

**M. SC. BIOINFORMATICS SEM.-II (C.B.C.S.) (2013 COURSE) /**  
**ADVANCED DIPLOMA IN BIOINFORMATICS SEM.-II**  
**(C B C S ) (2013 COURSE) : WINTER - 2017**  
**SUBJECT : Java & Biojava Programming**

Date: **Friday**  
Day: **03/11/2017**

**W-2017-1013**

Time: **10.00 AM TO 01.00 PM**  
Max. Marks.60

**N.B.**

- 1) **Q.1 & Q. 5 are compulsory**
- 2) Attempt any two questions from **Q.2 to Q.4** from **Section- I** & any **two questions** from **Q.6 to Q.8** from **sections – II**
- 3) Answers to both the sections should be written in **SEPARATE** answer books.
- 4) Figures to the right indicate **FULL** marks.
- 5) Draw neat and labeled diagrams **WHEREVER** necessary

**SECTION-I**

- Q.1** Explain the following: **(10)**
- a) Byte code
  - b) Arrays
  - c) JAVA language of internet
  - d) Security in JAVA
  - e) Garbage collection
- Q.2** Answer the following: **(ANY TWO)** **(10)**
- a) Explain JVM architecture.
  - b) Explain characteristics of OOPS and explain how JAVA is purely OOP language.
  - c) Explain with example
    - i) Ternary operator
    - ii) Logical operator
- Q.3** Answer the following: **(ANY TWO)** **(10)**
- a) Explain finally block in exception handling with example.
  - b) Explain the need and use of try and catch keyword.
  - c) What is user defined exception? Explain with example.
- Q.4** Write a program to determine adjacent of 2 D matrix. **(10)**

**OR**

Write a program to print table of 1 to 10 using 2 D Array.

**SECTION-II**

- Q.5** Explain the following: **(10)**
- a) Thread Class
  - b) Extends keyword
  - c) Polymorphism
  - d) Implements keyword
  - e) Abstract class

**P.T.O.**

**Q.6** Answer the following: **(ANY TWO)** **(10)**  
a) Explain use of super keyword with example.  
b) Explain operator overloading and method overriding.  
c) Write a program to demonstrate use of this keyword and explain multiple inheritance in JAVA.

**Q.7** Answer the following: **(ANY TWO)** **(10)**  
a) Explain keyword listener interface with example.  
b) Explain components of AWT.  
c) Write an applet program for mouse event.

**Q.8** Write short notes on: **(ANY TWO)** **(10)**  
a) Deadlock in multithreading  
b) Life cycle of thread and applet  
c) Serializable interface

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