



'समाजो मन्त्रः समितिः समानी'

**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 4th Semester Examination, 2022

**SEC1-P2-COMPUTER SCIENCE**

Time Allotted: 2 Hours

Full Marks: 60

*The figures in the margin indicate full marks.*

**The question paper contains SEC-45: E-1 and SEC-45: E-2 and SEC-45: E-3**

**The candidates are required to answer any *one* from *three* courses**

**Candidates should mention it clearly on the Answer Book.**

**SEC-45: E-1**

**ANDROID PROGRAMMING**

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|-----|--|--------------------|
| 1.  | Answer any <i>four</i> questions:  | $3 \times 4 = 12$  |
| (a) | What is Hardware Abstraction Layer (HAL)?  | 3                  |
| (b) | What is Android virtual device?  | 3                  |
| (c) | What is the difference between overloading and overriding?   | 3                  |
| (d) | What is JVM and DVM?   | 3                  |
| (e) | Explain Fragments in Android.  | 3                  |
| (f) | What are the features of Android SDK?  | 3                  |
| 2.  | Answer any <i>four</i> questions:  | $6 \times 4 = 24$  |
| (a) | Explain Android Activity Life cycle.   | 6                  |
| (b) | What are the different ways to store data in Android from an application? Give example.                    | 6                  |
| (c) | Write short note on the following:<br>(i) Text Field, (ii) Button Control (iii) Dialog.                    | 6                  |
| (d) | What is Emulator in Android development tool? Explain.   | 6                  |
| (e) | Explain the following layouts with example:<br>(i) Relative Layout (ii) Frame Layout.                      | 6                  |
| (f) | Write short note on 'Intents'.   | 6                  |
| 3.  | Answer any <i>two</i> questions:   | $12 \times 2 = 24$ |
| (a) | Create an Android application to display some web content using Web View.<br>How to deploy it on a device? | 12                 |
| (b) | Explain SQLite database in Android by giving an example of an application connected to the database.       | 12                 |
| (c) | How to create services on an Android application. Give example and explain it.                             | 12                 |

- (d) Create a simple registration form and display the entered data in Android with proper validation check.

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**SEC-45: E-2**  
**PROGRAMMING IN MATLAB**

**GROUP-A**

**Answer any *four* questions**

$3 \times 4 = 12$

1. What are the different components of computer?
2. What are variables?
3. Name some built in functions in MATLAB.
4. What are Waveforms in MATLAB?
5. What are M-files?
6. Write the code in MATLAB to add two matrices.

**GROUP-B**

**Answer any *four* questions**

$6 \times 4 = 24$

7. Demonstrate arguments and return values in MATLAB with the help of an example.
8. Write a program in MATLAB to find the determinant of a matrix.
9. Draw a graph that joins the points (1, 0), (5, 4) and (2, 1).
10. Discuss assignment statement in MATLAB with the help of examples.
11. Write a program in MATLAB to arrange ‘n’ numbers in descending order.
12. Discuss ‘if-else’ in MATLAB.

**GROUP-C**

**Answer any *two* questions**

$12 \times 2 = 24$

13. Write a program in MATLAB to demonstrate binary division with the help of an example.
14. Write a program in MATLAB to demonstrate polynomial multiplication with the help of an example.

15. Explain different types of loops in MATLAB with the help of an example.
16. Write a program in MATLAB to read a text file containing integers and search a particular item from the list using binary search.

**SEC-45: E-3**

**VB.NET PROGRAMMING**

**GROUP-A**

**Answer any *four* question**

$3 \times 4 = 12$

1. What is Class library with reference to .Net framework?
2. What is IntelliSense? Mention any two types.
3. Explain the use of Val() and Str() functions.
4. What does Option Explicit refer to?
5. What is Collection?
6. Explain SDI and MDI.

**GROUP-B**

**Answer any *four* questions**

$6 \times 4 = 24$

7. Explain the following parts of VB IDE.
  - (a) Properties Window
  - (b) Code Window
  - (c) Toolbox
8. Explain MsgBox() function with syntax and example.
9. Write the syntax and explain InputBox() function.
10. Write the codes for the following:
  - (a) To add a string in a listbox
  - (b) To delete a given string from a listbox
  - (c) To check if a given string is present in a listbox or not
11. Explain any six noteworthy public properties of textbox.
12. Explain the use of timer control with its different events and properties.

**GROUP-C**

**Answer any *two* questions**

$12 \times 2 = 24$

13. What do you mean by visual and non-visual programming, Procedural and Object Oriented Programming? Explain in detail.
14. What is an Array? Explain the difference static and dynamic array with example. Explain the use of control array in VB.NET with proper example.
15. Explain the different types of conditional statements and iterative statements used in VB.NET with examples.
16. Explain user defined function and procedures with examples. What is MSIL and CLR? Describe the methodology to create a menu in VB.NET.

—X—