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**BCA(VI) — Comp.
Graph. (602)
Core – 14**

2020

Time : 3 hours

Full Marks : 70

*Candidates are required to give their answers in
their own words as far as practicable.*

The figures in the margin indicate full marks.

Answer from all the Groups as directed.

Group – A

(Compulsory)

1. Choose the correct answer from the following
objective type questions : $2 \times 10 = 20$

(a) Heat supplied to the cathode by directing a
current through a coil of wire is called :

(i) Electron Gun

(ii) Electron Beam

(iii) Filament

(iv) Anode and Cathode

(b) _____ stores the picture information as a charge distribution behind the phosphor coated screen.

(i) Cathode ray tube

(ii) Direct view storage tube

(iii) Flat pannel display

(iv) 3D viewing

(c) The device which converts the electrical energy into light is called :

(i) Liquid crystal display

(ii) Non emitters

(iii) Plasma pannel

(iv) Emmitters

(d) In which system, the shadow mask methods are commonly used :

- (i) Raster scan system
- (ii) Random scan system
- (iii) Only (ii)
- (iv) Both (i) and (ii)

(e) The primary output device in a Graphics Systeme :

- (i) Scanner
- (ii) Video Monitor
- (iii) Nither (i) nor (ii)
- (iv) Printer

(f) Aspect ratio means :

- (i) Number of Pixels
- (ii) Ratio of vertical Point to horizontal point

(iii) Ratio of horizontal point to vertical point

~~(iv) Both (ii) and (iii)~~

(g) _____ is used for detecting mouse motion.

(i) Optical sensor

(ii) Roller on the bottom of mouse

~~(iii) Both (i) and (ii)~~

(iv) Sensor

(h) The cartesian slope intercept equation for a straight line is :

~~(i) $y = m \cdot x + b$~~

(ii) $y = b \cdot x + m$

(iii) $y = x \cdot x + m$

(iv) $y = b + m \cdot m$

(i) Expansion of line DDA algorithm is :

(i) Digital Difference Analyzer

(ii) Direct Difference Analyzer

(iii) Digital Differential Analyzer

~~(iv) Data Differential Analyzer~~

(j) The basic parameter to curved attribute are :

(i) Type

(ii) Width

(iii) Color

~~(iv) All of these~~

Group – B

Answer any four questions of the following :

5×4 = 20

2. What is Computer Graphics ? Explain its application.

3. What do you mean by 3D rotation ?
4. What are the various area filling techniques ?
5. Define translation.
6. What is a B-spline Curve ? Describe the various type of B-spline.
7. Explain Cohen Sutherland clipping algorithm for 3D clipping.

Group – C

Answer any two question of the following :

$$15 \times 2 = 30$$

8. Explain the architecture of a Raster Scan Display with the help of diagram.
9. What are the various transformation possible in 2D ? Discuss it.

10. Explain DDA line drawing algorithm ? If a line drawn from (2, 3) to (6, 15) with use of DDA. How many points will be needed to generate such line.
11. Apply the cohen suther land line clipping algorithm to clip the line segment with coordinates (30, 60) and (60, 25).

