

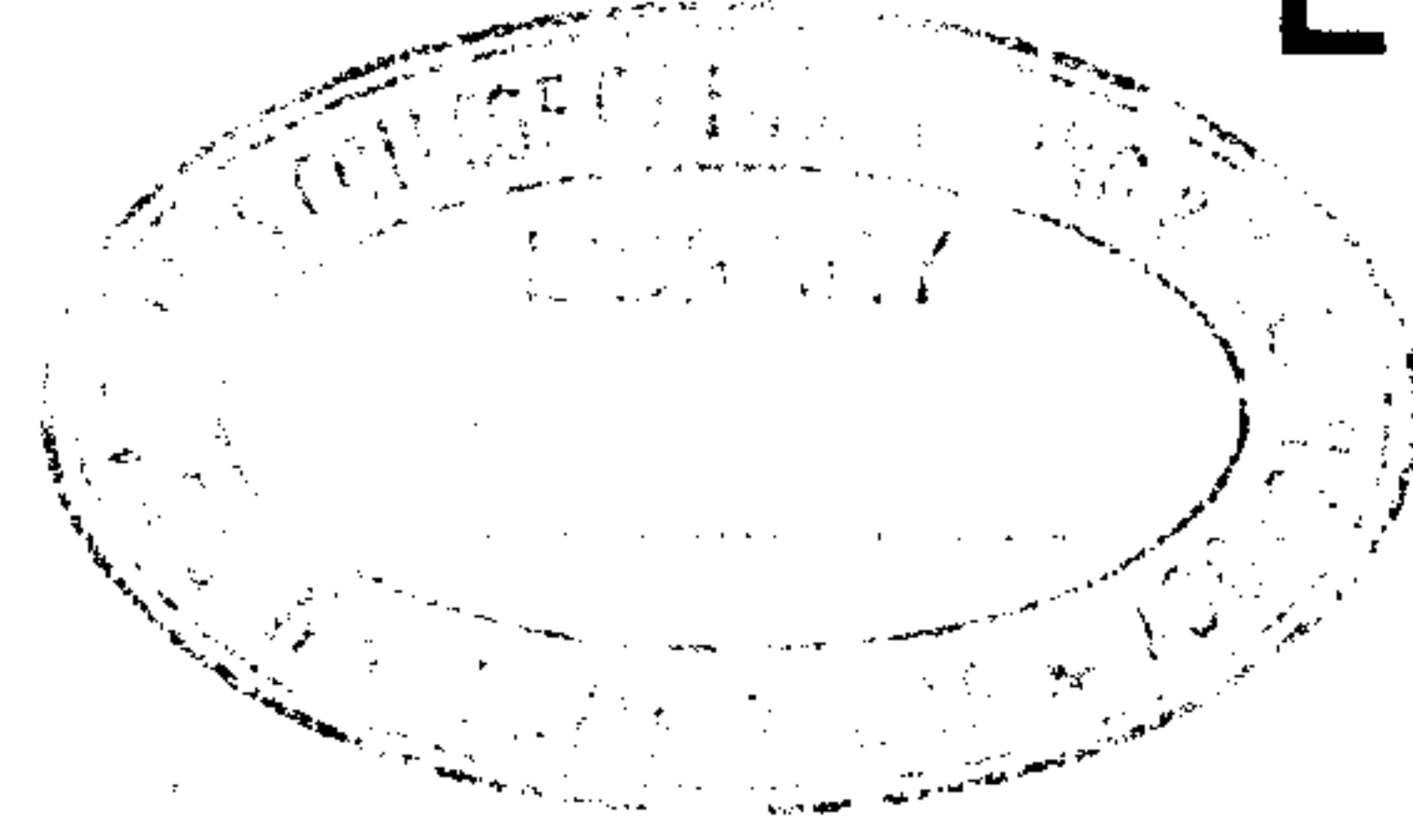


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Reg. No. :

Name :



**Sixth Semester B.Tech. Degree Examination, June 2018
(2008 Scheme)**

08.603 : COMPUTER AIDED DESIGN (MPU)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions :

