JK

Roll No. _____

Question Booklet Number

O.M.R. Serial No. :

BCA IV Semester (NEP Back) Examination, 2025-26

Computer Graphics and Animation

Paper Code						
B	C	A	4	0	0	1

Question Booklet Series
A

Time : 1 : 30 Hours] **[Maximum Marks : 75**

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. **All** questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
4. Four alternative answers are mentioned for each question as – A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

(Remaining instructions on the last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। **सभी** प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गये हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।
4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर- A, B, C तथा D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छाँटना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

(शेष निर्देश अन्तिम पृष्ठ पर)

Rough Work

रफ कार्य

1. What is Interactive Computer Graphics?
   (A) Graphics printed on paper
   (B) User-controlled graphical system
   (C) Static image display
   (D) Audio processing system
2. Which device is commonly used for interactive graphics input?
   (A) Keyboard
   (B) Printer
   (C) Monitor
   (D) Speaker
3. The main advantage of interactive graphics is:
   (A) Low storage
   (B) Faster user interaction
   (C) No need for software
   (D) No hardware required
4. Interactive graphics allow users to:
   (A) Only view images
   (B) Modify graphics in real-time
   (C) Print documents
   (D) Store data
5. Which field uses computer graphics extensively?
   (A) Medicine
   (B) Education
   (C) Entertainment
   (D) All of the above
6. CAD stands for:
   (A) Computer Aided Design
   (B) Computer Algorithm Design
   (C) Control Aided Design
   (D) Computer Analog Design
7. Computer graphics are used in entertainment for:
   (A) Animation
   (B) Movies
   (C) Games
   (D) All of the above
8. Which application uses computer graphics for map creation?
   (A) DBMS
   (B) CAD
   (C) GIS
   (D) OS
9. The conceptual framework of interactive graphics includes:
   (A) Input devices
   (B) Output devices
   (C) Processing unit
   (D) All of the above

