

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: BTech  
BRANCH: CSE**

**SEMESTER : VII  
SESSION : MO/2024**

**SUBJECT: CS431 COMPUTER GRAPHICS**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|        |   | CO    | BL |
|--------|---|-------|----|
| Q.1(a) | What are responsibilities of Display Processor and also explain different components.<br>What is the role of Video Controller in drawing graphical objects. | [5] 1 | 2  |
| Q.1(b) | What is a lookup table? Explain the role of lookup table in drawing graphical objects on CRT. Explain the three input devices of computer systems.          | [5] 2 | 1  |
| Q.2(a) | Describe DDA line drawing algorithm.  | [5] 2 | 2  |
| Q.2(b) | Find intermediate points of a line using Bresenham's Line Algorithm and starting and end points are (1,1), (8,5) .  | [5] 2 | 2  |
| Q.3(a) | Explain Cohen & Sutherland line clipping algorithm.   | [5] 3 | 2  |
| Q.3(b) | Describe window to view port transformation.  | [5] 2 | 2  |
| Q.4(a) | Explain A-buffer algorithm for hidden surface removal.  | [5] 2 | 2  |
| Q.4(b) | Explain Phong shading algorithm for illumination model.   | [5] 2 | 2  |
| Q.5(a) | Differentiate between parallel projection and perspective projection.   | [5] 2 | 2  |
| Q.5(b) | Explain 3D rotation about XY plain.   | [5] 2 | 3  |

**::::::19/11/2024::::::M**