



Printed Pages : 4

TME-701

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0400Roll No.

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B. Tech.**(SEM. VII) EXAMINATION, 2008-09
COMPUTER AIDED DESIGN***Time : 3 Hours]**[Total Marks : 100*

- Note :*
- (1) All questions are compulsory.*
 - (2) Assume any missing data suitably.*

1 Attempt only **four** parts : **5×4=20**

- (a) What are the various display devices that are used for displaying information ? List their merits and demerits.
- (b) Explain any two of the following terms :
 - (a) Screen butter
 - (b) Scanning
 - (c) Video RAM
 - (d) OOP in C++.
- (c) Write the output of the following C-program with explanation :

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1

[Contd...

```
# include <stdio.h>
main ()
{
    int x;
    for (x = 1; x <= 10; x++)
    {
        if (x == 5)
            continue;
        print f ("%d", 'x');
    }
}
```

- (d) What are the activities of CAE ? Discuss.
- (e) Discuss various coordinate systems used in a CAD system.
- (f) Write a brief note on liquid crystal display.

2 Attempt any **four** parts : **5×4=20**

- (a) Digitise the line with end points (18, 8) and (2.5,15) using DDA algorithm.
- (b) Explain the midpoint circle algorithm for raster display.
- (c) Rotate an object defined by A (0,0), B (1,0), C (1,1) and D (0,1) by 45° about origin.
- (d) Explain the composite transformation.
- (e) Briefly discuss the plasma panel display.
- (f) Find the reflection matrix when the axis of reflection is line $y = zx$.

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2

[Contd...

- Answer any **two** parts :
- What are Bezier curves ? Discuss about the properties of such curves.
 - Write short notes on :
 - PHIGS and IGES standards
 - Features of a CAD workstation.
 - What is Constructive Solid Geometry (CSG) ? Discuss its features.

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7

- Attempt any **two** parts : 10×2=20
- Write a C/C++ program to design an axle.
 - Briefly explain how following commands work in Auto CAD :
 - Rotate
 - Array
 - Trim.
 - A mild steel shaft is required to transmit 100 kW at 500 rpm. The supported length of the shaft is 3m. It carries two pulleys each weighing 1500 N supported at a distance of 1m from the ends respectively. Determine the shaft diameter if allowable shear stress for shaft material is 60 N/mm².

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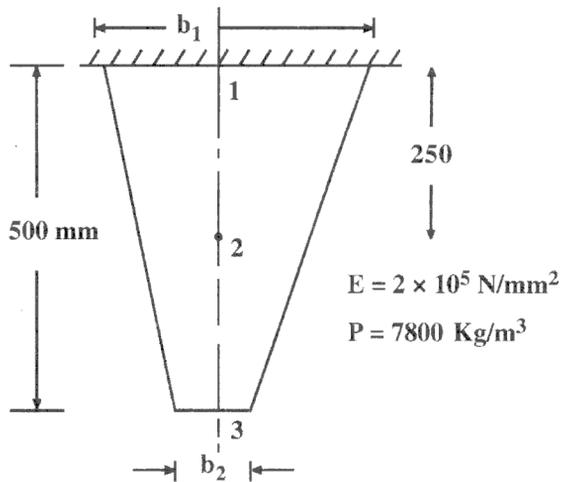
- Attempt any **two** parts : 10×2=20
- Determine the extension of bar shown in figure due to self weight. Given $b_1 = 180 \text{ mm}$, $b_2 = 80 \text{ mm}$, $t = 20 \text{ mm}$, Material of bar is steel with $E = 2 \times 10^5 \text{ N/mm}^2$ and $P = 7800 \text{ kg/m}^3$. Use the bar as two elements of equal length and self weight of each element acting of the nodes 2 and 3 :

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- (b) From the following data, obtain Y as a linear function of X using the method of least square :

X_i	1.0	1.6	3.4	4.0	5.2
Y_i	1.2	2.0	2.4	3.5	3.5

- (c) Find the solution to the equation

$$e^x - 3 \cos \pi x = 0 \text{ with in a tolerance } t = 0.02$$

using Newton's Raphson method.

