Q.27 Discuss main problems in Mechanical components of CNC machines.

Q.28 Differentiate between point to point and continuous path motion.

Q.29 Explain Do Loops& Sub Routines in brief?

Q.30 Write short notes on Techometer.

Q.31 What are the different types of Robotics motions?

Q.32 Differentiate active & passive transducers.

Q.33 Explain the opto-interrupter.

Q.34 Discuss the problems in Implementing FMS.

Q.35 Classify cutting tools used in CNC machines.

SECTION-D

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

Q.36 What are Axis drives? Explain its different types in details.

Q.37 Explain the different types of slide ways used in CNC machines in details.

Q.38 Explain the term automation. Give advantage and disadvantage of it.

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Subject : CNC Machines& Automation

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SECTION-A

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

Q.1 In the block diagram of CNC machine, data processing and control loop are the part of

a) Machine Control Unit
b) Speed sensor
c) Input Device
d) Feedback system

Q.2 Drivers are also knows as

a) Actuators b) Controllers
c) Sensors d) None of the above

Q.3 Which kind of switches examine or detect the presence of an item or object without making contact with them?

a) Proximity Switches
b) Photo-electric, Switches
c) Mechanical Switches
d) None of the above

Q.4 CNC machines are not normally operated. They are controlled by means of a

a) Operator b) Program

c) Cam d) Any of the above

Q.5 A number of tools can be stored and brought into operation in CNC machines with the help of _____

a) Tool Holder
b) Headstock
c) Automatic Tool Changer
d) None of the above

Q.6 Compared to an open loop system a closed loop system is

a) More complex b) More reliable
c) More accurate d) All of the above

Q.7 The M-code used for the changing the tool in CNC machines is _____

a) M05 b) M02
c) M06 d) M13

Q.8 Which one of the following codes is not used for cutter radius compensation?

a) G41 b) G42
c) G90 d)G40

Q.9 _____ works under the principle of mutual induction & the displacement which is a non-electrical energy is converted into electrical energy.

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

Q.10 Flexible manufacturing system allows for :

a) Automated Design
b) Factory management
c) Quick & inexpensive product changes
d) Tool design & tool production

SECTION-B

Note: Objective types Questions. All Questions are compulsory. (10x1=10)

Q.11 Write the expanded form of APT.

Q.12 The punched tape contains _____ fof NC machine.

Q.13 Write the function of tachometer.

Q.14 Write the preparatory codes for Coordinate systems.

Q.15 Give the examples of active transducers.

Q.16 Write the names of different types of tool magazines.

Q.17 Write the names of work holding devices.

Q.18 Give examples of Mechanical Actuators.

Q.19 Define group technology.

Q.20 What is an end effector in Robot?

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 Differentiate between Encoder and Decoder.

Q.23 Why AC motors are preferred over DC motor drives for CNC machines.

Q.24 Write a short note on safety and protecting devices used in CNC machines.

Q.25 What is Potentiometer? Explain linear type Potentiometer.

Q.26 Distinguish fixed zero system from floating zero system.