1. Give an account of graphic input devices.
2. What are the requirements of a graphics package ?
3. What are the benefits of CAD ?
4. Describe the raster scan approach for generating image in computer graphics.
5. Compare drum plotter and flat-bed plotter.
6. How translation can be included in the concatenation 2D transformations ?
7. Define principle of minimum potential energy.
8. Describe plasma discharge displays.
9. What are shape functions ?
10. Explain the degree of freedom of an element. **(4×10=40 Marks)**

PART – B

Answer **one full** question from **each** Module.

Module – I

11. a) Explain the product cycle and CAD/CAM.
b) Compare the conventional and computer aided design process.

P.T.O.



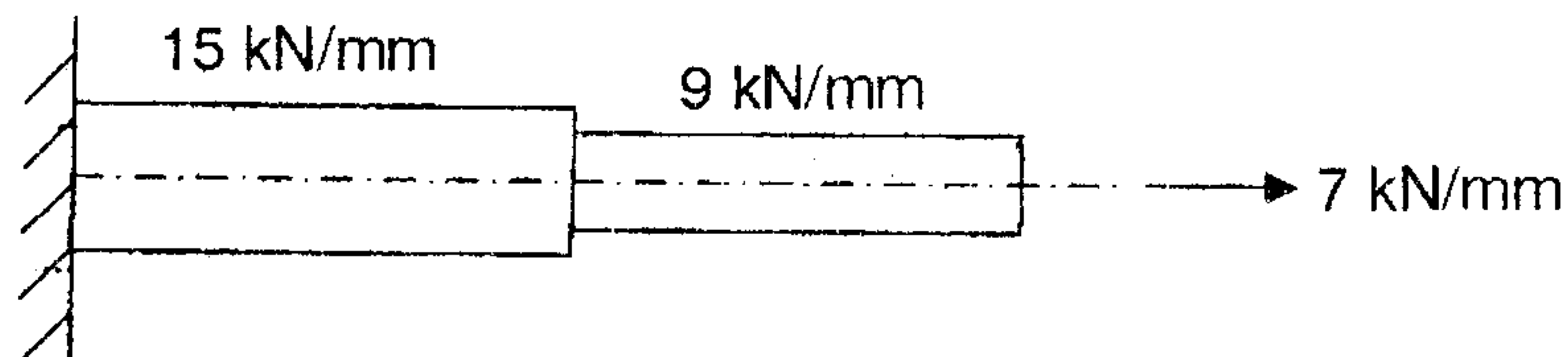
12. a) A line is represented by its end points (0, 2) and (3, 4) in a two-dimensional graphics system. Express the line in matrix notation and perform the following transformations on this line.
- Scale the line by a factor of 2.0
 - Scale the original line by a factor of 3.0 in the x direction and 2.0 in the y direction.
- b) A line in two-dimensional space has end points defined by (1, 1) and (1, 3). It is desired to move this line by a series of transformations so that its end points will be at (0, 1) and (0, 5). Describe the sequence of transformations required to accomplish the movement of the line as specified. Write the transformation matrix.

Module – II

13. a) How 2D transformations are represented in a homogeneous coordinate system? What is the advantage in using homogeneous coordinate system?
- Explain any circle generating algorithms with suitable example.
14. a) Explain Bresenham's line algorithm for generating lines.
- Describe different types of 3D geometric modeling techniques.

Module – III

15. A triangle is defined in a two-dimensional ICG system by its vertices (0, 1), (0, 3) and (2, 3). Perform the following transformations on this triangle.
- Translate the triangle in space by 3 units in the x-direction and 3 units in the y-direction.
 - Scale the original triangle by a factor of 2.0 in the x-direction and 3.0 in the y-direction.



16. Two thin rods of stiffness 15 kN/mm and 9 kN/mm are connected as shown above and are subjected to a load of 7 kN at right end. Determine the displacements at the nodes.

(20×3=60 Marks)