PURBANCHAL UNIVERSITY
2014

Bachelor in Information Technology (B.I.T.)/Fifth Semester/*Chance*

Time: 03:00 hrs. Full Marks: 80 /Pass Marks: 32

BIT315CS: Computer Graphics

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions. 2×12=24

1. What do you mean by clipping? Explain the Cohen Sutherland line clipping algorithm.
2. Discuss Bresenham's line drawing Algorithm with proper derivation.
3. (a) How is color generated in color monitor? Discuss.
   (b) Explain Raster-Scan system architecture.

Group B

Answer SEVEN questions. 7×8=56

4. What is computer graphics? Discuss the applications of computer graphics in brief.
5. Explain window to viewport transformation in 2D.
6. How plane-equation method is used as visible surface detection technique?
7. Discuss Gouraud shading method used for rendering a three dimensional object.
8. Explain about general pivot point scaling for two dimensional objects in matrix form.
9. What is 3-D transformation? Explain different types of 3-D

10. What is mouse? Discuss different types of mouse.
11. What is projection? Explain its types in brief.
12. Write short notes on any TWO:
    (a) Bezier curve
    (b) 2D-translation
    (c) Tablet

PURBANCHAL UNIVERSITY
2016

Bachelor in Information Technology (B.I.T.)/Fifth Semester/ *Final*

Time: 03:00 hrs. Full Marks: 80 /Pass Marks: 32

BIT375CO: Computer Graphics *(New Course)*

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions. 2×12=24

1. Discuss Midpoint circle drawing algorithm with an example in detail.
2. Why hidden surfaces and lines algorithm is needed? Explain scan-line and backface detection algorithm in detail.
3. What is two dimensional transformation? Discuss pivot point rotation and fixed point scaling in detail

Group B

Answer SEVEN questions. 7×8=56

4. Explain the differences between vector and raster display system.
5. Discuss different color manipulation technique in brief.
6. What is projection? Explain different types of projection in brief.
7. What is 3 dimension transformation? Discuss 3D rotation with an example.
8. Explain Cohen-Sutherland line clipping algorithm in brief.
9. Explain Gouraud shading surface rendering technique. Also write its advantage and disadvantages.
10. Discuss the algorithm to simulate specular reflection.
11. Explain the application of computer graphics in different areas.
12. Write short notes on any TWO:
    (a) Animation (b) Bezier curve
    (c) Light pen (d) 2D translation

...n Information Technology (B.I.T.)/Fifth Semester/ *Final*

...:00 hrs. Full Marks: 80 /Pass Marks: 32

...5CS: Computer Graphics

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...re in the margin indicate full marks.

Group A

...swer TWO questions. 2×12=24

1. What do you mean by Computer Graphics? List different application of it and explain each in brief.
2. Write and derive the midpoint circle drawing algorithm with necessary expression.
3. What are hidden line and hidden surface removal techniques? Explain Z-buffer method.

Group B

...swer SEVEN questions. 7×8=56

4. Differentiate between Raster and Random scan system.
5. What do you mean by projection? Explain parallel projection.
6. Explain different types of 2-dimension transformation in brief.
7. Define the terms Ambient light and Specular reflection and diffuse reflection.
8. Discuss 3-dimension rotation transformation in brief.
9. What is Color CRT? Explain Shadow mask method with diagram.
10. Discuss the Phong shading method.
11. How window to view port conversion is carried out? Show each step with matrix form.
12. Write short notes on any TWO:
    (a) Polygon Representation
    (b) Touch Screen
    (c) B-Splines

PURBANCHAL UNIVERSITY
2018

Bachelor in Information Technology (B.I.T.)/Fifth Semester/*Final*
Time: 03:00 hrs. Full Marks: 80 /Pass Marks: 32
BIT375CO: Computer Graphics *(New Course)*

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions. **2×12=24**

1. Explain Mid-point circle drawing algorithm with proper illustrations.
2. Define window, viewport and explain how window to viewport transformation is performed with suitable example.
3. Explain the Gouraud and Phong shading techniques for polygon-rendering.

Group B

Answer SEVEN questions. **7×8=56**

4. What is computer graphics? Write its applications fields.
5. What is a random the scan system? Explain the operation of random scan with architecture.
6. What is frame buffer? Explain shadow mask method with figure.
7. Why hidden line and hidden surface removal techniques are required? Explain Z-buffer method.
8. Mention the need of shading in data visualization. Explain ambient, diffuse and specular reflection.
9. List all the input devices and explain light pen in detail.
10. List different graphical file format and explain the need of machine independent graphical language.
11. What is transformation? Explain 2-d rotation with illustration.
12. Write shot on any TWO:
    (a) Projection
    (b) 3D-translation
    (c) Animation

PURBANCHAL UNIVERSITY
2017

Bachelor in Information Technology (B.I.T.)/Fifth Semester/*Final*
Time: 03:00 hrs. Full Marks: 80 /Pass Marks: 32
BIT375CO: Computer Graphics *(New Course)*

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions. **2×12=24**

1. Discuss a midpoint circle algorithm assuming that the start position is (0, r) and the circle moves in clockwise direction. Also write the algorithm.
2. Explain random scan display technology and raster scan display technology along with the necessary block diagrams.
3. Describe different color manipulation technique in detail.

