

R16

Code No: 137BD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, July/August - 2023

**CNC TECHNOLOGY
(Mechanical Engineering)**

Time: 3 Hours

Max.Marks:75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) List the features of NC Machine tools. [2]
- b) Explain open and closed loop systems. [3]
- c) What is the significance of tooling for CNC machines? [2]
- d) Label parametric programming. [3]
- e) List the limitations of APT programming. [2]
- f) Outline the significance of Automatic Tool Path generation. [3]
- g) Label the advantages of adaptive control. [2]
- h) List the disadvantages of DNC. [3]
- i) Outline hardware components of micro controller. [2]
- j) List the applications of PLC'S in CNC Machines. [3]

PART – B

(50 Marks)

2. Analyze classification of NC systems in detail. [10]
- OR**
3. Evaluate spindles, spindle bearings, measuring systems and tool mentoring systems.[10]
4. Explain coolant fed tooling system, modular fixturing, and quick change tooling system. [10]

OR

- 5.a) Discuss manual programming. [5]
- b) Illustrate point to point contour programming. [5]
6. Explain design and implementation of post processors in detail. [10]

OR

7. Summarize NC programming on CAD/CAM systems with example. [10]
8. Evaluate type of DNC systems with neat sketches. [10]

OR

9. Explain adaptive control of machining process for turning. [10]
- 10.a) Discuss embedded controllers. [5]
- b) Build the programming of Micro Controllers. [5]

OR

11. Explain working of programming mnemonics timers, internal relays and counters. [10]