*Total No. of Questions: 6*                    *Total No. of Printed Pages:2*

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1   i.    String class belong to which package?                    **1**
      (a) java.awt    (b) java.string  (c) java.lang    (d) java.applet

     ii.    A Java variable cannot start with-                    **1**
      (a) An alphabet
      (b) A number
      (c) A special character other than underscore
      (d) Both (b) and (c)

    iii.    Which of these is used as a default for a member of a class if no access    **1**
      specifier is used for it?
      (a) private    (b) default    (c) public    (d) protected

     iv.    Which of the following is a special method having same name as that of    **1**
      it's class?
      (a) finalize    (b) delete    (c) class    (d) constructor

      v.    Which of this keyword can be used in a subclass to call the constructor    **1**
      of superclass?
      (a) super    (b) this    (c) extent    (d) extends

     vi.    Multiple inheritances in Java can be implemented by-                    **1**
      (a) Interfaces                (b) Multithreading
      (c) Protected methods         (d) Private methods

    vii.    An _____ is a change in the state of an item.                    **1**
      (a) Spinner    (b) Event    (c) Occurrence  (d) Activity

   viii.    The ____ class serves as the foundation for all Swing components.    **1**
      (a) JButton                (b) JComponent
      (c) JTextField             (d) None of these

     ix.    Which is mandatory in <jsp:useBean /> tag?                    **1**
      (a) id, class                (b) id, type
      (c) type, property           (d) type,id

      x.    Which of the following action variable is used to include a file in JSP?    **1**
      (a) jsp:setProperty          (b) jsp:getProperty
      (c) jsp:include              (d) jsp:plugin

Q.2   i.    What is type casting?                    **2**
     ii.    Explain different types of operators in Java.                    **8**
OR  iii.    Explain control statements.                    **8**

Q.3         Attempt any two:
      i.    Differentiate between constructor and method in Java.                    **5**
     ii.    Explain all the access specifiers Java with suitable example.                    **5**
    iii.    What is the purpose of 'this' and 'static' keyword? Explain with an    **5**
      example.

Q.4         Attempt any two:
      i.    Explain method overriding with example.                    **5**
     ii.    What is wrapper class in Java? Explain with examples.                    **5**
    iii.    What is inheritance? Is multiple inheritance supported by Java? Justify    **5**
      your answer with an example.

Q.5         Attempt any two:
      i.    What is the difference between swing and AWT?                    **5**
     ii.    Explain action event with an example.                    **5**
    iii.    Write a program for the implementation of JButton.                    **5**

Q.6         Attempt any two:
      i.    Explain JSP directives with their types.                    **5**
     ii.    Design a StudentBean class with Student details like firstname,    **5**
      lastname and age. Display the Student details in JSP page using bean
      tags.
    iii.    Explain the JSP scripting elements.                    **5**

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# Marking Scheme

Advanced Object Oriented Programming (T) - OE00082 (T)

| | | | |
|---|---|---|---|
| Q.1 | i) | C | 1 |
| | ii) | D | 1 |
| | iii) | B | 1 |
| | iv) | D | 1 |
| | v) | A | 1 |
| | vi) | A | 1 |
| | vii) | B | 1 |
| | viii) | B | 1 |
| | ix) | A | 1 |
| | x) | C | 1 |

| | | | |
|---|---|---|---|
| Q.2 | i. | Define Type casting | 2 |
| | ii. | Unary Operator | 1 |
| | | Arithmetic Operator | 1 |
| | | Shift Operator | 1 |
| | | Relational Operator | 1 |
| | | Bitwise Operator | 1 |
| | | Logical Operator | 1 |
| | | Ternary Operator | 1 |
| | | Assignment Operator | 1 |
| OR | iii. | Decision Making statements | 2 |
| | | Loop statements | 4 |
| | | Jump statements | 2 |

| | | | |
|---|---|---|---|
| Q.3 | i. | constructor | 2.5 |
| | | method | 2.5 |
| | ii. | Explain Final method | 3 |
| | | Example | 2 |
| OR | iii. | 'this' and 'static' | 2.5 |
| | | Example | 2.5 |

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| | | | |
|---|---|---|---|
| Q.4 | i. | Explain method overriding | 2.5 |
| | | Example | 2.5 |
| | ii. | Explain Wrapper class | 2.5 |
| | | Example. | 2.5 |
| OR | iii. | Define Inheritance | 3 |
| | | Justification | 2 |

| | | | |
|---|---|---|---|
| Q.5 | i. | Swing | 2.5 |
| | | AWT | 2.5 |
| | ii. | Action event | 2.5 |
| | | Example | 2.5 |
| OR | iii. | Program | 5 |

| | | | |
|---|---|---|---|
| Q.6 | | | |
| | i. | Define JSP directives | 2 |
| | | Explain Types | 3 |
| | ii. | Java Class | 2.5 |
| | | Implementing bean tag | 2.5 |
| | iii. | Comment <%-- Set of comment statements --%> | 1 |
| | | Directive <%@ directive %> | 1 |
| | | Declaration <%! declarations %> | 1 |
| | | Scriptlet <% scriplets %> | 1 |
| | | Expression <%= expression %> | 1 |

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