Group B

Answer SEVEN questions. **7×8=56**

4. Briefly describe how computer graphics finds its applications in different fields of science and engineering.
5. Explain Bresenhams line drawing algorithm in brief.
6. Discuss windows to viewport transformation in detail.
7. Explain Cohen Sutherland line clipping algorithm in brief.
8. What do you mean by projection? Explain its types.
9. How do you perform 3D rotation about an axis that is not parallel to one of the coordinate axis? Explain the basic steps.
10. Justify the need of hidden line and hidden surface techniques. Explain about Z-Buffer method for hidden surface removal.
11. What do you mean by an illumination and shading? Explain about the Phong Shading algorithm.
12. Write shot on any TWO:
    (a) Graphical Language (b) 2D-Shear
    (c) Bezier Curve (d) Basic Steps in Animation

PURBANCHAL UNIVERSITY
2019

Bachelor in Information Technology (B.I.T.)/Fifth Semester/*Final*
Time: 03:00 hrs. Full Marks: 80 /Pass Marks: 32
BIT375CO: Computer Graphics *(New Course)*

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions. **2×12=24**

1. How Bresenham's line drawing algorithm can be explained with example?
2. Discuss different types of two-dimensional transformations. Explain Pivot-point rotation with example.
3. What are different hidden line and hidden surface removal techniques? Explain back face detection method in detail.

Group B

Answer SEVEN questions. **7×8=56**

4. What is Computer Graphics? Explain the various applications of computer graphics in brief.
5. Write the midpoint circle drawing algorithm and digitize the circle $x^2+y^2=36$.
6. List all input graphical devices and explain light pen and mouse in detail. What are different type of 3D transformation?
7. Why hidden line and hidden surface removal techniques are required? Explain Z-buffer method.
8. Discuss about need of shading in engineering data visualization.
9. What is animation? Discuss its applications and today's trend.
10. Why do we need machine independent graphical language? Explain different types of file format.
11. Write shot on any TWO:
    (a) Beam Penetration Method (b) Bezier curve
    (c) Window to view port transformation

PURBANCHAL UNIVERSITY

Time-bound Home Exam 2020

Bachelor in Information Technology (B.I.T.)/Fifth Semester/*Final*

Time: 03:00 hrs. (+2 Hrs. for Submission) Full Marks: 80 /Pass Marks: 32

BIT375CO: Computer Graphics *(New Course)*

Instructions:

Dear Students!

- *This model of examination is for you as the end of your current semester. This examination allows you to write answer from your own place of residence. Follow the following instructions without fail.*
- *Do not write your name in the answer-sheet(s).*
- *All the answer-sheets should be sent to college through your approved email in which you have received your question paper.*
- *Do not write questions in the answer-sheet but mention clearly the question number.*
- *All the scan/photos of answer-sheets should be clearly visible. Any blur scan/photo will not be considered for evaluation. Responsibility lies with the students to make sure that scan/photos of the answer-sheet are of readable quality.*
- *Leave 1 inch margin on each side of the answer-sheet.*
- *Clearly mention your Roll no, subject, program, semester, page number at the right-top of each page as instructed by the Office of the Examination Management.*
- *Make sure that you send your answer-sheets within the given time. Any email received after the given time will not be acceptable.*
- *You are strictly advised to write with your own handwriting and that you are not using any unfair means to answer the questions.*
- *Do not consult during the examination period to any other person in answering the questions.*
- *Do not post any pictures of taking examination or your answer-sheets in any social-media. Found that may be taken action from University.*

Figure in the margin indicate full marks.

Group A

Answer TWO questions. **2×12=24**

1. Explain mid-point ellipse drawing algorithm in detail.
2. Explain the algorithm to simulate diffuse reflection in detail.
3. Justify the need of projection. Explain different types of projections.

Group B

Answer SEVEN questions. **7×8=56**

4. Explain different applications of graphics in brief.
5. What are raster and vector system? Explain shadow mask method with diagram.
6. Explain pivot point scaling with explain.
7. Explain windows to viewport transformation in detail.
8. What are two dimensional transformations? Discuss rotation and scaling in brief.
9. What is clipping? Explain Cohen-Sutherland line-clipping algorithm in brief.
10. Discuss touch screen and tablet input devices in brief.
11. Explain different graphical languages and file formats.
12. **Write shot on any TWO:** **4+4**
    (a) Animation
    (b) Bezier curve
    (c) Z-buffer

PURBANCHAL UNIVERSITY

2021

Bachelor in Information Technology (B.I.T.)/Fifth Semester/*Final*

Time: 03:00 hrs. Full Marks: 80 /Pass Marks: 32

BIT375CO: Computer Graphics *(New Course)*

Candidates are required to give their answers in their own words as far as practicable.

Figure in the margin indicate full marks.

Group A

Answer TWO questions. **2×12=24**

1. Discuss Bresenham's line drawing algorithm for m<1 in detail. Rastertize the line with endpoints (5, 5) and (13, 9) using Bresenham's algorithm for m<1. 6+6

2. What is clipping and why is it needed? Explain in detail about Cohen Sutherland line clipping algorithm. 4+8

3. Differentiate between parallel and perspective projection. Explain Gourand shading surface rendering technique. Also write its advantages and disadvantages. 4+5+3

Group B

Answer SEVEN questions. **7×8=56**

4. Define Computer graphics. What are the various applications of computer graphics? 2+6

5. Explain the difference between Raster and Vector display architecture with its applications and examples.

6. Explain the process of 2D window to viewport transformation.

7. What are translation, scaling and rotation in 2-Dimentional transformations? Explain pivot point rotation in 2D. 4+4

8. Explain Backface detection method and Depth buffer method in detail.

9. Explain Phong shading models.

10. What is the need for machine independent graphical languages? Write about any two graphical file formats. 4+4

11. Write shot on any TWO:
    (a) Touch screen (b) Open GL (c) 3D transformation