Question One: Choose the correct answer

(10 Marks)

1. Which of the following statements is TRUE about the Computer Graphics?
   a. Computer graphics is the creation, collection, storage, manipulation and presentation of models and images of objects
   b. Psychology of light and color perception
   c. Mathematics of 2-D and 3-D geometry and image creation
   d. All of these

2. Raster graphics are composed of __.
   a. Paths
   b. Palette
   c. Pixels
   d. None of these

3. The transformation in which an object is moved in a minimum distance path from one position to another is called __.
   a. Translation
   b. Rotation
   c. Scaling
   d. Reflection

4. The subtractive color models use the concept of __.
   a. Light to display color
   b. Monitor
   c. Printing ink
   d. None of these

5. Which of the following attributes should attach a half circle to each line ending?
   a. BasicStroke.CAP_BUTT
   b. BasicStroke.CAP_ROUND
   c. BasicStroke.JOIN_BEVEL
   d. BasicStroke.CAP_SQUARE

6. Which of the following statements is FALSE about the Buffered Images?
   a. A Buffered Image is an image in the memory which can be drawn on an Image.
   b. The constructor BufferedImage generates a Buffered Image.
   c. The method drawImage generates a Graphics2D object for the BufferedImage.
   d. None of these
Question Two: Answer Four (4) of the following questions: (20 Marks)

Essay Questions:

a. What is the difference between Raster and Vector Graphics?

b. What are the basic geometric objects in computer graphics?

c. Describe the concept of Midpoint line drawing algorithm.

d. Explain in details the concept of Odd Parity rule algorithm for filling areas.

e. Compare among RGB and CMY color models.

Question Three: Answer Four (4) of the following questions: (20 Marks)

a. Write a Java program to display a square centered at the origin and rotated by 45°

b. Write the Java code to construct an ellipse of width 80 and height 100 centered at (100, 300).

c. Write the Java code to draw a thick line (5 pixel) based on {8, 5 16, 5} pattern.

d. Write the Java code to display the following text using TextAttributes and AttributeString classes.

   “Computer Graphics in Java”

e. Using GradientPaint class to mix blue and red colors, write the Java code to draw the following rectangle.

End of Questions

Good Luck