Exam Code: 107206   Paper Code: 6193
(60)

Programme: Bachelor of Computer Applications
Semester-VI

Course Title: Computer Graphics

Course Code: BCAL-6111

Time Allowed: 3 Hours   Max Marks: 60

Note: There are eight questions of equal marks (12 marks each). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

Section A

1. Explain the term Computer Graphics. Also explain its applications.   (12)
2. a) Describe the working of CRT.   (8)
   b) Differentiate between Raster and Random scans technologies.   (4)

Section B

3. Find the points to be plotted for drawing a line using Bresenham's line drawing algorithm whose end points are (2,3) and (8,6)   (12)

4. Write algorithm of Mid point circle drawing along with its derivation. (12)

Section C

5. Consider the triangle A(0,0), B(2,0) and C(1,1), perform the following operations: (12)
   a) Rotate the above triangle by 30° about the point P (1,-1).
   b) Reduce the above triangle by half of its size by keeping C(1, 1) fixed.

6. Explain Cohen Sutherland line clipping algorithm with example. (12)

Section D

7. Explain various 3D transformations in detail. (12)

8. Explain the following
   (a) Parallel VS Perspective projections
   (b) View Confusion
   (c) Vanishing points (3*4 = 12)

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(60)   Paper Code: 6194

Programme: Bachelor of Computer Applications
Semester-VI

Course Title: Software Engineering

Course Code: BCAL-6112

Time Allowed: 3 Hours

Max Marks: 60

Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question of equal marks (12 Mark).

Section A

1. What do you mean by Software? what are the characteristics of software? Explain different phases of software development life cycle.
   (12)

2. Explain Spiral Model in detail. What are the advantages of using spiral model?
   (12)

Section B

3. (a) Draw and explain Data Flow Diagram for the student management system, the student's complete information is being analyzed. It is picturized to have an

overview of faculty, courses, semester, and students showing the whole system as a single high-level process with its relationship to externalities including courses, attendance, timetable, etc.

(b) Explain SRS Document? What are the characteristics and components of a good SRS Document?　　(6X2)

4. Explain the following:
   1. Coupling & Cohesion
   2. Requirement Gathering Tools　　(6X2)

Section C

5. (a) Discuss the intermediate Constructive Cost Estimation Model.　　(5)

   (b) A new project with estimate 500 kilo lines of code semi-detached system has to be developed. Project manager has a choice of hiring from 2 pools of developers first very highly capable with very little experience in programming language or Developer of low quality but a lot of programming language experience which is better?　　(7)

Cost Drivers	Very Low	Low	Nominal	High	Very High
Applications Experience	1.29	1.13	1.00	0.91	0.82
Programming language and tool experience	1.14	1.07	1.00	0.95	

Mode	a_i	b_i	c_i	d_i
Organic	3.2	1.05	2.5	0.38
Semi-Detached	3.0	1.12	2.5	0.35
Embedded	2.8	1.20	2.5	0.32

6. (a) Difference] between Line of Code and Functional Point metrics.　　(4)

   (b) Explain the method of computing Function-Point Quality Metric when all the complexity adjustment factor and weighing factor are average Consider a project with the following functional units:　　(8)

   Number of user inputs = 50
   Number of user outputs =40
   Number of user enquiries= 35
   Number of user files = 5
   Number of external interfaces = 4

Measurement parameter	Weighting factor		
	Simple	Average	Complex
Number of user inputs	3	4	6
Number of user outputs	4	5	7
Number of user inquiries	3	4	6
Number of files	7	10	15
Number of external interfaces	5	7	10

7. What are the Coding Standards and Guidelines? How to review the code? (12)

8. Explain:
   (a) Black Box Testing
   (b) System Testing (6X2)