UNIVERSITY OF NORTH BENGAL

BCA Honours 4th Semester Examination, 2023

SEC1-P2-BACHELOR OF COMPUTER APPLICATION (45)

Time Allotted: 2 Hours   Full Marks: 60

The figures in the margin indicate full marks
All symbols are of usual significance..
Answer all questions with internal choices.

The question paper contains SEC45:E1, SEC45:E2 and SEC45:E3
The candidates are required to answer any *one* from *three* courses.
Candidates should mention it clearly on the Answer Book.

SEC45:E1

ANDROID PROGRAMMING

GROUP-A

Answer any *four* questions   3×4 = 12

1. Write a note on Android Development Environment.
2. Discuss the directory structure of an Android Project.
3. Describe these App components – Activity and Threads.
4. Write the syntax for Intent-Filter tag with example.
5. Define services in Android Operating System.
6. Differentiate JVM and DVM.

GROUP-B

Answer any *four* questions   6×4 = 24

7. Describe the Android architecture in detail.
8. Develop an App and make use of checkbox and radio buttons.
9. Explain the activity life cycle.
10. Explain Data and Time picker with its methods.
11. List features of Android Operating System.
12. Explain any four UI Components of Android application.

GROUP-C

Answer any *two* questions   12×2 = 24

13. Explore the steps to install and configure Android Studio and SDK.
14. Describe the significance of SQLite database in Android.
15. Develop an application to store student details like roll no., name, branch, marks, percentage and retrieve student information using roll no. in SQLite database.
16. Develop a simple calculator using table layout.

SEC45:E2
PROGRAMMING IN MATLAB
GROUP-A
Answer any *four* questions   3×4 = 12

1.   What is the difference between command window and work space?

2.   How do you represent "AND", "OR" and "NOT" in MATLAB?

3.   How the strings will be handled using MATLAB?

4.   What is the order of precedence for calculations in MATLAB?

5.   How to find roots of a given polynomial using MATLAB?

6.   What are quad and trapz commands?

GROUP-B
Answer any *four* questions   6×4 = 24

7.   Discuss about the following functions with examples used in MATLAB program: (i) Zeros ()   (ii) Ones ()   (iii) Eye ()

8.   What are special graphs in MATLAB? What is Polyfit function in MATLAB?

9.   Describe various options available in the menus and toolbars in MATLAB software.

10.   List various relational operators available in MATLAB with detailed description.

11.   How do you find derivative of given polynomial using MATLAB?

12.   Describe conv and deconv commands with an example.

GROUP-C
Answer any *two* questions   12×2 = 24

13.   Describe any six elementary Math functions and six rounding functions with an example in MATLAB.   12

14.(a) Explain structure of function in MATLAB.   6+6

   (b) Describe Nested function with an example.

15.(a) Illustrate Nested Loops and Nested Conditional Statements.   6+6

   (b) Compare Script Files and Function Files.

16.   Two vectors are given: 4+4+4

   $U = 3i + 8j - 2k$ and $V = 6.5i - 5j - 4k$

   Use MATLAB to calculate the dot product of the vectors in three ways:

   (i)   Using element-by-element calculation and the MATLAB built-in function.

   (ii)   Using row vector and column vector.

   (iii) Use the MATLAB built-in function.

SEC45:E3

VB.NET PROGRAMMING

GROUP-A

Answer any *four* of the following   3×4 = 12

1.   Explain OLE.

2.   Name of three properties of timer control.

3.   What is the Class library with reference to .NET framework?

4.   What are the components of the .NET framework?

5.   Write the syntax of MsgBox() function.

6.   Explain ArrayList with an example.

GROUP-B

Answer any *four* of the following   6×4 = 24

7.   Explain Interface-based Polymorphism.

8.   What is an Array? Explain the difference between static and dynamic array with examples.

9.   Explain declaration of function in detail with examples.

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 the following with properties and methods:
      (a) ComboBox   (b) ListBox

12.   Explain all basic data types in VB.NET.

GROUP-C

Answer any *two* of the following   12×2 = 24

13.   Explain VB.NET IDE in detail.

14.   What are MDI Forms? Write the properties of PARENT and CHILD FORMS.

15.   What do you mean by visual and non-visual programming, procedural and object-oriented programming? Explain in detail.

16.   Write code to create a console application in VB.NET that determines whether a number is prime or not.

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