

[18/A-17]

SEAT No. \_\_\_\_\_

No. of Printed Pages : 02

# Sardar Patel University

Master of Computer Application

SEMESTER – V Examination

PS05CMCA04: Computer Graphics

13<sup>th</sup> April, 2019 (Saturday)

Time: 10:00 AM to 1:00 PM

Max Marks: 70

Q1. Choose the most appropriate option for each of the following question.

[8]

- i. VFX means \_\_\_\_  
a. Visual Effects      b. Visual Functions      c. Visual Frequency      d. None of given
- ii. Full form of CRT is \_\_\_\_  
a. Cathode Ray Tube      b. Cathode Red Tube      c. Cathode Ray Travrsal      d. None of given
- iii. In Cohen – Sutherland line clipping algorithm, \_\_ number of bits are used to detect region code.  
a. 2      b. 4      c. 8      d. 16
- iv. Which of the following is not an example of blobby object?  
a. Water Droplet      b. Human Muscle      c. Iris      d. None of given
- v. The photoreceptor cells called \_\_\_\_\_ are responsible for color identification of the object.  
a. Fovea      b. Rods      c. Cones      d. None of given
- vi. \_\_\_\_\_ may be defined as an attempt to estimate the original image by applying adhoc algorithms.  
a. Image Enhancement      b. Improvement      c. Image restoration      d. None of given
- vii. Flash is a \_\_\_\_\_ Authoring Tool.  
a. Frame based      b. Time based      c. Icon based      d. All of given
- viii. The process of removing unwanted sounds that crept in, during the recordings is known as \_\_\_\_  
a. Dithering      b. Trimming      c. Splicing      d. None of given

Q2. Answer the following questions (Any seven):

[14]

- i. List the names of the colors generated by beam penetration method.
- ii. What is even parity rule for determining inside or outside region?
- iii. Differentiate: PHIGS and GKS
- iv. What is exterior clipping?
- v. What object space method for visible surface detection?
- vi. List out the features of PNG graphics file format..
- vii. How many bytes will require for storing a 32 bit sound system, recording signals at 44 KHz in stereo recording for 2 minutes?
- viii. List out atleast four color models with its uses.
- ix. List out the main facets of Multimedia technology with their uses.

(1)

(P.T.O)

- Q3. Answer the following questions:** [6]
- a. Write a note on Random Scan Display and Raster Scan Display. [6]
  - b. Write steps of Bresenham's line drawing algorithm.

**OR**

- b. Write steps of boundary fill procedure. Explain drawbacks and solutions of boundary fill. [6]

**Q4. Answer the following questions:** [6]

- a. Write a note on 2D viewing pipeline. [6]
- b. Write a note on text clipping.

**OR**

- b. Explain parallel and perspective projections by giving suitable examples. [6]

**Q5. Answer the following questions:** [6]

- a. Define animation and write the steps to develop 3-dimensional animation. [6]
- b. Do as directed.
  - i. Write the steps to convert color value in YIQ color model to RGB model. [6]
  - ii. Define: Dithering, Image Analysis and Image Understanding.

**OR**

- b. Explain briefly atleast six features of Authoring tool. [6]

**Q6. Answer the following questions:** [6]

- a. Write short note on Image Digitization process. [6]
- b. Explain briefly with diagram the different stages of Image Processing & Analysis scheme. [6]

**OR**

- b. Consider the following figure where each small rectangle represents a pixel and the value inside it is gray level at that pixel. Hence, whole array represents a digital image  $g(r,c)$  of size 5 X 5. Sharpen the centre pixel  $g(2,2)$ , which is underlined using Laplacian second order derivative operator using 4-connectivity. [6]

0	1	0	6	7
2	0	2	6	5
1	3	<u>7</u>	4	6
1	0	6	6	5
2	5	6	7	6

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