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SARDAR PATEL UNIVERSITY
M.Sc. (BioInformatics) -Third Semester Examination
PS03CMBI04: Graphics and Animation
7ᵗʰ December, 2012

Time: 2:30 p.m. To 5.30 p.m.   **Marks: 70**

Q1. **Do as directed. [Any THREE]** [15]
[A] What is computer graphics? Discuss at least three applications of computer graphics in the field of bio-informatics.
[B] Write a short note on Shadow mask method.
[C] Write a midpoint circle drawing algorithm.
[D] Magnify the triangle with vertices A(0,0), B(1,1) and C(5,2) to thrice its size and find new set of vertices.

Q2. **Do as directed.** [12]
[A] What is an attribute? Explain any two attributes about line.
[B] Discuss the basic 2-dimensional geometric transformation Translation in short.
[C] What is clipping? Explain Cohen – Sutherland line clipping algorithm.

Q3. **Do as directed.** [8]
[A] Write short note on character generation
[B] Write necessary steps to rotate a three dimensional object about Y-axis.

Q4. **Do as directed.** [15]
[A] Explain briefly the different stages of image processing and analysis scheme.
[B] Write short note on: Features of Authoring package.
[C] Discuss the process of converting color value in CMY color model to YIQ color model.

Q5. **Do as directed.** [12]
[A] Explain briefly 3-dimensional animation process.
[B] Write the difference between Multimedia Programming and Multimedia Authoring.
[C] Suppose M be the gray level of input image, which has to be transformed to L by linear stretching. Then L is the gray level of the output image. Let N_i and N'_i are the number of pixel having i-th gray level in the input and the output images respectively. Suppose for an 8-level image we have following frequency table for the input gray levels, then using linear stretching find the frequency table for the output gray levels.

i	0	1	2	3	4	5	6	7
N_i	0	0	k	q	m	n	p	0

Q6. **Do as directed.**
[A] Define: Splicing, Dithering, Multimedia Authoring [3]
[B] Write the features of PNG graphics file format. [2]
[C] Explain any four good features of a graphics package Flash. [3]

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