Nepal College of Information Technology

**Unit Test**

Fall 2013

Program : BE CE/ELX Time : 2 hrs

Semester : (V) FM : 50

Subject : Computer Graphics PM : 25

* *Candidates are requested to give their answer as far as practicable in their own words.*
* *The figure in the margin indicates the full marks*
* ***Attempt ALL question***

|  |  |  |
| --- | --- | --- |
| 1. a)  b) | Trace the history of Computer Graphics and mention its usage in various fields.  If it takes 10 nanosecond to access a single pixels from a frame buffer and glow the pixel on the screen with a total resolution of 640 x 480. Will this access rate produce a flickering effect? | 10 |
| 2. a)    b) | A raster system can produce a total number of 1024 different levels of intensities from a single pixel composed of red, green and blue phosphor dots. If the total resolution of the screen is 1280 x 1024, what will be the required size of frame buffer for the display purpose?  Explain the components used in VDT and RDT for generating graphical output? | 10 |
| 3. a) | Derive equations for Bresenham’s line drawing algorithm for slope |m|<1?  How can this algorithm be modified to draw lines with slope |m| >1?  OR  Derive equations for Mid point circle algorithm. Digitize a circle with radius 12 using mid point circle algorithm. | 10 |
| 4. a)    b) | Digitize a line with end points A(11,9) and B(29,17) using Bresenham’s Line drawing algorithm.  Differentiate between Sonic Tablet and Sonic Touch Panel, Resistive tablet and Light Pen. | 10 |
| 5.  a)  b)  c) | Write short notes:(*any one*)  Resolution and refresh rate  Scan Conversion  (b) Video controller | 5+5 |

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