

Roll No.-----

प्रश्नपुस्तिका क्रमांक
Question Booklet No.

355526

O.M.R. Serial No.

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BCA (Fourth Semester) Examination, 2024-25

(NEP)

(BCA4001)

COMPUTER GRAPHICS & ANIMATION

K-696

Paper Code							
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(To be filled in the

प्रश्नपुस्तिका सीरीज
Question Booklet Series

B

SE

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.

(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 गए हों या प्रश्न एक से अधिक बार छप गए हो या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(शेष निर्देश अन्तिम पृष्ठ पर)

1. The _____ simply reads each successive byte of data from the frame buffer.
(A) Digital Controller
(B) Data Controller
(C) Display Controller
(D) All of the above
2. The refresh rate below which a picture flicker is :
(A) 25
(B) 30
(C) 35
(D) 60
3. _____ used to regulate the flow of elections in CRT ?
(A) Electron gun
(B) Focusing anode
(C) Control grid
(D) All of the above
4. The technique used to summarize the financial, statistical, mathematical, scientific and economic data is ?
(A) Computer Art
(B) Image processing
(C) Presentation Graphics
(D) None of the above
5. Graphics and image processing technique used to produce a transformation of one object into another is called :
(A) Animation
(B) Morphing
(C) Half toning
(D) None of the above

6. The amount of light emitted by the phosphor coating depends on the :
(A) Number of electrons striking the screen
(B) Speed of electrons striking the screen
(C) Distance from the cathode to the screen
(D) None of above
7. Gray scale is used in :
(A) A Monitor that have color capability
(B) A Monitor that have no color capability
(C) Random scan display
(D) Raster scan display
8. A wireless mouse works on :
(A) Infra blue radiation
(B) Infra Red radiation
(C) X-rays
(D) UV rays
9. Vector graphics is composed of :
(A) Pixels
(B) Paths
(C) Palette
(D) None of these
10. Raster graphics are composed of :
(A) Pixels
(B) Paths
(C) Palette
(D) None of these
11. EPS image file format is used for :
(A) Vector graphics
(B) Bitmap
(C) Both (A) & (B)
(D) None of these

12. TIFF (tagged image file format) are used for :
(A) Vector graphics
(B) Bitmap
(C) Both (A) & (B)
(D) None of these
13. Two dimensional color model are :
(A) RGB and CMKY
(B) RBG and CYMK
(C) RGB and CMYK
(D) None
14. RGB model are used for :
(A) Computer display
(B) Printing
(C) Painting
(D) None of these
15. CMYK model are used for :
(A) Computer display
(B) Printing
(C) Painting
(D) None of these
16. The intersection of three primary RGB color produces :
(A) White color
(B) Black color
(C) Magenta color
(D) Blue color
17. The intersection of primary CMYK color produces :
(A) White color
(B) Black color
(C) Cyan color
(D) Magenta color

18. Random scan systems are designed for :
- (A) Line drawing application
 - (B) Pixel drawing application
 - (C) Color drawing application
 - (D) None of these
19. A major disadvantage of DVST in interactive computer graphics is :
- (A) Ability to selectively erase part of an image
 - (B) Inability to selectively erase part of image from screen
 - (C) Inability to produce bright picture
 - (D) None
20. Which of the following allow for 8 mirror images ?
- (A) Parabola
 - (B) Ellipse
 - (C) Hyperbola
 - (D) Circle
21. The simplest output primitive is :
- (A) Straight line
 - (B) Straight line segment
 - (C) Point
 - (D) Circle
22. A bitmap is _____ bit (s) per pixels.
- (A) 0
 - (B) 1
 - (C) 2
 - (D) 4

23. The intensity of a grayscale pixel is expressed within a given range between a minimum and a maximum.
- (A) 1 and 2
 - (B) 2 and 1
 - (C) 0 and 1
 - (D) 0 and 2
24. Each pixel has _____ basic color components.
- (A) Two or three
 - (B) One or two
 - (C) Three or four
 - (D) None of these
25. The quality of an image depend on :
- (A) No. of pixel used by image
 - (B) No. of line used by image
 - (C) No. of resolution used by image
 - (D) None
26. The basic geometric structures that describes a scene on display is called :
- (A) Attributes
 - (B) Output primitive
 - (C) Lines
 - (D) Curves
27. _____ controls the basic display properties of output primitives.
- (A) Attribute parameter
 - (B) Set pixel
 - (C) Get pixel
 - (D) None of the above

