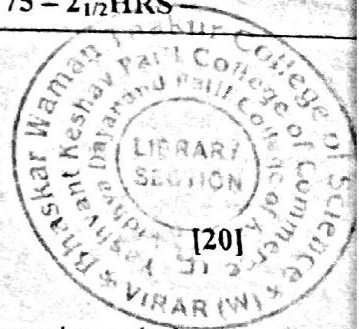


- NOTE: 1) Diagrams should be Neat and labeled.  
 2) All Questions are compulsory.  
 3) Right side indicates marks.



- Q.1) Attempt any four.** [20]
- Derive steps in midpoint's circle.
  - Write applications of computer graphics.
  - Draw the circle with center (10,10) and radius 15 using bresenham circle.
  - Define pixel. Explain bitmap and vector based image.
  - Differentiate raster scan method and random scan method.
  - Explain setfillstyle () and arc() with example.
  - Explain setcolor() and line() with example.
  - Derived steps for DDA line.
- Q.2) Attempt any four.** [20]
- What is polygon clipping? Explain it.
  - Explain cohen-sutherland line clipping algorithm.
  - What is clipping? Explain character clipping.
  - Explain wire frame model.
  - Describe Bezier curve with there properties.
  - How map window port to view port. Explain it with its steps.
  - Differentiate interpolation curve and approximation curve.
  - Write short note on spline curve.
- Q.3) Attempt any four.** [20]
- Write short note on 1. Texture mapping 2. Morphing
  - Describe illumination model.
  - Explain z-buffer algorithm.
  - Explain shading technique in detail.
  - Explain components of computer animation.
  - What is shadow? Explain its types.
  - Describe Umbra and penumbra using shadow.
  - Describe illumination model.
- Q.4) Attempt any three.** [15]
- Describe CRT with components.
  - Consider line AB with A=(-1,0) and B=(-8,4). Apply DDA line algorithm and calculate pixel on this line.
  - Explain initgraph () and detectgraph().
  - Explain window port and view port.
  - Derived steps for bresenham's line.
  - Explain outtextxy() and circle() with example.