

Reg. No. :

--	--	--	--	--	--	--	--	--	--

**Question Paper Code: 58762**

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

One credit Course

Mechanical Engineering

15UME862 – CNC PROGRAMMING

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

Answer ALL Questions

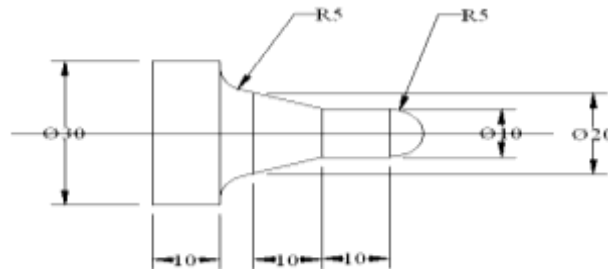
PART A - (10 x 1 = 10 Marks)

- The device, fed to the control unit of NC machine tool which sends the position command signals to sideway transmission elements of the machine, is called as  
(a) Controller (b) Tape (c) Feedback unit (d) None of the above
- On a CNC lathe the axes of cutting are  
(a) X and y axis (b) Y and z axes (c) X and z axes (d) None of the above
- What does the G in G-Codes stand for  
(a) Graphic (b) General (c) Geometric (d) Geometric
- What G- code are used to create arcs and circles? (Circular Arcs)  
(a) "GARC" will do it (b) G20 and G30  
(c) G02 and G03 (d) "CIRC" and "ARC" are the commands
- For a CNC machine absolute referencing is measured relative to the  
(a) X axis only (b) Y axis only  
(c) Origin (d) Last point where the tool was located
- Several machine tools can be controlled by a central computer in  
(a) NC (Numerical Control) machine tool  
(b) CNC (Computer Numerical Control) machine tool  
(c) DNC (Direct Numerical Control) machine tool  
(d) CCNC (Central-Computer Numerical Control) machine tool

7. During the execution of a CNC part program block NO20 GO2 X45.0 Y25.0 R5.0 the type of tool motion will be
- (a) Circular Interpolation – clockwise                      (b) Circular Interpolation – counterclockwise  
(c) Linear Interpolation    (d) Rapid feed
8. The machine tool, in which calculation and setting of the operating conditions like depth of cut, feed, speed are done during the machining by the control system itself, is called
- (a) Computer Numerical Control System                      (b) Direct Numerical Control System  
(c) Machining Centre System    (d) Adaptive Control System
9. The tool of an NC machine has to move along a circular arc from (5, 5) to (10, 10) while performing an operation. The centre of the arc is at (10, 5). Which one of the following NC tool path command performs the above mentioned operation?
- (a) N010 GO2 X10 Y10 X5 Y5 R5    (b) N010 GO3 X10 Y10 X5 Y5 R5  
(c) N010 GO1 X5 Y5 X10 Y10 R5    (d) N010 GO2 X5 Y5 X10 Y10 R5
10. Which example of expressing coordinates in Part programming? (G- code Coordinates)
- (a) Left 5, Back 3, Up 1    (b) 5X, 3Y, 1Z  
(c) X(5), Y(3), Z(1)    (d) X5Y3Z1

PART – B (1x 20 = 20 Marks)

11. (a) Write a CNC program for Multiple Turning using G and M code (20)



Or

- (b) Explain the following with neat sketch. (20)
- (i) Functions of a machine tool & Concept of numerical control.  
(ii) Limitations of CNC & Features of CNC.