



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Third Semester, Master of Computer Applications (MCA)

Semester End Examination; Dec - 2017/Jan - 2018

Programming Using JAVA

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

- 1 a. Discuss the different primitive data types used in JAVA. Mention the memory size required and default values of these data types. 8
- b. Write a JAVA program to find the biggest of three numbers using ternary operator. 6
- c. With the help of a general syntax, explain the different loop structure used in JAVA. 6
- 2 a. Explain the three important pillars of Object Oriented Programming (OOP). 6
- b. Write a JAVA program to find the sum and average of even numbers within the given range. 8
- c. With the help of a general syntax, explain the working of switch statement. Give suitable example. 6

UNIT - II

- 3 a. Explain instance variable, class variables and local variable. 6
- b. Write a JAVA program to count the number of multiples of 2's in a given $n \times m$ matrix. 8
- c. Write a JAVA program to :
 - i) Check the capacity of string buffer object 6
 - ii) Reverse the contents of a string given on console
 - iii) Read a string from console and appends it to the above reversed string.
- 4 a. Find the values of X , Y and Z if $a = 10$ and $b = 2$;

$X = a \& b$

$Y = a \gg \gg b$

$Z = a \ll b$

6
- b. Write a JAVA program to find the biggest of n numbers without using arrays. 8
- c. With the help of a general syntax, explain the following string handling functions :
 - i) equals()
 - ii) charAt()
 - iii) trim()6

UNIT - III

- 5 a. With a suitable example, explain method overloading and method overriding. 6
- b. Explain the following keywords with suitable examples :
 - i) static 6
 - ii) final.

- c. Explain the following with respect to exception handling :
- | | | |
|--------------|--------------|---|
| i) try-catch | ii) throw | 8 |
| iii) throws | iv) finally. | |
- 6 a. Explain the different access specifiers used in JAVA. Give suitable example. 8
- b. With the help of a general syntax, explain how to define and inherit the interface? 6
- c. What is an exception? Write a JAVA program to create your own exception. 6

UNIT - IV

- 7 a. Define multithreading. Write a JAVA program to create child threads using Thread class. 8
- b. What is the use of Wrapper class? Write a JAVA program to illustrate boxing and unboxing. 6
- c. With a suitable example, explain the use of Generic class. 6
- 8 a. Why we need synchronization in multithreading? Write a JAVA program to demonstrate the use of synchronized method. 10
- b. Define Enumeration. What is the purpose of values() method in enum? Write a JAVA program to demonstrate enum. 10

UNIT - V

- 9 a. What is an applet? With the help of a sketch, explain the life cycle of an applet. 8
- b. Write a JAVA program to create swing application with 2 text fields and 2 buttons. 6
- c. Write a short note on InetAddress. 6
- 10 a. Write a JAVA program to create swing applet that has two buttons named "Alpha" and "Beta". When either of the button is pressed it should display "Alpha is pressed" and "Beta is pressed" correspondingly in a label. 10
- b. Write a JAVA swing applet to handle mouse event using mouse listener. 10

* * *