) All of the above

Q.10 A robot must always obey the order given to it by human beings, according Which of the following .

- a) Robotics third law    b) Robotics first law
- c) Robotics second law    d) None of the above

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## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Miscellaneous operations are addressed by ....codes.
- Q.12 The tool magazines are of.....and.....types
- Q.13 There are ....axis from which a tool is qualified.
- Q.14 Clearance in threads of lead screw cause....defect.
- Q.15 The two type of NC systems are ....and .....
- Q.16 Explain FMS.
- Q.17  $(27)_{10} = (?)_2$
- Q.18 Define O-joints in robotics .
- Q.19 Define AGV
- Q.20 G-41 code is used for cutter radius compensation from left. (True or False )

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Differentiate between NC and CNC machines.
- Q.22 What are the advantages and applications of stepper motor ?
- Q.23 Write a short note on tool room management .
- Q.24 Explain with neat sketch , opto-interruptors.
- Q.25 How will you define NC co- ordinate system ?

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- Q.26 Differentiate between absolute and incremental dimensioning with neat sketch.
- Q.27 Explain L.V.D.T ?
- Q.28 Describe What is stick-slip motion and its effect?
- Q.29 Enlist the various disadvantages of Automation .
- Q.30 Brief explain various law of robotics .
- Q.31 Compare CNC and DNC system .
- Q.32 Write the various Applications of Open loop control system .
- Q.33 What is a tool magazine ? Explain its types.
- Q.34 Write short note on
  - a) ASRS Systems      b) FMS
- Q.35 Explain Swing around MCU with diagram, also write its advantages .

## SECTION-D

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

- Q.36 Discuss Principle, construction and working of Automatic tool changer.
- Q.37 What are the common problems in CNC machines and their remedies ?
- Q.38 With the help of sketches, explain different types of slide - way .

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