28. To set line width attributes in a PHIGS package, _____ function is used.
- (A) Set Line Thickness (lw)
 - (B) Set Line Width (lw)
 - (C) Set Line Width Scale Factor (lw)
 - (D) Set Poly Line Width (lw)
29. Identify the values for fill-style parameter from the following :
- (A) Hollow
 - (B) Hatch
 - (C) Pattern
 - (D) All of the above
30. _____ function is used to set the basic fill style.
- (A) Set Fill Style (fs)
 - (B) Set Fill Style Index (fs)
 - (C) Set Interior Style (fs)
 - (D) Fill Type (ft)
31. _____ is defined as the distance between the baseline and cap line of the character body.
- (A) Character Size
 - (B) Character Height
 - (C) Character Width
 - (D) Character Length
32. _____ function is used to change the size of a character without changing the height:width ratio.
- (A) Set Text Size (ts)
 - (B) Set Character Height (ch)
 - (C) Set Character Size (cs)
 - (D) Set Text Height (th)

33. _____ will define a group of attribute values of each primitive to be used on a monitor.
- (A) Primitive table
 - (B) Bundle table
 - (C) Attribute table
 - (D) None of the above
34. _____ function is used to set how text is to be positioned with respect to the start coordinates.
- (A) Set Text Alignment (h,v)
 - (B) Set Text Precision (tp)
 - (C) Set T4ext Position (h,v)
 - (D) Set Text(ts)
35. _____ is used to check the current status of each attributes.
- (A) Set Pixel
 - (B) Get pixel
 - (C) Inquiry function
 - (D) Status function
36. The basic transformations include :
- (A) Translation
 - (B) Rotation
 - (C) Scaling
 - (D) All of the above
37. The transformation in which an object is moved in a minimum distance path from one position to another is called :
- (A) Rotation
 - (B) Replacement
 - (C) Translation
 - (D) Scaling

38. The translation distances (dx, dy) is called as :
(A) Translation vector
(B) Shift vector
(C) Both (A) and (B)
(D) Neither (A) nor (B)
39. The two dimensional translation equation in the matrix form is :
(A) $P' = P + T$
(B) $P' = P - T$
(C) $P' = P * T$
(D) $P' = p$
40. The transformation in which an object is moved from one position to another in circular path around a specified pivot point is called :
(A) Rotation
(B) Shearing
(C) Translation
(D) Scaling
41. The transformation in which the dimension of an object are changed relative to a specified fixed point is called :
(A) Rotation
(B) Reflection
(C) Translation
(D) Scaling
42. The transformation that produces a parallel mirror image of an object are called :
(A) Rotation
(B) Reflection
(C) Translation
(D) Scaling

43. If an object is rotated through an angle A in clockwise direction, the rotation matrix $R =$ _____.
- (A) $\begin{pmatrix} \cos A & \sin A \\ -\sin A & \cos A \end{pmatrix}$
- (B) $\begin{pmatrix} \cos A & -\sin A \\ \sin A & \cos A \end{pmatrix}$
- (C) $\begin{pmatrix} \sin A & \cos A \\ \cos A & \sin A \end{pmatrix}$
- (D) None
44. If a point (x,y) is reflected about an axis which is normal to the XY plane and passing through the origin, the reflected point (X,Y) is :
- (A) $(x, -y)$
- (B) $(-x, y)$
- (C) $(-x, -y)$
- (D) (y, x)
45. Reflection of a point about x -axis, followed by a counter-clockwise rotation of 90° , is equivalent to reflection about the line ?
- (A) $x = -y$
- (B) $x = 0$
- (C) $x = y$
- (D) $x + y = 1$
46. A circle, if scaled only in one direction becomes a ?
- (A) Hyperbola
- (B) Ellipse
- (C) Parabola
- (D) Remains a circle

47. (2,4) is a point on a circle that has center at the origin. Which of the following points are also on circle ?
- (A) (2, -4)
 - (B) (-2, 4)
 - (C) (-4, -2)
 - (D) All of the above
48. Which technique of color CRT is used for production of realistic image ?
- (A) Beam penetration
 - (B) Shadow mask
 - (C) Both (A) & (B)
 - (D) None of the above
49. A composite transformation matrix can be made by determining the _____ of matrix of the individual transformation.
- (A) Sum
 - (B) Product
 - (C) Difference
 - (D) None of the above
50. Each successive transformation matrix _____ the product of the preceding transformation.
- (A) Pre-multiplies
 - (B) Post-multiplies
 - (C) Adds
 - (D) Subtracts

