Prepare these questions. It will help you to solve Terminal Paper.

1. **Explain following terms**

(A). Saturation of light.

(B) RGB Color Coordinates.

(C) Resolution of Raster system.

(D) List some 3D viewing devices.

(E) Interpolation.

(F) GUI

(G) Frame Buffer

(H) Interlacing

(I) Display controller

(J) List some 3D viewing devices

(K). Specular Reflection

(L)Diffusion Reflection

(M) Ambient Reflection  
(N) Clipping

**Raster System Numericals**

1. How much time is spent scanning each row of pixels during screen refresh on a raster system with a resolution of 1280 x 1024 and refresh rate of 30 frame per second?
2. Find out the aspect ratio of the raster system using 8 x 10 inches screen and 100 pixel/inch.
3. Suppose RGB raster system is to be designed using on 10 inch x 12 inch screen with a resolution of 400 pixels per inch in each direction. If we want to store 16 bits per pixel in the frame buffer, how much storage (in bytes) do we need for frame buffer?
4. If a 280,000 pixel screen has 700 pixels in each horizontal row, how many pixels are in each vertical column?

Note: **Practice More**

**Line Drawing Algo**

1: Explain why DDA algorithm is rejected for drawing line.

1. Provide Psudo code of bresenham’s line Drawing algo.
2. Provie 3 poblems of line drawing equation
3. Why the Bresenham’s line drawing is the Best one.

**Circle Drawing Algo**

1. Provide Bresenham’s circle drawing algorithm in detail
2. Bresenham’s algorithm can be extended to circles. Convince yourself of this statement by considering a circle centered at the origin. Which parts of the circle must be generated by an algorithm and which parts can be found by symmetry? Can you find a part of the circle such that if we know a point generated by a scan-conversion algorithm, we can reduce the number of candidates for the next pixel?
3. Why did we use symmetry in circle drawing and what happens if it is not used.

**Clipping:**

1: Use the Cohen Sutherland algorithm to clip line P1 (80, 20) and P2 (110, 10) against a window lower left hand corner (40, 10) and upper right hand corner (90, 40).

2: Write ABLR code for Clipping Window

3: Write All steps involved in Line clipping using Cohen Sutherland Algorithm

Note: Practice Clipping Questions More.

**Transformations**

1.Show that the 2x2 matrix

represents pure rotation.

2. Write all the points which describe the rotation about arbitrary point other than the origin.

3. Rotate P= (8, 4, 3) by 30 degrees along Y-axis.  
4. Find a transformed point Q caused by rotating P (3, 5) about the origin through an angle of 60o.

5. What are the steps involved in animation sequence?

6. Provide a 3x3 matrix that will compute the new vertices of a planner box after a rotation of 45 degrees and a scaling of factor 0.7 about its center [4,5].   
7. Provide a 4x4 matrix that will compute the new vertices of a planner box after a rotation of 60 degrees and a scaling of factor 0.5 about its center [8, 4, 3].

**Polygon Filling Algorithm**

1. Explain Polygon filling algorithm with 4 connectivity in detail
2. Explain Polygon filling algorithm with 8 connectivity in detail
3. Explain Scan line polygon filling algorithm in details with an example

**Curves**

1. Write all parameters involved in making an elipse
2. Write all parameters involved in making parabola
3. Write down main properties of bazier curves
4. Given Bo = [1,1], B1 = [2,3]. B2 = [3,1] and B3 = [4,3] the vertices of a Bezier polygon. Determine 5 points on the Bezier curve for any five values of t.
5. Given Bo = [3,1], B1 = [5,3]. B2 = [3,6] and B3 = [9,5] the vertices of a Bezier polygon. Determine 10 points on the Bezier curve for any 10 values of t.

Note: Practice Bazier Curves More:

**Lighting and Shading**

1. Explain shadow masking.(Refer PDF Material Provided)
2. Write down the general Equation of phong reflection model
3. How the world look like in following situations?

without ambient light.  
with too much ambient light.

1. The Phong reflection model is an approximation of physical reality to produce good rendering under a variety of lighting conditions and material properties. Describe the four vectors, the model uses to calculate a color for an arbitrary point p. Illustrate with a figure.

**Animation**

1. Write at least 5 basic principle of stunning animation video.
2. How staging should be used in making an animated video
3. Should we always consider real time drawing rules in making object or we can exaggerate little bit. Justify your answer
4. What are the methods of motion specifications?
5. What rules of physics should be kept in mind to make an animated video

Best of luck for Terminal and for future also. :)