Pokhara University

|  |  |  |
| --- | --- | --- |
| Level: Bachelor | Semester: Spring | Year : 2012 |
| Programme: BE | | Full Marks: 100 |
| Course: Computer Graphics | | Pass Marks: 45 |
| Time : 3hrs. |

|  |
| --- |
| *Candidates are required to give their answers in their own words as far as practicable.* |
| *The figures in the margin indicate full marks.* |
| Attempt all the questions. |

|  |  |  |
| --- | --- | --- |
|  | 1. Explain the need and use of graphics in the field of IT. 2. What is Video Controller? Explain the basic video-controller refresh operations with proper block diagram. | 7  8 |
|  | 1. Enlist different types of input devices. Describe touch panel as an input device. 2. Derive the Bresenham’s line algorithm for |m|>1.   OR  Clip the line P1P2 with P1(0,120) and P2(130,5) using Cohen-Sutherland Line Algorithm. Given that rectangular window ABCD has end-points A(10,100), B(150,100), C(150,10) and (10,10). | 7  8 |
|  | 1. Digitize a standard form circle using midpoint algorithm having radius of 10 unit. 2. Explain transformation of 2D object to screen viewing with matrix derivation.   OR  Calculate viewing transformation matrix with given information: given triangle with sides A(5,5) B(15,5) C(10,10), given window coordinate (7,4)(13,4)(13,8), (7,8) and view port location is (17,7)(18,8)(17,8) ? | 7  8 |
|  | 1. Scale the triangle with vertices A (0, 0), B (1, 1), C (5, 2) to half its size while keeping B (1, 1) fixed. 2. Briefly explain the different graphics file format. | 8  7 |
|  | 1. What do you mean by projection? Differentiate between parallel and perspective projection. 2. Write down the Drawbacks of Backface Detection. Explain Z-buffer Algortim. | 7  8 |
|  | 1. Explain Gouraud shading method. How is it different from Phong shading method? 2. Explain the things to be considered while developing a project. | 8  7 |
|  | Write short notes on: (Any two)   1. Differentiate between Raster-Scan and Random-Scan system. 2. Explain different file formats. 3. Polygon Table. | 2×5 |