51. Smallest size object that can be displayed on a monitor is called :
(A) Picture element
(B) Point
(C) Dot Pitch
(D) Aspect ratio
52. Each screen point is referred to as :
(A) Resolution
(B) Pixel
(C) Persistence
(D) Dot Pitch
53. On a monochromatic monitor, the frame buffer is known as :
(A) Display file
(B) Pixmap
(C) Bitmap
(D) Refresh buffer
54. On a color monitor, the refresh buffer is also called :
(A) Frame buffer
(B) Pixmap
(C) Bitmap
(D) Display file
55. _____ refers to pixel spacing.
(A) Pixmap
(B) Resolution
(C) Pixel depth
(D) Persistence
56. The distance from one pixel to the next pixel is called :
(A) Resolution
(B) Dot Pitch
(C) Pixmap
(D) ppi

57. The maximum number of points that can be displayed without overlap on a CRT :
(A) Aspect Ratio
(B) Resolution
(C) Brightness
(D) Pixel
58. _____ is the number of points per centimeter that can be plotted horizontally and vertically.
(A) Aspect Ratio
(B) Pixel Depth
(C) Resolution
(D) Dot Pitch
59. _____ is the ratio of horizontal points to vertical points necessary to produce equal length lines in both direction.
(A) Dot Pitch
(B) Resolution
(C) Aspect Ratio
(D) Height-Width Ratio
60. Identify the odd one out from the following :
(A) Frame Buffer
(B) Pixmap
(C) Display program
(D) Refresh Buffer
61. The shortest distance between any two dots of the same color is called :
(A) Resolution
(B) Dot Pitch
(C) Pixel Depth
(D) ppi

62. The standard aspect ratio for PC is :
(A) 6:5
(B) 4:3
(C) 3:2
(D) 5:3
63. In CRT, the electron intensity is adjusted using :
(A) Accelerating anode
(B) Control grid
(C) Electron gun
(D) Focusing anode
64. Brightness of a display is controlled by varying the voltage on the :
(A) Focusing anode
(B) Connection pins
(C) Control grid
(D) Power supply
65. Lower persistence phosphorus is used in :
(A) Animation
(B) Simple object
(C) Complex object
(D) All of these
66. Lower persistence phosphorus needs _____ refresh rate.
(A) Lower
(B) Higher
(C) Medium
(D) None of these
67. Higher persistence phosphorus needs _____ refresh rate.
(A) Lower
(B) Higher
(C) Medium
(D) None of these

68. Higher persistence phosphorus is used in :
(A) Animation
(B) Simple object
(C) High Complex object
(D) All of these
69. Memory area holding the intensity information of an image is called :
(A) Refresh buffer
(B) Font cache
(C) Picture definition
(D) Video controller
70. Intensity representation of an image is called :
(A) Frame buffer
(B) Picture definition
(C) Display list
(D) Brightness
71. The purpose of refreshing a CRT is :
(A) To avoid flickering
(B) To maintain steady picture
(C) To avoid fading of pixels
(D) All of the above
72. The fly-back of electron beams from one scanline to next is known as :
(A) Vertical Retrace
(B) Horizontal Retrace
(C) Raster scanning
(D) Refreshing
73. The return of electron beam to top left corner of the screen after one frame is called:
(A) Horizontal Fly-back
(B) Vertical Fly-back
(C) Scanning
(D) None of the above

74. In raster scan display, the frame buffer holds :
- (A) Line drawing commands
 - (B) Scanning instructions
 - (C) Image Resolution
 - (D) Intensity information
75. In random scan display, the frame buffer holds :
- (A) Line drawing commands
 - (B) Scanning instructions
 - (C) Image Resolution
 - (D) Intensity information
76. Identify the odd one out from the following :
- (A) Vector display
 - (B) Raster scan display
 - (C) Calligraphic display
 - (D) Stroke-writing display
77. Interlaced refresh procedure is allowed in :
- (A) LCD
 - (B) DVST
 - (C) Raster scan display
 - (D) Random scan display
78. Vector display is well suited for :
- (A) Animation
 - (B) Line drawing applications
 - (C) Cartoons
 - (D) All of the above
79. Beam penetration method is usually used in :
- (A) LCD
 - (B) Raster Scan display
 - (C) Random scan display
 - (D) DVST

