Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION(S), DECEMBER 2019

Course Code: ME306

Course Name: ADVANCED MANUFACTURING TECHNOLOGY

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks. Marks

1 a) How carbonyls are useful in powder metallurgy? (5)

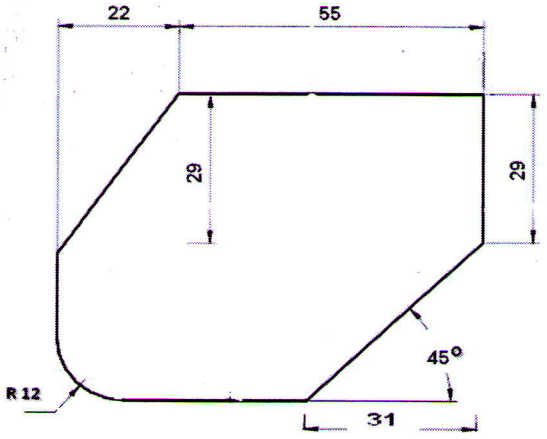
b) Differentiate between open loop and closed loop CNC with sketches (5)

2 Draw a PLC ladder logic diagram to get the reciprocating motion of a punching machine using following sequential operations. One of the two motors operates when power is supplied. Motor drives the punch to one side. When it completes the required movement in one direction, a limit switch detect the position of the punch. First motor is get deactivated. Second motor starts and moves the punch to the opposite direction. When it completes required movement in opposite direction, a second limit switch detects the position of the punch .Second motor is get deactivated and first motor is started again and the process continues so as to get a continuous reciprocating motion. Also draw the input and output diagrams. (10)

3 a) Explain the working of DDA integrator with schematic diagram and flow chart. (6)

b) A DDA contains 8 bit registers. The value of its *p* register is constant and P=150 and the clock frequency is 10240pps. Calculate the output frequency of DDA (4)

4 Write a manual part program for the given work shown in figure , material thickness is 20mm.Show the tool movement path and write the description of blocks (all dimensions are in mm) (10)



PART B

Answer any three full questions, each carries 10 marks.

5		Differentiate between EDM and Wire cut EDM with sketches	(10)
6		Describe the working of ECM with example and a neat sketch	(10)
7		Explain the working of IBM with sketch. Which are the factors affecting its MRR	(10)
8		Explain the working of AJM .Write its applications and advantages	(10)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	Compare conventional and high velocity forming methods	(5)
	b)	Explain different types of elastic body waves	(5)
10		Explain explosive forming techniques with figure	(10)
11		Explain electro hydraulic forming with a neat sketch. Write its applications	(10)
12	a)	What is magneto rheological fluid	(5)
	b)	Explain Magneto rheological finishing with sketches	(5)
13		Explain stereolithography process with sketches	(10)
14		What is Laser engineered net shaping? Write its advantages and limitations	(10)

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