Q.33 Explain the basic components of CNC machines?

Q.34 Write a single cut part program for step turning for the given fig. 1

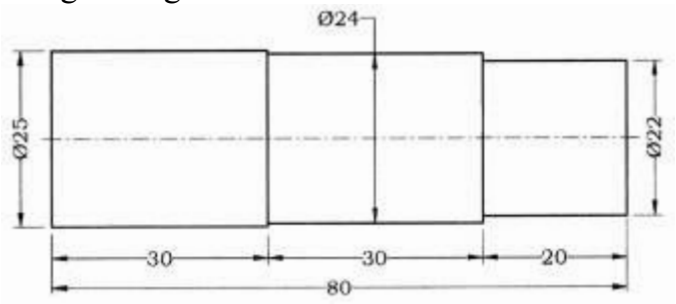


Fig.1

Q.35 Explain the emerging trends in automation.

SECTION-D

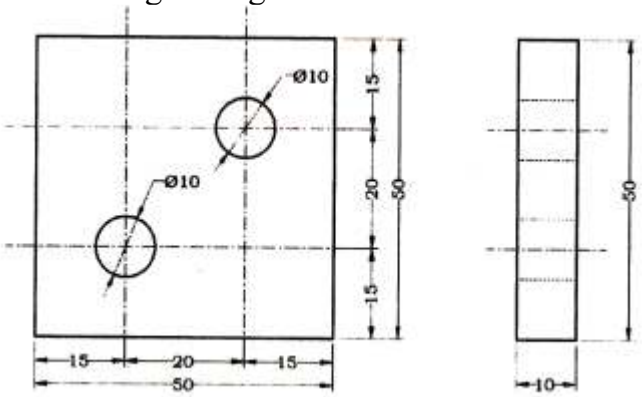
Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain with neat sketch, the recirculating ball and screw assembly?

Q.37 Describe the advantages and disadvantage of CNC machine over conventional medicine?

Q.38 Write a prt program for drilling 2 holes of diameter 10 mm as shows in given fig. 2

Fig.2



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6th Sem / Branch : EI

Sub. : CNC Machines and Automation

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The punch tape reader in a CNC machine is _____

a) Feedback system b) Input device
c) Program d) Driving system

Q.2 What is the full form if CNC?

a) Computer numerical control
b) Computer number control
c) Computer network control
d) Computer numbers count

Q.3 Several machine tools can be controlled by a central computer in _____

a) CNC b) DNC
c) NC d) VMC

Q.4 Computer will perform the data processing function in _____.

a) CNC b) DNC
c) VMC d) All of the above

Q.5 Which of the following is not be advantages of CNC machine?

a) Higher flexibility
b) Improved quality
c) Improved strength of the components
d) Reduced scrap rate

Q.6 Which kind of switches detect the presence of an object without making any contact with them?

a) Proximity switches
b) Mechanical switches
c) Reed switches
d) Photo-electric switches

Q.7 Which of the following code is used in programing for rapid traverse.

a) G01 b) G00
c) G02 d) G03

Q.8 The purpose of using recirculating ball screw and nut mechanism in CNC machine is_____

a) For higher surface finish
b) For carrying out up milling
c) To remove backlash
d) To reduce the setup time

Q.9 The main objective of an industrial robot is _____

a) To minimize the labour requirement
b) To increase productivity
c) To enhance the life of production machines
d) All of the above

Q.10 Cellular manufacturing is also knows as _____

a) Manufacturing Technology
b) Group Technology
c) Production Technology
d) None of the above

SECTION-B

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

Q.11 M-Code are also knows as _____.

Q.12 _____ code will give circular interpretation in clockwise direction.

Q.13 What does code G90 describes?

Q.14 _____ Axis is CNC machines is always taken along the main spindle of the machine?

Q.15 In _____ control system, a feedback device is used. (Open loop/ closed loop)

Q.16 What is the full form of PLC?

Q.17 _____ is a general purpose, programmable machine, possessing certain human like characteristics.

Q.18 The binary equipment of 27 is _____.

Q.19 An _____ is an independent and self-operated vehicle moves on d defined guide ways.

Q.20 The full form of FMS is _____.

SECTION-C

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

Q.21 State the laws of robotics?

Q.22 Explain any 5-NC words?

Q.23 Describe open loop and closed loop control system?

Q.24 Briefly explain cutter radius compensation?

Q.25 Write the main problems that are faced in CNC machine?

Q.26 Differentiate between encodes and decodes?

Q.27 Write short note on Group technology?

Q.28 Explain the terms FMS and CIM?

Q.29 How the mechanical faults can be prevented in CNC machine?

Q.30 Explain the use of subroutines and do loops in the main program?

Q.31 Describe various swarf removal methods used in CNC machine?

Q.32 Write short note on:-

a) LVDT b) ATC