10. Which component processes graphical data?

(A) Mouse

(B) CPU

(C) Keyboard

(D) Printer

11. Output devices for graphics include:

(A) Monitor

(B) Plotter

(C) Printer

(D) All of the above

12. The interaction loop in graphics involves:

(A) Input $\rightarrow$ Process $\rightarrow$ Output

(B) Output $\rightarrow$ Input $\rightarrow$ Process

(C) Process $\rightarrow$ Input $\rightarrow$ Output

(D) None

13. Which is an example of raster graphics?

(A) Vector image

(B) Bitmap image

(C) Line drawing

(D) Polygon

14. Vector graphics are based on:

(A) Pixels

(B) Colors only

(C) Mathematical equations

(D) Audio signals

15. Hardware for computer graphics includes:

(A) GPU

(B) Monitor

(C) Input devices

(D) All of the above

16. Software for computer graphics includes:

(A) Photoshop

(B) AutoCAD

(C) Blender

(D) All of the above

17. GPU stands for:

(A) Graphics Processing Unit

(B) General Processing Unit

(C) Graphic Performance Unit

(D) General Purpose Unit

18. Which software is used for 3D graphics?

(A) MS Word

(B) Blender

(C) Excel

(D) Notepad

19. Classification of graphics applications includes:

(A) Business

(B) Scientific

(C) Entertainment

(D) All of the above

20. Plotters are used for:

(A) Displaying video

(B) Large-scale drawings

(C) Audio output

(D) Data storage

21. Scan conversion refers to:

(A) Converting vector graphics to raster

(B) Converting raster to vector

(C) Audio processing

(D) Data compression

22. Which algorithm is commonly used for line drawing?

(A) DDA Algorithm

(B) Sorting Algorithm

(C) Searching Algorithm

(D) Hashing

23. The DDA algorithm is based on:

(A) Differential equations

(B) Incremental calculations

(C) Recursion

(D) Division

24. Bresenham's line algorithm uses:

(A) Floating-point arithmetic

(B) Complex numbers

(C) Integer arithmetic

(D) Binary search

25. Scan converting a circle involves:

(A) Straight lines

(B) Curved segments

(C) Only pixels

(D) Only vectors

26. The midpoint circle algorithm uses:

(A) Division

(B) Recursion

(C) Sorting

(D) Decision parameter

27. Circle drawing algorithms exploit:

(A) Symmetry

(B) Asymmetry

(C) Randomness

(D) Sorting

28. An ellipse differs from a circle because:

(A) Equal radii

(B) Two radii

(C) No symmetry

(D) Infinite radius

29. Ellipse drawing uses:

(A) One region

(B) Three regions

(C) Two regions

(D) Four regions

30. Midpoint ellipse algorithm divides regions based on:

(A) Slope

(B) Color

(C) Size

(D) Radius

31. Clipping is used to:

(A) Draw objects

(B) Remove unwanted parts

(C) Fill polygons

(D) Scale images

32. Point clipping checks:

(A) If point is inside region

(B) If line intersects

(C) If polygon exists

(D) None

33. Cohen-Sutherland algorithm is used for:

(A) Polygon clipping

(B) Line clipping

(C) Circle drawing

(D) Filling

34. Cohen-Sutherland uses:

(A) Region codes

(B) Hash tables

(C) Trees

(D) Graphs

35. Region codes are also called:

(A) Outcodes

(B) In codes

(C) Hash codes

(D) Pixel codes

36. Cohen-Sutherland divides space into:

(A) 4 regions

(B) 8 regions

(C) 9 regions

(D) 16 regions

37. A line completely inside clipping window is:

(A) Rejected

(B) Accepted

(C) Divided

(D) Rotated

38. A line completely outside is:

(A) Accepted

(B) Scaled

(C) Rotated

(D) Rejected

39. Logical AND of outcodes ≠ 0 means:

(A) Accept line

(B) Clip Line

(C) Reject Line

(D) Rotate line

40. Logical OR = 0 means:

(A) Reject

(B) Accept

(C) Divide

(D) Transform

41. Midpoint subdivision is used for:

(A) Line clipping

(B) Polygon filling

(C) Circle drawing

(D) Scaling

42. Midpoint subdivision works by:

(A) Filling Area

(B) Rotating line

(C) Scaling line

(D) Dividing line into two halves

43. The Midpoint subdivision algorithm continues until:

(A) Line disappears

(B) Line is fully inside/outside

(C) Pixel changes

(D) Memory full

44. Midpoint subdivision uses:

(A) Recursion

(B) Iteration only

(C) Sorting

(D) Searching

45. Midpoint subdivision is slower than:

(A) Bresenham

(B) DDA

(C) Cohen-Sutherland

(D) None

46. Sutherland-Hodgman algorithm is used for:

(A) Line clipping

(B) Polygon clipping

(C) Circle drawing

(D) Scaling

47. Sutherland-Hodgman clips polygon against:

(A) Only one point

(B) All edges at once

(C) One edge at a time

(D) None

48. In Sutherland-Hodgman Output of each stage becomes:

(A) Input to next stage

(B) Final output

(C) Deleted

(D) Rotated

49. Sutherland-Hodgman works best for:

(A) Concave polygons

(B) Convex polygons

(C) Circles

(D) Lines

50. Clipping window is usually:

(A) Circle

(B) Triangle

(C) Rectangle

(D) Polygon

51. Translation moves object by:

(A) Rotation

(B) Shifting position

(C) Scaling

(D) Reflection

52. Rotation is about:

(A) Axis or point

(B) Line

(C) Pixel

(D) Color

53. Scaling changes:

(A) Shape

(B) Size

(C) Position

(D) Color

54. Reflection produces:

(A) Mirror image

(B) Rotation

(C) Scaling

(D) Translation

55. Shearing changes:

(A) Shape

(B) Color

(C) Size

(D) Position only

56. Homogeneous coordinates use:

(A) 2 elements

(B) 3 elements

(C) 4 elements

(D) 1 element

57. Advantage of homogeneous coordinates:

(A) Simplifies transformations

(B) Increases memory

(C) Reduces speed

(D) None

58. Composite transformation means:

(A) Single transformation

(B) Multiple transformations combined

(C) No transformation

(D) Only rotation

59. Window-to-viewport transformation is used to:

(A) Clip objects

(B) Map coordinates

(C) Rotate objects

(D) Scale only

60. 3D transformations use:

