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**ND—13—2023**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**B.Sc. (CS) (Fourth Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(CBCS/Revised Pattern)**

**COMPUTER SCIENCE**

**Paper-AF-18**

**(Programming in Java)**

**(Saturday, 2-12-2023)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :—* (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if required.

(iv) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) :

15

(a) Explain final variables in Java.

(b) Explain 'this' keyword in detail.

(c) Explain Java operators in detail.

(d) Explain finally clause in detail.

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- (e) Explain String Buffer class in detail.
- (f) Explain constructor overloading in detail.
- (g) Explain Inner class in detail.
2. Attempt any *three* of the following (5 marks each) : 15
- (a) Explain architecture of JVM in detail.
- (b) Explain visibility controls in Java
- (c) Explain inheritance and its types in detail.
- (d) Explain string class and its methods.
- (e) Explain exception handling using try and catch blocks.
3. Attempt any *three* of the following (5 marks each) : 15
- (a) What is package ? Explain creating and accessing packages in Java.
- (b) Explain final method and final class.
- (c) Explain byte stream classes with a example.
- (d) Explain architecture of JDBC with diagram.
- (e) Explain statement and prepared statement in detail.
4. Attempt any *three* of the following (5 marks each) : 15
- (a) Explain ResultSet and ResultSetMetaData in detail.
- (b) Explain JDBC drivers and its types.
- (c) Explain character stream classes in detail.
- (d) What is Interface ? Explain defining and implementing interface.
- (e) Write a program to demonstrate method overriding.

5. Attempt any *three* of the following (5 marks each) :

15

- (a) What is serialization ? Explain the process of serialization.
- (b) Explain creating user defined exceptions.
- (c) Explain the use of super keyword with example.
- (d) Write a program to establish a communication with database using JDBC.
- (e) Explain creating files and directories with example.