50 mm, cutting speed v=40 m/min and feed = 0.1 Assume suitable data for depth of cut.

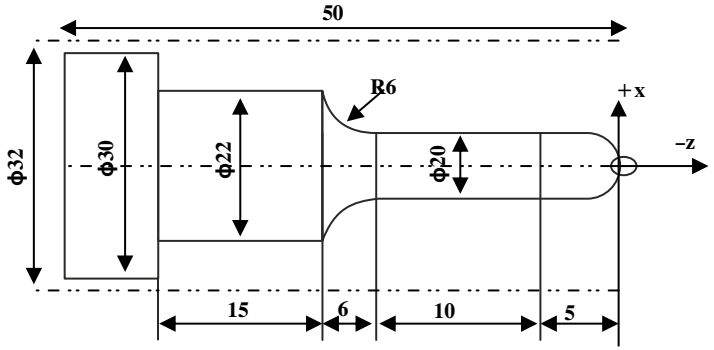

Figure (1)

Q.37 Explain the steps involved in Part Programming. Give the basic structure of a Part Program with Example.

Q.38 Write program in APT for following part, S=800 rpm and F=20m/min. Give finishing cut only.

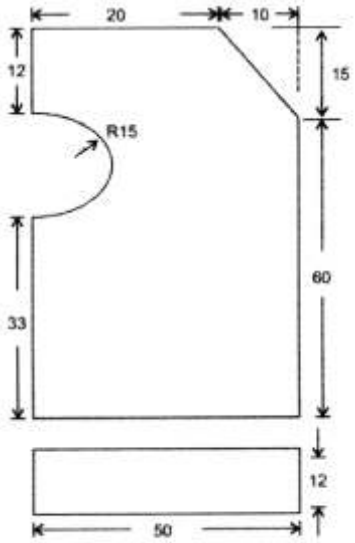

Figure (2)

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Roll No. .....

6th Sem / Branch : CNC
Sub. : CNC Part Programming

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Feed is measured in units of _____.
- a) Length/revolution
- b) Degree/revolution
- c) Length
- d) Velocity

Q.2 In part programming, interpolation is used for obtaining _____ trajectory.
- a) Zig-Zag
- b) Pentagonal
- c) Triangular
- d) Helicoidal

Q.3 Which operation is performed by point- to print system?
- a) Side milling
- b) Face milling
- c) Drilling
- d) Pocket milling

Q.4 What is part program?
- a) Instruction to machine
- b) Instruction to supervisor
- c) Instruction to manager
- d) Instruction to operator

Q.5 Which is not the type of part programming format?
- a) Fixed block format
- b) Variable block format
- c) Tab sequential format
- d) Word address format

Q.6 Which the following code will produce Dwell for a specified time?

a) G18 b) G04
c) G45 d) G65

Q.7 The tool change in CNC Machine is facilitated with the help of

a) FMS b) PLC
c) AGV d) ATC

Q.8 In a CNC program block, N002 G91 x40 Z40 _____ G02 and G91 refer to

a) Circular interpolation in counterclockwise direction and incremental dimension.
b) Circular interpolation in counterclockwise direction and absolute dimension
c) Circular interpolation in a clockwise direction and incremental dimension
d) Circular interpolation in clockwise direction and absolute dimension

Q.9 Repetitive CNC machine operations conveniently performing and execute with one command instead of programming of series of individual move called _____

a) Common cycle
b) Incremental programming
c) Canned cycle
d) None of the above

Q.10 APT is used

a) In teaching of the beginners
b) In CAM for NC machine tools
c) In inventory management
d) None of the above

SECTION-B

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

Q.11 Full form of APT is _____?

Q.12 The method by which the CPU calculates intermediate point is knows as _____.

Q.13 Which of the G-code is used in programming in absolute co-ordinates?

Q.14 Which of the G-code will give point to point movement?

Q.15 Which axis is not there is lathes?

Q.16 G70 code is used for_____?

Q.17 M-Code are used for _____or_____functions.

Q.18 Define Dwell.

Q.19 What is R-plante?

Q.20 Define canned cycle.

SECTION-C

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

Q.21 What is NC part programming. Write in brief about any one.

Q.22 Explain preparatory functions and miscellaneous functions with suitable examples?

Q.23 What do you understand by the terms "Bit" and "Byte"?

Q.24 What is M Code? Give any 4 code with their meaning.

Q.25 Write in brief about structure of an NC part program.

Q.26 What are the different methods to obtain Machine zero point? Explain any one.

Q.27 What is tab sequential format of programming?

Q.28 Explain absolute and incremental system.

Q.29 What is the reference tool method of toll offset?

Q.30 Explain circular interpolation with the help of a neat sketch.

Q.31 What is parametric subroutine? Explain with example.

Q.32 Explain diagrammatically the canned cycle G81.

Q.33 Give two examples of defining a plane in APT.

Q.34 Explain with diagram what is "drive surface" modifier in APT.

Q.35 State various automated programmed tool languages. explain any one.

SECTION-D

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

Q.36 Write a CNC program using appropriate G and M code to turn component as Shows in Figure. (1). Raw material: MS F 32 x