



SE-7467

B. E. - IV (Sem. VII) (Mech.) Examination

May / June - 2011

CAD-CAM

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दर्शावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. - IV (Sem. VII) (Mech.)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="CAD-CAM"/>	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="4"/> <input type="text" value="6"/> <input type="text" value="7"/>	<input type="text" value="Student's Signature"/>
Section No. (1, 2,.....) : <input type="text" value="1"/> <input type="text" value="2"/>	

- (2) Attempt all questions.
- (3) Figure to the right indicate marks.
- (4) Assume suitable data if necessary.
- (5) Use of the graph paper is allowed.
- (6) Answer to the two section must be written in separate answer books.

SECTION - I

- 1 (a) Answer any eight. 16
- (a) Classify various projectons.
 - (b) What are curve fairing techniques ?
 - (c) What is veiw port ?
 - (d) Explain revolve features.
 - (e) What is input devices used in CAD system ?
 - (f) Compare 2D and $2\frac{1}{2}$ D modelling.
 - (g) List out CAD softwares available in markets.
 - (h) What is geometric modeling ?
 - (i) Explain reflection transformaton.
 - (j) What is raster scan display technique ?

- 2 (a) Find the composite matrix for following operations, 10
performed in the following sequence :
- (1) Translate through 4 and 3 units along X and Y axis.
 - (2) Change of scale of X from 1:1 to 4 times and of Y from 1:1 to 3 times the original.
 - (3) Rotation about Z axis passing through the point (4, 3) by 30° in anticlockwise direction. What would be effect of above operations on a circle having unit radius with its centre originally located at (0, 0) ? Sketch and explain.

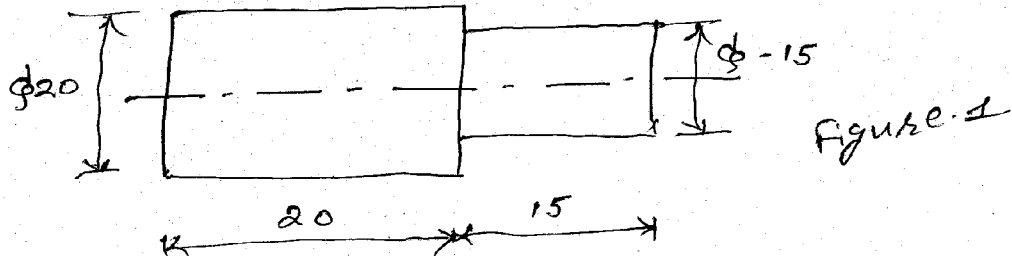
OR

- (a) Plot the Bezier curve having endpoints P0 (1, 3) 10
and P3 (7, 2). The other control points are P1 (5, 6)
P1(5, 6) and P2 (6, 0). Plot for values for $u = 0, 0.1, 0.2, \dots, 1$, if the characteristics polygon is drawn in sequence P0-P1-P2-P3.
- (b) "Matrix multiplication is non commutative". Explain 6
with suitable example.
- 3 Short notes : (Attempt any three) 18
- (a) Explain method of geometric modeling.
 - (b) Characteristics of Bezier curve.
 - (c) Compare trimetric, diametric, isometric projections.
 - (d) Generate a parabolic segment in a first quadrant for $1 \leq x \leq 4$. (generate at least 6 points).

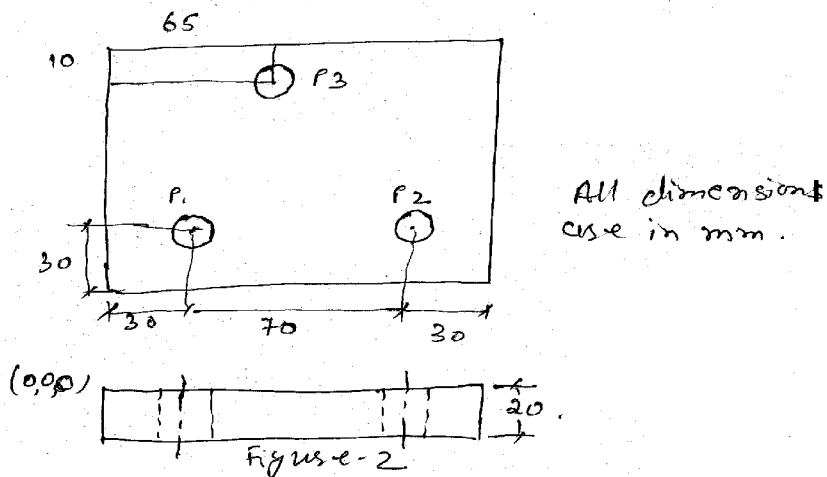
SECTION - II

- 4 (a) Answer the followings : 10
- (1) Explain point to point NC system.
 - (2) Define canned cycle for tapping.
 - (3) Explain C type NC machine.
 - (4) How axis are designated in NC machines?
 - (5) State application of NC and CNC technology.

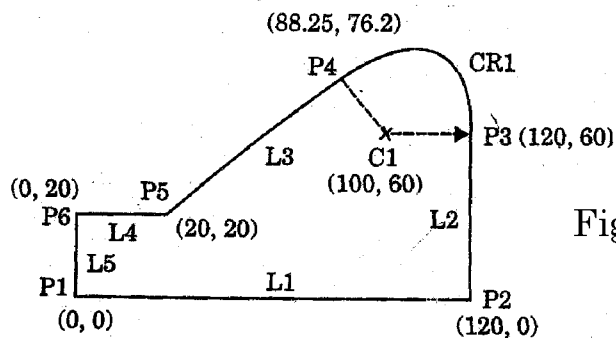
- (b) Write CNC part program for a shaft 25mm diameter, make a stepped shaft with dimension as shown in figure. Take speed = 3000 rpm, feed = 30 mm/min. 5



- (c) Write an APT program to drill holes in a plate as shown in figure-2, spindle speed 500 rpm, feed rate is 0.05mm/rev. 5



- 5 Attempt any three : 30
- (1) (a) Define PS, CS and DS with respect to APT.
 (b) For the plate shown in figure-3, write an APT program for end milling of its edges.



- (2) (a) Discuss DC motor and advantages of DC motor.
(b) List various feed back devices. Discuss linear variable differential transformer.
- (3) (a) Define analogue and digital systems. Discuss digital to analogue convertor.
(b) Define interpolator. Discuss linear interpolator with DDA algorithm.
- (4) (a) Sketch the route card with basic information on it.
(b) Write brief note on part coding using OPITZ system.
- (5) (a) Explain generalised procedure for variant type of CAPP.
(b) Discuss the concept of composite component.
- (6) Write short note on F.M.S.