80. Shadow mask method is usually used in :
(A) LCD
(B) Raster Scan display
(C) Random scan display
(D) DVST
81. Identify the colors produced in beam penetration method :
(A) Red, Green, Blue, White
(B) Red, Orange, Yellow, Green
(C) Red, Green, Blue
(D) Green, Red, White, Orange
82. An RGB color system with 24 bits of storage per pixel is known as :
(A) Color CRT
(B) True-color system
(C) RGB monitor
(D) Color-Depth
83. Identify the features of Vector display
(A) High resolution, Jagged lines, Lack in color depth
(B) Smooth lines, Poor resolution, Black & White
(C) High resolution, Lack in color depth, Smooth lines
(D) Inexpensive, monochromatic, smooth lines
84. Identify different type of computer graphics :
(A) Monochrome and Color
(B) CRT and Flat panel
(C) Vector and Raster
(D) Monitors and Hardcopy devices
85. DVST stands for :
(A) Digital View Storing Table
(B) Direct Visual Storage Tube
(C) Direct View Storage Tube
(D) Digital View Storage Tube

86. Refreshing is not needed in DVST because of the presence of :
- (A) Primary gun
 - (B) Flood gun
 - (C) Focusing anode
 - (D) Control grid
87. In DVST, the electron beam from primary electron gun strikes on :
- (A) Phosphor screen
 - (B) Collector mesh
 - (C) Storage mesh
 - (D) Flood gun
88. The purpose of flood gun in DVST is :
- (A) To store the picture pattern
 - (B) To slow down the flood electrons
 - (C) To enable color pixels
 - (D) To focus the electron beam
89. Identify the features of DVST from the following :
- (A) Monochromatic, Flicker free, Low resolution
 - (B) Monochromatic, Flicker free
 - (C) Color screens, Refresh monitors, High resolution
 - (D) Expensive, Low resolution
90. Video devices with reduced volume, weight and power consumption are collectively known as :
- (A) Light weight monitors
 - (B) Flat-panel displays
 - (C) CRT
 - (D) Portable display

91. Pick out the odd one out :

- (A) LED
- (B) LCD
- (C) Gas Discharge tube
- (D) Plasma Panel

92. Match the following :

Part A

Part B

- | | |
|----------------------------------|-----------------------|
| (a) Plasma panel | (i) Polarizer |
| (b) DVST | (ii) Zinc sulfide |
| (c) LCD | (iii) Dielectric mesh |
| (d) Thin film electroluminescent | (iv) Neon gas |

- | | | | |
|-------------|----------|---------|---------|
| (A) a - ii, | b - iv, | c - i, | d - iii |
| (B) a - ii, | b - iii, | c - iv, | d - i |
| (C) a - iv, | b - iii, | c - i, | d - ii |
| (D) a - i, | b - iv, | c - ii, | d - iii |

93. _____ is responsible for accessing the frame buffer to refresh the screen.

- (A) Graphics package
- (B) Video controller
- (C) CPU
- (D) Monitor

94. Digitizing a picture definition into a set of intensity values is known as :

- (A) Digitization
- (B) Scan conversion
- (C) Refreshing
- (D) Scanning

95. _____ will free the CPU from graphics chores.
- (A) Display processor
 - (B) Monitor
 - (C) ALU
 - (D) Video controller
96. Write an example for non-emissive displays :
- (A) LED
 - (B) LCD
 - (C) Gas Discharge tube
 - (D) Plasma Panel
97. Identify impact printer from the following :
- (A) Drum Plotter
 - (B) Inkjet Printer
 - (C) Electrostatic Printer
 - (D) Dot-matrix Printer
98. Write an example for non-impact printer :
- (A) Drum Plotter
 - (B) Electrostatic Printer
 - (C) Laser Printer
 - (D) All of the above
99. Identify the odd one out :
- (A) Mouse
 - (B) Keyboard
 - (C) Trackball
 - (D) Space ball
100. GIF stands for :
- (A) Global Image Format
 - (B) Graphics Interchange Format
 - (C) Graphics Image Format
 - (D) None of the above

4. Four alternative answers are mentioned for each question as – A, B, C & D in the question booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

Example :

Question :

Q. 1 (A) ☒ (C) ☐ (D)

Q. 2 (A) ☐ (B) ☒ (D)

Q. 3 (A) ☒ (C) ☐ (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

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 and 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.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर— A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से एक सही उत्तर छँटना है। उत्तर को OMR आन्तर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

उदाहरण :

प्रश्न :

प्रश्न 1 (A) ☒ (C) ☐ (D)

प्रश्न 2 (A) ☐ (B) ☒ (D)

प्रश्न 3 (A) ☒ (C) ☐ (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उत्तर निरस्त कर दिया जाएगा।

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 के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, 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 : प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।