(A) 2×2 matrices

(B) 3×3 matrices

(C) 4×4 matrices

(D) 1×1 matrices

61. A curve in computer graphics is:

(A) Straight line only

(B) Set of points forming a path

(C) Random pixels

(D) Color pattern

62. Parametric curves are defined using:

(A) Time parameter

(B) Colors

(C) Pixels

(D) Mathematical functions

63. A surface is:

(A) 1D object

(B) 2D object in 3D space

(C) Only line

(D) Only point

64. Which is an example of a curve?

(A) Circle

(B) Cube

(C) Sphere

(D) Pyramid

65. Curves are mainly used for:

(A) Printing

(B) Data storage

(C) Modeling shapes

(D) Networking

66. Parametric equation of curve uses:

(A) One parameter

(B) Two parameters

(C) Three parameters

(D) No parameter

67. Surface representation requires:

(A) One parameter

(B) Two parameters

(C) Three parameters

(D) No parameter

68. Curves provide:

(A) Smooth shapes

(B) Rough shapes

(C) No shapes

(D) Only lines

69. Which curve is widely used in design?

(A) Bezier curve

(B) Straight line

(C) Random curve

(D) Pixel curve

70. Surfaces are used in:

(A) 3D modeling

(B) Text editing

(C) Networking

(D) Audio

71. Polygon surface is made of:

(A) Curves

(B) Edges and vertices

(C) Pixels only

(D) Colors

72. A polygon mesh is:

(A) Single polygon

(B) Circle

(C) Line only

(D) Collection of Polygons

73. Most common polygon used is:

(A) Triangle

(B) Circle

(C) Ellipse

(D) Square only

74. Polygon meshes are used in:

(A) 3D modeling

(B) Printing

(C) Networking

(D) Typing

75. A vertex represents:

(A) Edge

(B) Corner point

(C) Surface

(D) Color

76. Edge connects:

(A) Five Vertices

(B) Three vertices

(C) Four vertices

(D) Two Vertices

77. Polygon mesh improves:

(A) Realism

(B) Speed only

(C) Storage only

(D) Color

78. Wireframe model shows:

(A) Only edges

(B) Only surfaces

(C) Colors

(D) Pixels

79. Solid modeling includes:

(A) Only Vertices

(B) Only edges

(C) Surface + interior

(D) None

80. Mesh density affects:

(A) Detail level

(B) Color

(C) Sound

(D) Input

81. Quadric surfaces include:

(A) Sphere

(B) Cylinder

(C) Cone

(D) All of the above

82. Equation of quadric surface is:

(A) Linear

(B) Quadratic

(C) Cubic

(D) Random

83. Sphere is defined by:

(A) Linear equation

(B) Quadratic equation

(C) Cubic equation

(D) None

84. Superquadrics are:

(A) Extensions of quadrics

(B) Simple lines

(C) Pixels

(D) Colors

85. Superquadrics allow:

(A) Flexible shapes

(B) Only rigid shapes

(C) No shapes

(D) Random shapes

86. Cylinder is an example of:

(A) Curve

(B) Surface

(C) Pixel

(D) Line

87. Cone is defined by:

(A) Quadratic equation

(B) Linear equation

(C) Random equation

(D) None

88. Quadric surfaces are used in:

(A) Networking

(B) Audio

(C) Modeling objects

(D) Printing

89. Superquadrics help in:

(A) Shape control

(B) Data storage

(C) Printing

(D) Sound

90. Parametric surfaces use:

(A) One parameter

(B) Two parameters

(C) Three parameters

(D) None

91. Spline curves are:

(A) Smooth curves

(B) Rough curves

(C) Straight lines

(D) Pixels

92. Common spline type:

(A) Bezier

(B) Binary spline

(C) B- spline

(D) Random spline

93. Control points define:

(A) Speed

(B) Color

(C) Shape of spline

(D) Size only

94. Bezier curve uses:

(A) Control points

(B) Pixels

(C) Lines

(D) Colors

95. Spline curves are used in:

(A) Animation

(B) Modeling

(C) Design

(D) All of the above

96. Animation is:

(A) Static image

(B) Sequence of images

(C) Sound

(D) Tex

97. Keyframe animation defines:

(A) Important frames

(B) All frames

(C) Random frames

(D) Pixels

98. Morphing is:

(A) Shape transformation

(B) Rotation

(C) Scaling

(D) Clipping

99. Types of animation include:

(A) 2D animation

(B) 3D animation

(C) Stop motion

(D) All of the above

100. Principle of animation includes:

(A) Timing

(B) Spacing

(C) Motion

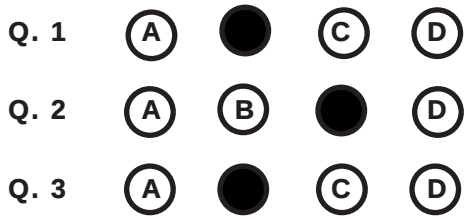
(D) All of the above

Rough Work

रफ कार्य

Example :

Question :

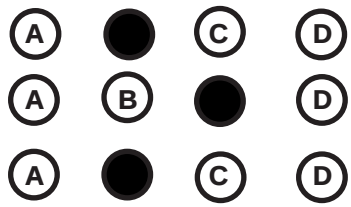


5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager & cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question booklet, then after showing it to the invigilator, get another question booklet of the same series.

उदाहरण :

प्रश्न :



5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ.एम.आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ.एम.आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा कक्ष में लॉग-बुक, कैल्कुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्न-पुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्न-पुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।