Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2017

IT3CO11 Computer Graphics and Multimedia

Programme: B.Tech. Branch/Specialisation: IT

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. The phenomenon of having a continuous glow of a beam on the screen even after it is removed is called as: **1**

(a) Fluorescence (b) Persistence

(c) Phosphorescence (d) Incandescence

ii. Raster images are commonly called: **1**

(a) Pix map (b) Bit map

(c) Both (a) and (b) (d) None of these

iii. Number of viewports that can be defined are: **1**

(a) One (b) Two

(c) As many required (d) Depends on hardware

iv. Which transformation does not preserve the geometric dimensions of the objects: **1**

(a) Rotation (b) Shearing

(c) Both (a) and (b) (d) None of these

v. The subcategories of orthographic projection are: **1**

(a) Cavalier, cabinet, isometric

(b) Cavalier, cabinet

(c) Isometric, diametric, trimetric

(d) Isometric, cavalier, trimetric

vi. RGB model are used for **1**

(a) Computer display (b) Printing

(c) Painting (d) None of these

P.T.O.

vii. Multimedia is: **1**
(a) Video/Animation (b) Audio
(c) Both (a) and (b) (d) None of these

viii. PICT is graphics file format for: **1**
(a) Windows (b) Linux (c) Macintosh (d) None of these

ix. Interactive graphics is useful in **1**
(a) Training pilots (b) Computer aided design
(c) Process control (d) All of these

x. Once a file is saved in JPEG format, some data is lost **1**
(a) Temporarily (b) Permanently
(c) Partially (d) Not lost

Q.2 i. Define Computer Graphics and enumerate its applications. **2**

ii. Write the properties of circle and thereby evolve the midpoint circle algorithm. **3**

iii. Differentiate raster and random scan systems. Draw the diagram of CRT to explain its functioning. **5**

OR iv. What are the drawbacks of DDA line drawing algorithm? How are they handled with the Bresenham's algorithm? **5**

Q.3 i. Explain viewing transformation. **2**

ii. How are reflections represented in graphics? **3**

iii. What are basic geometric transformations? Give representation and an example for each and also for composite transformation. **5**

OR iv. Clip line with end points (0,0) (12,12) using Cohen Sutherland algorithm in a window with bottom left vertex at (1,1) and top right (10,10). **5**

Q.4 i. Differentiate the RGB, CMY and CMYK color models. **3**

ii. Compare parallel and perspective projections with applications of each. **7**

OR iii. Write the significance of homogeneous coordinates with respect to handling 3 D transformations. **7**

Q.5 i. Discuss JPEG image compression. **2**

ii. Describe the components and processing of audio systems. **3**

iii. Briefly describe the architecture of multimedia based hardware systems. **5**

OR iv. What are the evolving technological trends in multimedia? **5**

Q.6 Write short note on any two:

i. Animation software and formats **5**

ii. MPEG standards **5**

iii. Compression Techniques **5**

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Marking Scheme

Q.1	i.	(c) Phosphorescence	**1**
	ii.	(b) Bit map	**1**
	iii.	(c) As many required	**1**
	iv.	(b) Shearing	**1**
	v.	(c) Isometric, diametric, trimetric	**1**
	vi.	(a) Computer display	**1**
	vii.	(c) Both (a) and (b)	**1**
	viii.	(c) Macintosh	**1**
	ix.	(d) All of these	**1**
	x.	(b) Permanently	**1**
Q.2	i.	1 mark for definition + 1 mark for application	**2**
	ii.	1 mark for properties of circle + 2 marks for algorithm.	**3**
	iii.	2 marks for 5 difference + 3 marks for diagram of each + 1 mark for explanation	**5**
OR	iv.	2 marks for drawbacks + 3 marks for Bresenham's explanation	**5**
Q.3	i.	1 mark for diagram + 1 mark for explanation.	**2**
	ii.	2 marks for diagram + 1 mark for explanation.	**3**
	iii.	3 marks for types with matrix + 2 marks for composite	**5**
OR	iv.	Numerical solving	**5**
Q.4	i.	Atleast 5 points difference	**3**
	ii.	3 marks for difference + 2 marks for diagrams of each + 2 applications	**7**
OR	iii.	5 marks for representation and matrix, 2 marks justification	**7**
Q.5	i.	2 marks for process explanation	**2**
	ii.	2 marks for components + 1 mark for processing method	**3**
	iii.	3 marks for diagrams + 2 marks for enumeration of hardware	**5**
OR	iv.	Atlest 5 tools and techniques with brief note.	**5**
Q.6	i.	3 marks for software + 2 marks for file formats	**5**
	ii.	Depends on explanation	**5**
	iii.	Depends on explanation	**5**

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