

U.G. 5th Semester Examination - 2021**BCA****Course Code : BBCADSHC1 [DSE1]****Course Title : Computer Graphics**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** questions: $1 \times 10 = 10$
- Define Vector image.
 - What is speed-in and speed-out in classical animation?
 - What is a Lookup Table?
 - Define greyscale in the light of HSL model.
 - What is morphing?
 - Define scaling factor.
 - Is it possible to capture the movement of a real life object using CGI means?
 - What is FPS?

- Define aspect ratio.
- What is the value of initial decision parameter for mid-point circle drawing algorithm whose radius is 8?
- What is dithering?
- A point (4,3) is rotated counter clockwise by an angle of 45° . Find the transformed coordinate of the given point.
- What is rasterizations?
- Define window and viewport.
- Write the transformation matrix, which is required when an object is reflected with respect to $x=0$ straight line.

2. Answer any **five** questions: $2 \times 5 = 10$
- In your opinion which line drawing algorithm is more efficient and why?
 - Compare RGB and CMYK color models.
 - What is the difference between Saturation and Vibrance in Computer Graphics?
 - Which domain of a sound signal is considered and recorded in MIDI?
 - Define additive and subtractive color model.

- f) Write down the inequalities for point clipping.
- g) A rectangle ABCD, where vertices located at A(0,0), B(2,0), C(2,2) and D(0,2). Find the transformed coordinates of the rectangle ABCD after applying shearing X direction=2.
- h) What is parallel and perspective projection?

3. Answer any **two** questions: 5×2=10

- a) What are quads and triads in 3D modelling? In your opinion which one is convenient to implement and why?
- b)
 - i) Write down Cohen-Sutherland's algorithm of line clipping.
 - ii) Write the importance of homogeneous coordinate system in computer graphics. 4+1
- c)
 - i) Given a triangle A(10,10), B(20,10) and C(30,40), scale it to double the size and find the transformed coordinates while keeping the centroid in the same location.
 - ii) What is scan code? 4+1
