Exam. Code : 107206
Subject Code : 1764

Bachelor of Computer Application (BCA) 6th Semester

COMPUTER GRAPHICS

Paper—I

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt any **five** questions. All questions carry equal marks.

1. Explain the applications of Computer Graphics in the entertainment Industry. 15
2. List different display devices. Explain the working of CRT monitors. 5,10
3. List various line drawing algorithms. Explain Bresenham's line drawing algorithm. 15
4. Write the algorithm to draw an ellipse. Convert this algorithm to a C program. 8,7
5. What is the significance of transformation ? Explain basic transformation operations. 5,10
6. What is Projection ? What are the different types of projections ? Discuss their applications. 2,8,5
7. Explain 3D transformation with details of the matrix representations at various stages. 15
8. List and explain graphics related functions available in C language. 15

Exam. Code : 107206
Subject Code : 2154

Bachelor of Computer Application (BCA) 6th Semester

SOFTWARE ENGINEERING

Paper–II

Time Allowed—3 Hours] [Maximum Marks—75

Note :– There are **eight** questions in the question paper. The candidates are required to attempt any **five** of them. Each question carries **15** marks.

1. (a) The project team developing a new system is experienced in the domain. Although the new project is fairly large, it is not expected to vary much from applications that have been developed by this team in the past. Which process model would be appropriate for this type of development ?

   (i) Prototyping

   (ii) Waterfall

   (iii) V-model

   (iv) Spiral

   Justify your answer also explaining why other models not chosen by you are unsuitable. 10

   (b) What is software ? Explain various characteristics of good software. 5

2. (a) What are the various size and time estimations measures in project management ? Explain in detail. 8

(b) What is SRS ? What are the characteristics and components of a good SRS document ? 7

3. (a) Define cyclomatic complexity and all different methods to calculate cyclomatic complexity. For the following code segment, draw the control flow graph, compute the cyclomatic complexity value and identify the independent paths.

```
Max (a, b, c)
{   int i, j = 0;
    Sum = 0;
    if (a > b) then
    if (a > c) then
        print ("a as the largest")
    else
        print ("c is the largest")
    else
    if (b > c) then
        print ("b is the largest")
    else
        print ("c is the largest")
}
```

10

(b) Differentiae between black box testing and white box testing. Explain in detail about any one testing tool. 5

4. (a) Explain the role of functional independence, coupling and cohesion with respect to modular design. 8

(b) What is the difference between program and software ? Write out the reasons for the failure of Waterfall model. 7

5. (a) Who should do quality assurance ? Mention the goals of software quality group and also norms for formal technical review meeting. 8

(b) List the various risks associated with software development and explain the measures to overcome. 7

6. (a) What is software engineering ? Discuss various Fourth generation techniques for software engineering. 8

(b) Use COCOMO–II model to estimate the effort required to build software for a simple E-shopping application that provides 18 screens (simple), 15 reports (medium) and will require approximately 60 software components (difficult). Assume the developer's experience/capability is high and environment maturity/capability is very high. Use the application composition model with object points. 7

7. (a) What is the difference between top-down and bottom-up approach of coding ? How internal documentation is performed in coding process ? 8

(b) What is user acceptance testing ? Explain different kinds of user acceptance testing. Why is it necessary ? 7

8. Write notes on the following :

(a) Information hiding

(b) PDL and Logic/Algorithm design

(c) Structured programming. 5+5+5