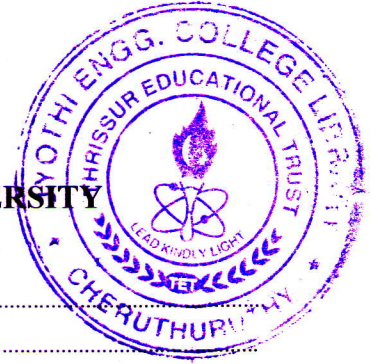


APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER



Q. P. Code : IAR0820311C-I

(Pages: 2)

Name:

Reg. No:

THIRD SEMESTER M.TECH. DEGREE EXAMINATION FEBRUARY 2021

Branch: Mechanical Engineering

Specialization: Industrial Automation and Robotics

08ME7311(C) Numerical Control of Machine Tools

Time: 2 hour 15 minutes

Max. Marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q. No.	Module 1	Marks
1. a	What is meant by multi-axis machining?	3
	Answer b or c	
b	Differentiate Hybrid CNC and Straight CNC.	6
c	Distinguish point to point and contouring in CNC.	6
Q. No.	Module 2	Marks
2. a	What are the techniques available to improve the resolution of feedback devices?	3
	Answer b or c	
b	Enumerate the various types of motion control systems used in CNC.	6
c	Explain the working principle of open loop and closed loop systems.	6
Q. No.	Module 3	Marks
3. a	What is tolerance analysis?	3
	Answer b or c	
b	Compare the advantages and disadvantages of hardware and software based interpolations.	6
c	What are the various parameters defining working motions of machine tools?	6

Q. No.	Module 4	Marks
4. a	Compare pre-set and qualified tools.	3
	Answer b or c	
b	Explain the criteria used in the design of CNC machine tools.	6
c	What are the various types of Machining Centres? Briefly explain them.	6

Q. No.	Module 5	Marks
5. a	Write the procedure of NC.	4
	Answer b or c	
b	Write a part program for drilling the part shown in Fig. 1. The plate thickness is 20 mm.	8

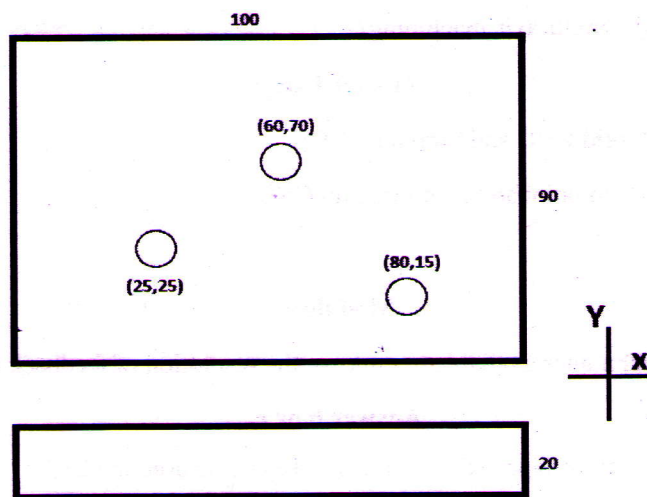


Fig. 1

c	What is tool length offset? Where do you store tool length offsets?	8
---	---	---

Q. No.	Module 6	Marks
6. a	What is DNC?	4
	Answer b or c	
b	Explain the generative CAPP system.	8
c	Write a short note on BTR system.	8