

B. Tech Degree VI Semester Examination, April 2009**ME 606 CAD/CAM**
(2006 Scheme)

Time : 3 Hours

Maximum Marks : 100

PART A(Answer ALL questions)

(8 x 5 = 40)

- I. (a) Mention the various design related tasks employed in computer aided design process with the help of schematic representation.
 (b) Define Automation. Also mention the various levels of automation.
 (c) Give the various advantages of NC machines over conventional machines.
 (d) Explain the working of a rotary displacement transducer.
 (e) With necessary sketches explain the working of an Automatic Tool Changer.
 (f) Mention the types of static and dynamic errors in NC machines.
 (g) Differentiate accuracy and repeatability as applied to NC machines.
 (h) Write short note on Computer Integrated Manufacturing System.

PART B

(4 x 15 = 60)

- II. Explain with sketches the following :
 (i) Wire frame Modelling (ii) Solid Modelling
 (iii) Surface Modelling (15)

OR

- III. The table below defines the precedence relationship and element times for a new model. Construct the precedence diagram for this job. If the ideal cycle time = 1.1 min repositioning time = 0.1 min and uptime proportion is assumed to be 1.0. Use the largest candidate rule to assign work elements to stations .

Work Element	Te (min)	Immediate Predecessors
1	0.5	-
2	0.3	1
3	0.8	1
4	0.2	2
5	0.1	2
6	0.6	3
7	0.4	4,5
8	0.5	3,5
9	0.3	7,8
10	0.6	6,9

- IV. (a) With suitable sketches differentiate between open and closed loop controls used in NC machines. (10)
 (b) Mention the G code formats for the following operation indicating tool used and spindle speed. (5)
 (i) Linear interpolation
 (ii) Circular interpolation (Clockwise and Anticlockwise).

OR

- V. (a) Explain the various functions performed by CNC Machines. (8)
 (b) With necessary examples give a brief description of the different types of statements used in APT programming. (7)

- VI. (a) Explain adaptive control machining used in CNC machines with the aid of sketches. (10)
 (b) Differentiate between a Turning Centre and Machining Centre. (5)

OR

- VII. Write short notes on :
 (i) Working accuracy tests (ii) Process capability tests
 (iii) Automatic pallet changer. (5 x 3 = 15)

- VIII. Explain with necessary sketches the control approaches used in robots, utilizing servomotors as primary drives. (15)

OR

- IX. With necessary sketches explain the principle of working of a 3-component force sensor. (15)

