

2025

5th Semester Examination (CCFUP : NEP)

COMPUTER SCIENCE

Paper : MDSE 1-T  
(Single Core Major Elective - 1)

Full Marks : 40

Time : Two Hours



*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

[Programming in Java]

Group - A

Answer any *five* questions : 2×5=10

1. Define 'byte code'. What is meant by specific import?
2. How multilevel inheritance is done in Java? Show with example and show calling sequence of constructors.
3. Give difference between overloading and overriding of methods in Java.
4. The 'String' type is not a primitive type, but known as a reference type. Justify.
5. Differentiate between final, finally and finalize in Java.

P.T.O.

6. Define Encapsulation and Abstraction.

7. What is the need for an interface?

8. What do you mean by connection pooling?

**Group - B**

Answer any *four* questions : 5×4=20

9. Describe different data types and operators in Java with all examples.

10. What is event handling? Describe different mechanisms.

11. (i) What is a package? Explain the different access controls for packages in Java.

(ii) Explain operators with reference to Java. Explain two-dimensional array with example. (1+1)+(2+1)

12. (i) What is wrapper class? Give example.

(ii) Sketch the life cycle of applet. 2+3

13. (i) "Java is a platform-independent Language" — Justify the statement.

(ii) What is the difference between run time polymorphism and compile time polymorphism? 3+2

14. (i) What are meant by local applet and remote applet?

(ii) How does an application differ from an applet? 2+3



**Group - C**

Answer any *one* question : 10×1=10

15. (i) What is thread? How to create a thread in Java?

(ii) What is the difference between the character stream and byte stream?

(iii) How to override the toString function? (2+2)+3+3

16. (i) What is the difference between interface and abstract class?

(ii) What is autoboxing?

(iii) What is checked and unchecked exception? Explain with proper examples.

(iv) How exceptions are handled in Java? Give examples. 2+2+(2+2)+2





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OR

[VB.NET]

Group - A

Answer any *five* questions :  $2 \times 5 = 10$

1. List out the different types of applications that can be created on .net.
2. List down the events in the life cycle of a web page.
3. How to add the server-side controls to a web form?
4. What is the use of a data set in ADO.NET?
5. Discuss the reason for doing the Serialization of the object.
6. Why do we need a virtual directory?
7. Name the benefits provided by XML classes in .NET.
8. List the information stored in the configuration file for remoting.

Group - B

Answer any *four* questions :  $5 \times 4 = 20$

9. What are the steps to link SQL Server with ADO.NET?
10. Explain how to create an MDI Form with an example.
11. How can we create class and data members in VB.NET?

VN-5/50 - 500

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12. Describe how to read and write the streamed XML in .NET.

13. Explain briefly about the following features of ADO.NET :

- (i) Handling Exceptions
- (ii) Validating Controls

14. Illustrate standard controls and components of Windows Forms in .NET.

Group - C

Answer any *one* question :  $10 \times 1 = 10$

15. Explain in detail about Session Management Techniques and creation of a Virtual directory for a Web application using ASP.NET.  $5+5$
16. Write short notes on the following (any *two*) :  $5 \times 2 = 10$ 
  - (i) JIT compilation
  - (ii) Garbage collection
  - (iii) CLR

VN-5/50 - 500



P.T.O.



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OR

[MATLAB Programming]

Group - A

Answer any *five* questions : 2×5=10

1. Define machine code.
2. What is the use of eye() function?
3. What is the difference between a script file and a function file in MATLAB?
4. What is the difference between while loop and for loop?
5. Define array indexing in MATLAB.
6. What is the use of load and save commands?
7. Define GUI in MATLAB.
8. How row vector and column vector are represented in MATLAB?

Group - B

Answer any *four* questions : 5×4=20

9. Explain basic plotting commands in MATLAB with example.
10. Write a MATLAB program to convert Celsius temperature to Fahrenheit.

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11. Mention different types of conditional statements and loop control statements.
12. Illustrate how standard menu for a GUI can be created in MATLAB.
13. Write a program to read from and write to a text file in MATLAB.
14. Explain string manipulation with example.

Group - C

Answer any *one* question : 10×1=10

15. Describe various MATLAB file types. Briefly explain importing and exporting excel data files in MATLAB. 4+6
16. Write brief note about User-defined functions in MATLAB. Generate a 500 Hz sine wave for 1 second with sampling rate 11025 Hz in MATLAB. 3+7





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OR

**[ANDROID Programming]**

**Group - A**

Answer any *five* questions : 2×5=10

1. What does JVM stand for, and what is its primary role in Java?
2. Define the concept of Polymorphism in object-oriented programming.
3. What is the purpose of an Emulator (Virtual Machine) in Android development?
4. What is SQLite?
5. What is the function of a Toggle Button in an Android UI?
6. What is meant by Method Overriding?
7. List two types of Layouts used in User Interface Design.
8. What is the main purpose of the Android Development Tools (ADT) plug-in?

**Group - B**

Answer any *four* questions : 5×4=20

9. Explain the different states of the Activity life cycle.
10. Explain the concepts of Interfaces and Abstract classes in the context of Java OOP.

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11. How does Android handle multiple screen sizes within its UI architecture?
12. Discuss the purpose of Intents in Android? What are the different types of intents? 3+2
13. Write down the steps to create a dialog box in android.
14. Describe the process of creating a simple "Hello World" project and running it on an emulator.

**Group - C**

Answer any *one* question : 10×1=10

15. Explain Android Architecture in detail with a neat diagram.
16. Explain the following UI controls in Android :  
Text Fields, Buttons, Spinner, Menu.

