

**MCA-301**  
**December – Examination 2020**  
**MCA (III Year) Examination**  
**Computer Graphics**  
**Paper : MCA-301**

*Time : 2 Hours ]*

*[ Maximum Marks : 80*

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**Note** :- The question paper is divided into two Sections A and B. Write answers as per the given instructions.

**Section-A**

**8×2=16**

**(Very Short Answer Type Questions)**

**Note** :- Answer all questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries 2 marks.

1. (i) What do you mean by Graphics API? Give one example.
- (ii) Name any *two* Pointing Devices.

- (iii) Define Phong Shading.
- (iv) What is Pixel ?
- (v) Give any *two* differences between Vector Graphics and Raster Graphics.
- (vi) State hidden surface removal problem.
- (vii) What is Aspect Ratio ?
- (viii) List any *two* input devices for Graphics.

**Section-B** **4×16=64**

**(Short Answer Type Questions)**

*Note* :- Answer any *four* questions. Each answer should not exceed **200** words. Each question carries 16 marks.

- 2. A line is to be drawn on the screen starting from (8, 4) to (2, 0) using a line drawing algorithm. Find out which pixel would be needed to be shown on the screen.
- 3. Distinguish between Window Port and Viewport.
- 4. What are Orthographic Projections ? When do we need them ?
- 5. Determine the transformation matrix for carrying out rotation about an arbitrary axis.

- 6. Explain what the Shadow Mask phenomenon is ?
- 7. Explain any *one* circle drawing algorithm with a suitable example.
- 8. Describe briefly Phong Shading.
- 9. Explain the RGB Color Model. Also, explain the relationship between the RGB Color Model and the HLS Color Model.