

III B. Tech II Semester Supplementary Examinations, November/December-2016
INTERACTIVE COMPUTER GRAPHICS
(Mechanical Engineering)

Time: 3 hours

Maximum Marks: 70

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- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

PART -A

- 1 a) Explain the working of Three-Dimensional Viewing Devices. [4M]
b) What is meant by Shear Transformation of an object? [4M]
c) What is meant by clipping? [3M]
d) What is meant by a translation vector? [3M]
e) Explain Constant-Intensity Shading. [4M]
f) What is meant by output primitives? [4M]

PART -B

- 2 a) Explain the different categories and types of Flat-Panel Displays. [8M]
b) What is meant by reflection of an object? How do we achieve i) reflection of an object about the x-axis ii) reflection of an object about the y-axis. [2M]
[3+3M]
- 3 a) Explain how a two-dimensional rotation is applied to an object. [12M]
b) What are the two categories of representation schemes for solid objects? [4M]
- 4 a) Explain Gouraud Shading. [4M]
b) Write the vector generation algorithm for line drawing. [12M]
- 5 Explain about Point Clipping and Line Clipping. [16M]
- 6 Write and explain the depth-buffer algorithm which is used to detect visible surfaces. [16M]
- 7 a) Explain how a point is translated from position $P=(x,y,z)$ to position $Q=(a,b,c)$ in a three dimensional homogeneous coordinate representation. [8M]
b) Explain the various Motion Specifications that can be used in an animation system. [8M]

