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**BCA Semester - V**  
**EXAMINATION APRIL 2024**  
**Computer Science Elective - Computer Graphics**

[Time: 2:00 Hours]

[Max. Marks:60]

- Instructions:** i) All questions are compulsory  
 ii) Figures to the right indicate full marks

**Q1 A. Fill in the blanks with appropriate answer:** **5x1=05**

1. The procedure that identifies the portions of a picture that are either inside or outside of a specified region of space is known as \_\_\_\_\_.
2. The process of producing the image in the form of discrete pixels, it is called as \_\_\_\_\_.
3. The 2D transformation of moving an object from one position to another in a 2D plane is known as \_\_\_\_\_.
4. The test that is performed to check whether a given point lies inside of a closed polygon or not is known as \_\_\_\_\_.
5. A collection of edges, vertices and polygons connected such that each edge is shared by at most two polygons is known as \_\_\_\_\_.

**B. State whether the following statements are TRUE or FALSE:** **5x1=05**

1. Random scan technique is a polygon drawing method.
2. The number of horizontal and vertical pixels on a display screen is called as resolution.
3. Reflection in computer graphics is a kind of rotation where the angle of rotation is 90 degrees.
4. Pen tablet is a graphical output device.
5. In a boundary fill algorithm, the boundary color must be different from the fill color.

**Q2 A. Define** **02**

- i. Pixel
- ii. Aspect Ratio

	B. Write a note on Random Scan system.	03
	C. Write any five applications of Computer Graphics.	05
Q3	A. Write a note on Bresenham's Circle drawing algorithm.	02
	B. Write the steps of DDA Line Drawing Algorithm.	03
	C. Explain the steps required to fill a polygon using boundary fill technique.	05
Q4	A. Define	02
	i. World Co-ordinate system	
	ii. Physical Device Co-ordinate System	
	B. Given a polygon with coordinate points A(0, 3), B(3, 3), C(3, 0), D(0, 0). Apply the scaling parameter 2 towards X axis and 3 towards Y axis and obtain the new coordinates of the object. Draw the polygon before scaling and after scaling	03
	C. Explain Window to viewport transformation.	05
Q5	A. State the purpose of Surface Rendering for 3D objects.	02
	B. Write a note on	03
	i. Parallel Projection	
	ii. Perspective Projection	
	C. Explain the following methods used to represent polygons:	05
	i. Polygon Tables	
	ii. Polygon Mesh	
Q6	A. Write any two characteristics of Bezier Curve.	02
	B. Define Computer Animation. Write any two applications of Computer Animation.	03
	C. Differentiate between interpolation spline and approximation spline.	05

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B.C.A. Semester - V  
**EXAMINATION APRIL 2024**  
 Computer Science Elective - Cyber Security

[Time: 2:00 Hours]

[Max. Marks: 60]

- Instructions: i) All questions are compulsory  
 ii) Figures to the right indicate full marks

Q1 A. Fill in the blanks with most appropriate answer: 5 X 1 = 5

- i. Tiny, transparent graphic images embedded in emails, websites, or online content with purpose of email marketing and online advertising is called as \_\_\_\_\_
- ii. A tool that allows sharing files of any size anonymously using the Tor hidden network is known as \_\_\_\_\_
- iii. Cryptographic technique used to verify the authenticity and integrity of digital messages, documents, or software is known as \_\_\_\_\_
- iv. A cyberattack wherein an attacker overwhelms a victim's email inbox by sending a large volume of emails is referred to as \_\_\_\_\_
- v. \_\_\_\_\_ is the act of searching for Wi-Fi wireless networks, by driving around in a vehicle with a computer or other wireless-enabled device.

B. Match the columns

5 X 1 = 5

- | A                                   | B                            |
|-------------------------------------|------------------------------|
| i. Integrity                        | a) Forensic Analysis         |
| ii. Asymmetric Encryption Algorithm | b) Preserve Digital Evidence |
| iii. White collar crime             | c) Protection of Information |
| iv. Drive Imaging                   | d) Diffie-Hellman            |
| v. Network Miner                    | e) Ponzi Scheme              |

Q2 A. What is Digital Privacy? Why is it important to maintain Digital Privacy over the Internet? 2

B. Explain the THREE objectives of Cyber Security. 3

- C. State any FIVE points to create secure passwords. 5
- Q3 A. Differentiate between Encryption and Cryptography. 2
- B. Explain the 3 layers of the Dark net. 3
- C. What do you mean by a Tor Network? Explain its working with the help of a suitable diagram 5
- Q4 A. Define the following terms: 2
- a) Brute Force Attack
- b) Man-in-the-Middle Attack
- B. Using suitable diagrams explain the Encryption and Decryption Process. 3
- C. Explain any TWO counter measures to be taken against Cryptographic Attacks. 5
- Q5 A. Why is Software Piracy considered a crime? 2
- B. What do you understand by the term Password Cracking? Explain any TWO techniques. 3
- C. State FIVE the characteristics for digital evidence to be accepted in the Court of Law. 5
- Q6 A. Explain the term Network Forensics. 2
- B. What locations of the Windows must be searched by Forensic Investigators for evidence? 3
- C. Explain the steps involved in Forensic Analysis. 5

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BCA Semester - V  
EXAMINATION APRIL 2024

Information System

[Time: 2:00 Hours]

[Max. Marks:60]

- Instructions:**i) All questions are compulsory.  
ii) Figures to the right indicate full marks.

