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B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, SEPTEMBER 2024

Sixth Semester

B.Sc. Computer Science

Core Course—COMPUTER GRAPHICS AND MULTIMEDIA

(2013—2016 Admissions)

Time : Three Hours   Maximum Weight : 25

Part A (Objective Type Questions)

Answer **all** *questions.*
A bunch of **four** *questions carries a weight of* 1.

I. 1 Pixel with coordinates (3, 6) means ——————.

  (a) 3rd row and 6th column.   (b) 3rd column and 6th row .

  (c) Between 3rd and 6th row.   (d) None of the above.

  2 Aspect ratio is ratio of ——————.

  (a) Width to height.   (b) Height to width.

  (c) Width to breadth.   (d) Breadth to width.

  3 A frame buffer which includes 15 bits per pel of picture memory will be able to display :

  (a) 15 simultaneous colour.

  (b) approximately 32,000 simultaneous colour.

  (c) 225 simultaneous colour.

  (d) approximately 15 million simultaneous colour.

  4 RGB stands for ——————.

  (a) Red/Green/Black.   (b) Red/Green/Blue.

  (c) Red/Grey/Blue.   (d) Red/Grey/Black.

II. 5 Bezier curves can be used to create ——————.

  (a) General polygon shapes.   (b) General filled shapes.

  (c) General convex shapes.   (d) General curved shapes.

6   Choose the line-clipping algorithm, which cannot be applied to three-dimensional clipping.

    (a)   Nicholl-Lee-Nicholl method.

    (b)   Sutherland-Hodgman method.

    (c)   Cohen-Sutherland method.

    (d)   Liang-Barsky method.

7   A scaling transform can be used to make objects —————.

    (a)   Bigger.   (b)   Smaller.

    (c)   Both.   (d)   None.

8   What is the range in which a human eye responds to visible light wavelengths ?

    (a)   380- 450 nanometers.   (b)   490- 560 nanometers.

    (c)   590 - 630 nanometers.   (d)   370- 760 nanometers.

III.   9   MIDI stands for —————.

    (a)   Musical Instrument Digital Interface.

    (b)   Musical Instrument Display Interface.

    (c)   Musical Instrument Direct Interface.

    (d)   None of the above.

10   RLE is a ————— compression technique.

    (a)   Lossy.   (b)   Fractal.

    (c)   Lossless.   (d)   Wavelet.

11   Hypermedia is an extension of —————.

    (a)   CSS.   (b)   JavaScript.

    (c)   PHP.   (d)   Hypertext.

12   GIF is a ————— compression technique.

    (a)   Lossy.   (b)   Fractal.

    (c)   Lossless.   (d)   Wavelet.

IV. 13 CorelDraw is a —————.

    (a) Webpage editor.   (b) Painting editor.

    (c) Graphics editor.   (d) None of the above.

14 Flash is best known as a multimedia tool used for —————.

    (a) Interactive automobile dashboards.

    (b) Animating web sites.

    (c) Financial planning.

    (d) Database reconciliation.

15 JPEG extension is used for digital ————— files.

    (a) Animation.   (b) Video.

    (c) Image.   (d) All of the above.

16 A system which is specially designed for training applications is called —————.

    (a) GUI.   (b) Simulators.

    (c) Video display devices.   (d) Calligraphic display.

$(4 \times 1 = 4)$

Part B (Short Answer Questions)

Answer any **five** *questions.*
Each question carries 1 weight.

17 Give examples of graphics software.

18 What is shear ?

19 What is aliasing ?

20 Provide logical classification of input devices.

21 What is area clipping ?

22 What is a viewport ?

23 What is LZW ?

24 What is VoIP ?

$(5 \times 1 = 5)$

Part C (Short Essay Questions)

Answer any **four** *questions.*
Each question carries 2 weight.

25 Briefly, explain random scan displays.

26 Briefly, explain Bresenham's line drawing algorithm.

27 Briefly, explain 2D basic transformations.

28 Briefly, explain polygon clipping with an algorithm.

29 Briefly, explain different types of animation.

30 Briefly, explain Huffman coding.

$$(4 \times 2 = 8)$$

Part D (Essay Questions)

Answer any **two** *questions.*
Each question carries 4 weight.

31 Explain in detail raster scan systems with diagrams and illustrations.

32 Explain in detail 3D representations and transformations.

33 Explain in detail Sutherland-Hodgman's line clipping algorithm with diagrams and illustrations.

$$(2 \times 4 = 8)$$