

B.Tech 5th Semester Exam., 2017**INTRODUCTION TO JAVA PROGRAMMING
LANGUAGE**

Time : 3 hours

Full Marks : 70

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **NINE** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question No. 1 is compulsory.

1. Choose the correct answer of any *seven* of the following : 2×7=14

- (a) Size (in bytes) of float and double in Java is
 - (i) 4 and 8
 - (ii) 8 and 8
 - (iii) 4 and 4
 - (iv) 8 and 4
- (b) Which of the following operators is used to allocate memory to array variable in Java?
 - (i) malloc
 - (ii) alloc
 - (iii) new
 - (iv) new malloc

- (c) Which of the following is an incorrect array declaration?
 - (i) `int arr[] = new int[5]`
 - (ii) `int [] arr = new int[5]`
 - (iii) `int arr[] = int[5] new`
 - (iv) None of the above
- (d) Which of the following is used as default for a member of a class if no access specifier is used for it?
 - (i) private
 - (ii) public
 - (iii) protected
 - (iv) None of the above
- (e) Which of the following methods of string class is used to obtain character at specified index?
 - (i) `char()`
 - (ii) `Charat()`
 - (iii) `charat()`
 - (iv) `charAt()`
- (f) What does AWT stand for?
 - (i) All Window Tools
 - (ii) All Writing Tools
 - (iii) Abstract Window Toolkit
 - (iv) Abstract Writing Toolkit

- (g) Which of the following keywords is used to prevent the content of a variable from being modified?
- final
 - last
 - constant
 - static
- (h) Which of the following functions is used to perform some actions when the object is to be destroyed?
- finalize()
 - delete()
 - main()
 - None of the above
- (i) What is the order of precedence (highest to lowest) of the following operators?
- &
 - ^
 - ?:
- 1 → 2 → 3
 - 2 → 1 → 3
 - 3 → 2 → 1
 - 2 → 3 → 1

- (j) Which of the following classes is related to all the exceptions that can be caught by using catch?
- Error
 - Exception
 - RuntimeException
 - All of the above
2. (a) What are the various access specifiers for JAVA classes? Discuss the various types of inheritance supported by JAVA.
- (b) Discuss the different types of operators in JAVA along with their precedence relationship. 8+6=14
3. (a) What is JDBC connection? Explain the types of JAVA drivers available for database connectivity. List the advantages and disadvantages of each of the mentioned JAVA drivers.
- (b) What is the difference between final, finally and finalize in JAVA? Compare and contrast between 'throw' and 'throws'? 10+4=14
4. (a) What is a thread? Explain the different states in which a thread can exist. Why does a dead thread occur? What are the actions that can occur when a thread enters blocked state?

- (b) Explain the various OOPs concepts in JAVA. $7+7=14$
5. (a) What is an immutable class? How to create an immutable class?
- (b) What is an abstract class? Explain with example. Differentiate between abstract class and interfaces. What are the advantages of interfaces over abstract classes? $6+8=14$
6. (a) What are applets? Which package contains the applet class? Explain the applet life cycle methods.
- (b) What is the difference between swing and applet? How is a frame created and closed in an applet? $7+7=14$
7. (a) How can we restrict inheritance for a class? Does JAVA support multiple inheritance? Justify your answer.
- (b) Write a program to insert an element at the last index of an array in JAVA. $8+6=14$
8. (a) Explain the concept of static methods with suitable examples.
- (b) What is event handling? What are the steps involved in event handling? $7+7=14$