**Q1 A. Expand the following Abbreviations:**

(5x1=5)

- a. OLAP
- b. CRM
- c. SCM
- d. ERP
- e. ESS

**B. State True or False:**

(5x1=5)

- a. Explicit Knowledge is found in databases, memos, notes and documents.
- b. Enterprise software is built around several pre-defined business processes to reflect the best practices.
- c. ERP is a system that captures and integrates customer data, consolidates, analyse, distribute to various systems and customer touch points across the enterprise.
- d. Transaction Processing System was also known as Management Information System.
- e. The timescale of operational information is usually shorter than Strategic information.

Q2	A. What is an Expert System?	02
	B. Briefly explain any three quality attributes of Information.	03
	C. Write a note on functions of MIS	05
Q3	A. What are the challenges of SCM?	02
	B. Explain Case Based Reasoning.	03
	C. What are the limitations of ESS?	05
Q4	A. What is Data Mining?	02
	B. Explain intelligent techniques of knowledge management systems.	03
	C. What is CRM system? Describe operational and Analytical CRM.	05
Q5	A. What is decision tree?	02
	B. Explain the types of decisions.	03
	C. Explain TPS. What are the two types of transaction processing in TPS?	05
Q6	A. Give any two benefits of data warehouse in IS.	02
	B. Give any three advantages of office automation.	03
	C. Explain any 5 data mining techniques.	05

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**B.C.A Semester - V**  
**EXAMINATION APRIL 2024**  
**Computer Science Elective -Mobile Application Development**

[Time: 2:00 Hours]

[Max. Marks:60]

**Instructions:**1) Question 1 – 6 are compulsory.  
 2) Figure to the right indicates full marks.

- Q1 A. Define the following:** **5\*1=05**
- What is requestLocationUpdates()?
  - What is an API key?
  - Give one use of Progress Bar.
  - Give the query string for listing of calls registered in the Call Log.
  - State any two attributes of imageView.
- B. Fill in the blanks:** **5\*1=05**
- The \_\_\_\_\_ is a software development kit that includes a comprehensive set of development tools.
  - The \_\_\_\_\_ method, provides a Bundle object as an argument so that you can use it to save your activity's state.
  - \_\_\_\_\_ is the recommended unit for specifying the dimension of views in your layout.
  - \_\_\_\_\_ method is called when the content provider is started.
  - \_\_\_\_\_ property is used to display the hint text when EditText is empty.
- Q2**
- |           |   |           |
|-----------|---|-----------|
| <b>A.</b> | What is a web view?   | <b>02</b> |
| <b>B.</b> | Write a note on Requirement Gathering techniques for Mobile Applications.     | <b>03</b> |
| <b>C.</b> | Write on five major development approaches when building mobile applications. | <b>05</b> |
- Q3**
- |           |  |           |
|-----------|--|-----------|
| <b>A.</b> | What is Pending intent?                                | <b>02</b> |
| <b>B.</b> | Explain the use of intent with the help of an example. | <b>03</b> |
| <b>C.</b> | Explain the life cycle of a Fragment.                  | <b>05</b> |
- Q4**
- |           |   |           |
|-----------|---|-----------|
| <b>A.</b> | What is Options menu?   | <b>02</b> |
| <b>B.</b> | Explain any three attributes found in Anchoring view.                               | <b>03</b> |
| <b>C.</b> | Explain view and view groups. Give list of attributes used in view and view groups. | <b>05</b> |

- Q5
- A. Give two uses of an Image Button. 02
  - B. Write a note on filtering with an example. 03
  - C. Compare and explain EditText and AutoCompleteTextView with examples. 05
- Q6
- A. Write a note on external storage. 02
  - B. Discuss displaying map in android. 03
  - C. Explain the basic ways of handling persisting data in Android. 05



**Q3 Answer the following questions:**

- a. Describe the role of XML namespaces. 2
- b. What are XML Schemas and how do they differ from DTDs? 3
- c. Explain how XSLT transforms XML documents. Include an example in your explanation. 5

**Q4 Answer the following questions:**

- a. Why is client-side validation important in web development? 2
- b. Provide an example of using loops in JavaScript for DOM manipulation. 3
- c. Discuss the benefits of using JSON for data interchange. 5

**Q5 Answer the following questions:**

- a. Explain the concept of CRUD operations and its importance in web applications. 2
- b. How do sessions and cookies contribute to web security and user experience? 3
- c. Describe the process of report generation in server-side scripting. 5

**Q6 Answer the following questions:**

- a. Define MVC architecture and its components. 2
- b. Illustrate the concept of domain names and how they are resolved. 3
- c. Evaluate the principles of web security, focusing on cryptography and digital signatures. 5