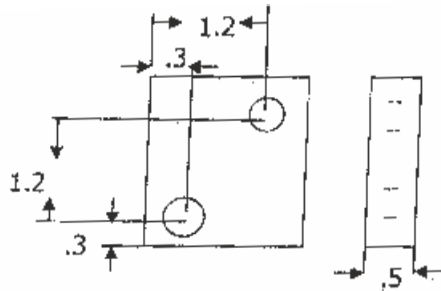


- Q.31 Write a small drilling program for the part in inches, shown below. Assume the speed and feed on your own: (CO-04)



- Q.32 Write short note on LVDT. (CO-03)
 Q.33 What functions are performed in Tool Room management? (CO-02)
 Q.34 Write short note on manufacturing of PCB and ICs. (CO-06)
 Q.35 Write common problems and their remedies in CNC machines. (CO-05)

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 recirculating ball screw mechanism with a neat diagram. (CO-01)
 Q.37 What is a sensor? Name different types of sensors. Explain any five. (CO-03)
 Q.38 Write different types of automation along with advantages and limitations. (CO-06)
 (Note : Course outcome/CO is for office use only)

No. of Printed Pages : 4
 Roll No.

202452

5th Sem. / Mechatronics

Subject:- CNC Machines and Automation

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 Several machine tools can be controlled by a central computer in (CO-01)
 a) NC b) CNC
 c) DNC d) CCNC
 Q.2 The axis perpendicular to work holding surface of a CNC machine is (CO-04)
 a) X b) Y
 c) Z d) W
 Q.3 _____ are not the components of flexible tooling? (CO-04)
 a) Tool magazine
 b) Tool changing mechanism
 c) Encoder
 d) Work holder
 Q.4 CNC machine lathes have built-in coordinate measuring system. The zero position on the coordinate system is called; (CO-041)
 a) Reference point b) Machine zero point
 c) Work zero point d) Program zero point
 Q.5 Point-to-point systems are used for _____ (CO-04)
 a) Reaming b) Parting
 c) Grooving d) Facing

- Q.6 Continuous path control system is suitable for which type of applications? (CO-01)
 a) Milling profile b) Reaming
 c) Drilling d) Broaching
- Q.7 An ATC plays a significant role in reducing; (CO-05)
 a) Tool change time b) Idle time
 c) Machine time d) Control time
- Q.8 Which of the following code will give circular interpolation anti-clockwise? (CO-04)
 a) G00 b) G01
 c) G02 d) G03
- Q.9 LVDT has got _____ number of windings. (CO-03)
 a) 04 b) 02
 c) 03 d) 08
- Q.10 In a CNC machine, which kind of switches examine or detect the presence of an item or object without making contact with them. (CO-06)
 a) Proximity switches
 b) Limit switches
 c) Photo-electric switches
 d) Mechanical switches

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Expand MCU. (CO-01)
- Q.12 A Punch tape contain _____. (CO-02)
- Q.13 CNC machine is mostly used for _____ production. (CO-02)
- Q.14 Re-circulating ball screw nut mechanism in CNC machine is used to _____. (CO-04)

- Q.15 Name any two types of NC program reader. (CO-04)
- Q.16 The function of slide-ways in CNC is to _____. (CO-04)
- Q.17 Automation increases the _____. (CO-06)
- Q.18 _____ Codes prepare the MCU to perform miscellaneous function. (CO-04)
- Q.19 Expand CAD/CAM. (CO-06)
- Q.20 Define actuator. (CO-03)

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Explain Close loop and open loop control system. (CO-03)
- Q.22 Define NC machine. Name different input devices used in NC machine. (CO-01)
- Q.23 Distinguish between G-codes and M-codes. (CO-04)
- Q.24 Write a finishing cut program of step turning. (CO-06)
- Q.25 Discuss any two swarf removal method in CNC machine. (CO-05)
- Q.26 Explain hydrostatic slide-ways. (CO-02)
- Q.27 Write short note on safety and guarding devices. (CO-05)
- Q.28 Explain the use of online fault finding diagnosis tools in CNC machine. (CO-05)
- Q.29 What are the special mechanical design features of CNC? (CO-02)
- Q.30 Discuss tool change cycle and canned cycles. (CO-04)