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Roll No.....

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5th Sem, **Branch** : Mechanical/Mechatronics/Prod.

(T&D)/Fabrication/Auto

Subject : CNC M/C & Automation

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

- Q.1 In a DNC system. (CO-1)
a) Many machine tools can be controlled simultaneously.
b) Only a single machine tools can be controlled.
c) NC machine cannot be controlled.
d) None of the mentioned
- Q.2 In part programming, interpolation is used for obtaining _____ trajectory. (CO-2)
a) Helicoidal b) Pentagonal
c) Triangular d) Zig-zag
- Q.3 DNC stands for (CO-2)
a) Direct Numerical Complain
b) Direct Numerical Control
c) Direct Note Control
d) Direct Note Complain.
- Q.4 Full form of MCU is (CO-1)
a) Machine computer unit
b) Machine control unit
c) Machine control universal
d) Machine computer universal

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- Q.5 M-Codes are also known as (CO-2)
a) Preparatory codes b) Spindle speed codes
c) Tool selection codes d) Miscellaneous codes
- Q.6 Which is not the type of part programming format? (CO-2)
a) Fixed block format
b) Variable block format
c) Tab sequential format
d) Word address format
- Q.7 Which of the following code will give a linear interpolation movement? (CO-7)
a) G00 b) G01
c) G78 d) G65
- Q.8 Match the following (CO-7)
NC code Definition
P. M05 1. Absolute coordinate system
Q. G01 2. Dwell
R. G04 3. Spindle stop
S. G09 4. Linear Interpolation
a) P-2, Q-3, R-4, S-1
b) P-3, Q-4, R-1, S-2
c) P-3, Q-4, R-2, S-1
d) P-4, Q-3, R-2, S-1
- Q.9 The highest level of automation is found in (CO-6)
a) CNC machine tools
b) Automatic transfer machines
c) DNC machining system
d) Machine tools with electro hydraulic positioning and control
- Q.10 Choose the robot component from the

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following. (CO-6)

- a) Micro computer b) Coaxial cable
- c) Arm d) Software

SECTION-B

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

- Q.11 Expand PLC. (CO-1)
- Q.12 Describe CNC. (CO-1)
- Q.13 Write full form of ATC. (CO-3)
- Q.14 Describe slide ways. (CO-1)
- Q.15 Describe transducer. (CO-5)
- Q.16 Write use of opto - interrupters. (CO-5)
- Q.17 What is point to point motion? (CO-6)
- Q.18 Give description of G01. (CO-7)
- Q.19 What is first law of robotics. (CO-6)
- Q.20 Define degree of freedom. (CO-6)

SECTION-C

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

- Q.21 Write the main advantages and disadvantages of CNC machines. (CO-1)
- Q.22 Differentiate between absolute and incremental coordinate system. (CO-2)
- Q.23 List the main requirements of slide ways in a CNC system. (CO-1)
- Q.24 Explain the types of slide ways used in CC machines. (CO-1)
- Q.25 Write the main guidelines to be followed in the management of a tool room. (CO-3)

- Q.26 What are the main advantages of LVDT? (CO-6)
- Q.27 What is subroutine? Discuss its importance. (CO-7)
- Q.28 List the main activities performed by a programmer in making a part program. (CO-2)
- Q.29 Explain cutter radius compensation. (CO-7)
- Q.30 What are the common problems found in mechanical components of a CNC machines? (CO-5)
- Q.31 What is the use of oscilloscope in CNC machines? Give the name of its types. (CO-5)
- Q.32 Explain briefly on-line diagnostic. (CO-6)
- Q.33 What is FMS? What are its main components? (CO-6)
- Q.34 What is a robot? Explain in detail the various types of motions and joints in robots. (CO-6)
- Q.35 What are the main components of robot? Explain. (CO-6)

SECTION-D

Note: Long Answer type question. Attempt any two questions. (2x10=20)

- Q.36 What are the input media that can be used to feed data or programs in NC machines? Write the advantages and disadvantages of each. (CO-1)
- Q.37 What are sensors? What are the main components, characteristics and factors considered in selecting a sensor? Explain the classification of sensors also. (CO-1)
- Q.38 Explain canned cycle with an example. (CO-2,07)

Note : Course Outcome (CO) mentioned in the question paper is for official purpose only