



Name: Roll No.:

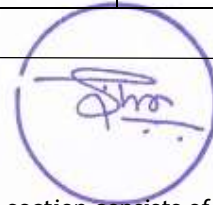
Branch: Signature of Invigilator:

Semester: VIth Date: 29/04/2022 (MORNING)

Subject with Code: CS327 COMPUTER GRAPHICS

Marks Obtained	Section A (30)	Section B (20)	Total Marks (50)

INSTRUCTION TO CANDIDATE



1. The booklet (question paper cum answer sheet) consists of two sections. First section consists of MCQs of 30 marks. Candidates may mark the correct answer in the space provided / may also write answers in the answer sheet provided. The Second section of question paper consists of subjective questions of 20 marks. The candidates may write the answers for these questions in the answer sheets provided with the question booklet.
2. The booklet will be distributed to the candidates before 05 minutes of the examination. Candidates should write their roll no. in each page of the booklet.
3. Place the Student ID card, Registration Slip and No Dues Clearance (if applicable) on your desk. All the entries on the cover page must be filled at the specified space.
4. Carrying or using of mobile phone / any electronic gadgets (except regular scientific calculator)/chits are strictly prohibited inside the examination hall as it comes under the category of unfair means.
5. No candidate should be allowed to enter the examination hall later than 10 minutes after the commencement of examination. Candidates are not allowed to go out of the examination hall/room during the first 30 minutes and last 10 minutes of the examination.
6. Write on both side of the leaf and use pens with same ink.
7. The medium of examination is English. Answer book written in language other than English is liable to be rejected.
8. All attached sheets such as graph papers, drawing sheets etc. should be properly folded to the size of the answer book and tagged with the answer book by the candidate at least 05 minutes before the end of examination.
9. The door of examination hall will be closed 10 minutes before the end of examination. Do not leave the examination hall until the invigilators instruct you to do so.
10. Always maintain the highest level of integrity. Remember you are a BITian.
11. Candidates need to submit the question paper cum answer sheets before leaving the examination hall.

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS:BE
BRANCH: CS
& IT**

**SEMESTER : VI
SESSION : SP/22**

SUBJECT: CS327 COMPUTER GRAPHICS

TIME: 2 HRS

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 2 parts : SECTION-A 30 marks and SECTION-B 20 marks.
 2. For MCQs, mark only the correct answer.
 3. Candidates may attempt any 4 questions from SECTION-B.
 4. The missing data, if any, may be assumed suitably.
 5. Before attempting the question paper, be sure that you have got the correct question paper.
 6. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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SECTION-A

(1x30 = 30)

Q1. Which one is better line drawing algorithm

- (a) Bresenham (b) DDA
(c) both are equally efficient

Q2. For midpoint circle drawing algorithm, applicable symmetry is

- (a) Quadrant symmetry (b) Octant symmetry
(c) No symmetry (d) Total symmetry

Q3. ----- produces better color in CRT monitor.

- (a) shadow-mask (b) Beam penetration
(c) both above options produces similar color

Q4. A line drawing will be smoother and continuous in

- (a) raster scan system (b) random scan system

Q5. The main attribute associated with Time (duration) of glow of the phosphor during exposure of the electron beam in CRT is known as

- (a) fluorescence (b) phosphorescence
(c) persistence

Q6. For scan conversion of ellipse, applicable symmetry is

- (a) Quadrant symmetry (b) Octant symmetry
(c) no symmetry

- Q7. Refresh rate for a monitor is measured in
(a) Hz (b) KHz
(c) MHz (d) all of the above
- Q8. The anti aliasing technique which allows shift of $1/4$, $2/4$ and $3/4$ of a pixel diameter enabling a closer path to line is?
(a) pixel phasing (b) filtering
(c) intensity compensation (d) sampling technique
- Q9. Ratio involving of number of horizontal points to that of vertical points of monitor is known as –
(a) aspect ratio (b) height ratio
(c) bit ratio (d) none of the above
- Q10. For scan conversion of line, increments of decision parameters are
(a) Constants (b) linear variation with current position
(c) quadratic variation of current position
- Q11. window defines
(a) what is to be viewed (b) where is what is to be viewed
(c) how is to be viewed (d) none of the above
- Q12. The Transformation between coordinate system consists of
(a) Translation and scaling (b) translation and rotation
(c) translation and shearing
- Q13. Transformation matrices size for 3D geometric transformation in homogeneous coordinate
(a) 2X2 (b) 3X3
(c) 4X4
- Q14. The basic transformation occurring in 2D graphics are
(a) Linear (b) non-linear
(c) circular (d) none of the above
- Q15. which is an example of rigid body transformation
(a) Scaling (b) shearing

(c) rotation

(d) none of the above

Q16. Which line clipping algorithm is more efficient?

(a) Cohen Sutherland

(b) Liang Barsky

Q17. Example of the basic geometric transformation

(a) Translation

(b) Rotation

© Scaling

(d) all of the above

Q18. In Cohen Sutherland line clipping algorithm, if both end points of a line have region codes 0000, then line is

(a) completely visible

(b) completely invisible

© can not be determined

Q19. Which geometric transformation made the need for adoption of homogenous coordinate system?

(a) Translation

(b) rotation

© Scaling

Q20. For a physical point (3,2) equivalent homogeneous representations can be

(a) (1,2,3)

(b) (6,4,2)

© (2,3,1)

(d) none of the above

Q21. In which of these projections, projectors are perpendicular to the view plane

(a) Orthographic

(b) Oblique

© Perspective

Q22. Cabinet projection is an example of ...

(a) Oblique Projection

(b) Orthographic Projection

© Isometric Projection

Q23. Isometric parallel projection is type of ...

(a) Axonometric orthographic

(b) Non axonometric orthographic

© none of the above

Q24. Which curve allows local control over the shape of the spline curve or surface

(a) Bazier

(b) B-spline

Q25. Projection reference point is associated with

(a) Perspective projection

(b) Parallel projection

© All of the above

Q26. Continuity parameters (Parametric, geometric) with respect to curve/ spline design are associated with smoothness of curve.

(a) Yes

(b) No

Q27. Hermite Spline is an example of

(a) Interpolation spline

(b) Approximation Spline

Q28. Bezier curve is an example of

(a) Interpolation spline

(b) Approximation Spline

Q29. What transformation is applicable for 3D viewing only, not for 2D viewing.

(a) Projection transformation

(b) Viewing transformation

© Workstation transformation

Q30. The vanishing point for any set of lines that are parallel to one of the principal axis of an object is referred to as a principal vanishing point.

(a) Yes

(b) No

SECTION-B

(4x5 = 20)

(Answer any four questions)

Q31. Discuss on various applications of computer graphics.

Q32. Elaborate the importance of homogenous coordinate system for geometric transformation.

Q33. Describe Cohen-Sutherland Line clipping algorithm.

Q34. Describe Beizer spline for curve design.

Q35. Describe RGB color model in computer graphics.

Q36. Describe area subdivision method for visible surface determination.



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