CS/B.TECH/CSE/ODD SEM/SEM-5/CS-504D/2016-17

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Paper Code : CS-504D

OBJECT ORIENTED PROGRAMMING

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own

words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

$10 \times 1 = 10$

i) Which of the following cannot be used for a variable

name is Java ?

a) Identifier

b) Keyword

c) Identifier & keyword

d) None of these.

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ii) Which one of the following is a valid declaration of

an Applet ?

a) Public   class   MyApplet   extends

java.applet.Applet {

b) Public Applet MyApplet {

c) Public   class   MyApplet   extends   applet

implements Runnable {

d) Abstract   class   MyApplet   extends

java.applet.Applet {

e) Class MyApplet implements Applet {

iii) What is the range of the char type ?

a) 0 to 2^{16} b) 0 to 2^{15}

c) 0 to $2^{16} - 1$ d) 0 to $2^{15} - 1$.

iv) What is the output of this program ?

```
class area {
    public static void main(String
args[])
    {
        double r, pi, a;
        r = 9.8;
        pi = 3.14;
        a = pi * r * r;
        System.out.println(a);
    }
}
```

a) 301.5656   b) 301

c) 301.56   d) 301.56560000.

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v) What is an example of polymorphism ?

a) Inner class   b) Anonymous classes

c) Method overloading d) Method overriding.

vi) Exception is defined in which package ?

a) java.util   b) java.lang

c) java.awt   d) java.io

vii) The relation between classes can be represented by

a) polymorphism   b) method

c) message   d) inheritance.

viii) The import statement is always

a) the first non-comment statement in a java program file

b) the default non-comment statement in java program file

c) a non-comment statement and can be defined anywhere in the program

d) none of these.

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ix) Method overloading occurs only when

a) the names and the type signature of two methods are not identical

b) the names and the type signature of two methods are identical

c) the names and the return types of two methods are identical

d) only the names are identical.

x) Which of the following values can a Boolean variable contain ?

a) True & False   b) 0 & 1

c) Any integer value   d) True.

GROUP – B
(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2. What is byte code ? What does the JVM do ? Why is Java called compiled-interpreted language ?   2 + 3

3. Discuss Applet life-cycle indicating the functions.

4. a) What is command line argument ?

b) Compare string and stringBuffer class.

5. What is the base class of Error and Exception ? Differentiate between throw and throws.   1 + 4

GROUP – C
(Long Answer Type Questions)

Answer any *three* of the following.   3 × 15 = 45

6. a) What is mutable strings ?

b) What are the benefits of organizing classes into package ?

c) How can you create your own package and add classes in that ? Explain with the help of an example.

d) Explain with the help of an example, how java gets benefited by using interface.   2 + 2 + (2 + 3) + 6

7. Write short notes on any *three* of the following :   3 × 5

a) Wrapper class

b) Meta class

c) Abstraction

d) Polymorphism.

8. a) Write a program running a main thread and a child thread simultaneously.

b) List various attributes of Applet tag used in HTML.

c) Write a Java program that uses the draw polygon () method of Graphics class to draw a triangle with End points (25, 30), (75, 80) and (50, 50).

    6 + 3 + 6

9. a) Why does Java have two ways to create child threads (by extending thread or implementing Runnable) and which approach is better ?

b) Define an exception called "NotEqualException" that is thrown when a float value is not equal to 3.14. Write a program that uses that user defined exception.

c) Write a multithreading program to generate the square roots to the first 30 natural numbers using Runnable interface.

d) What do you mean by Synchronization ? Why do we need it ?   2 + 5 + 5 + 3

10. a) How is applet different from frame and page ?

b) How are threads made to communicate with each other ? Explain with example.

c) Explain any three events with suitable example.

5 + 5 + 5