**SARASWATI MAHILA MAHAVIDHYALAYA, PALWAL**

**LESSON-PLAN**

**Class: BCA 5TH SEM Semester: ODD**

**Subject: Computer Graphics Session: 2020-21**

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| **Lecture Number** | **Topic** |
|  | UNIT 1 |
| **L 1-20** | Graphics Primitives: Introduction to computer graphics. |
| Basics of Graphics systems, Application areas of Computer Graphics. |
| overview of graphics systems, video-display devices. |
| Raster-scan systems, Random scan systems. |
| Graphics monitors and Workstations. |
| Input Devices. |
| Output Primitives: Points and lines, line drawing algorithms. |
| Mid-point circle and Ellipse algorithms. |
| Filled area primitives: Scan line polygon fill algorithm. |
| Boundary fill. |
| Flood fill algorithms . |
| CLASS TEST |
|  | UNIT 2 |
| **L 21-40** | 2-D Geometrical Transforms: Translation. |
| Scaling, Rotation. |
| Reflection and Shear transformations. |
| Matrix representations and Homogeneous coordinates. |
| Composite transforms. |
|  | Transformations between coordinate systems. |
| 2-D Viewing: The viewing pipeline. |
| Viewing coordinate reference frame. |
| Window to viewport coordinate transformation. |
| Viewing functions. |
| Cohen-Sutherland and Cyrus-beck line clipping algorithms. |
| Sutherland –Hodgeman polygon clipping algorithm. |
| CLASS TEST |
|  | UNIT 3 |
| **L 41-55** | 3-D Object Representation: Polygon surfaces, Quadric surfaces. |
| Spline representation. |
| Hermite curve, Bezier curve. |
| B-Spline curves, Bezier and B-Spline surfaces. |
| Basic illumination models. |
| Polygon-rendering methods. |
| CLASS TEST |
|  | UNIT 4 |
| **L 56-75** | 3-D Geometric Transformations: Translation. |
| Rotation, Scaling. |
| Reflection and Shear transformations. |
| Composite transformations. |
| 3-D Viewing: Viewing pipeline. |
|  | Viewing coordinates, view volume. |
| General projection transforms. |
| Clipping. |
| CLASS TEST |

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