

# SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.Tech - IT

Title of the Paper :Programming in Java

Sub. Code :412504/512504

Date :19/04/2010

Max. Marks :80

Time : 3 Hours

Session :AN

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## PART - A

(10 x 2 = 20)

Answer ALL the Questions

1. Comment on “The byte codes are not specific to any processor”.
2. (a) What is the initial capacity of the following string buffer?  
String Buffer sb = new String Buffer (“Able was I ere I saw Elba.”);  
  
(b) Differentiate between the functionalities of the String and String Buffer classes.
3. What is an inner class? Give an example.
4. When do you declare a method or class to be  
(a) final            (b) abstract.
5. The mouse is pressed inside the applet, dragged with the button pressed and released outside the applet. What are the mouse events that the applet will receive?
6. How does an applet differ from an application?
7. What are the classes involved in panels and frames? Give their hierarchy.
8. Describe FlowLayout with an example.

9. Differentiate between checked and unchecked exceptions.
10. What is the use of finally statement?

PART – B (5 x 12 = 60)  
Answer All the Questions

11. (a) What is JDK? What are the tools provided by JDK for developing and running java programs? Explain their functionalities. (7)

(b) Are the following code segments correct? If so find the output. (3)

(i)            `int count = 10;`  
                 `Boolean isEmpty = (count <= 0);`  
                 `System.out.println(isEmpty);`

(ii)           `int a = 5;`  
                 `if(a > 0)`  
                         `int b = a – 5;`  
                 `System.out.println(b);`

(c) What is the significance of `int [] [] anArray[];`? Is it allowed in Java? (2)

(or)

12. (a) Explain in detail the process of building and running a java application program with an example. (7)

(b) Write a simple java program to convert a temperature in Fahrenheit to Celsius using the formula  $C = (F-32)/ 1.8$  and to display the values in tabular form. (5)

13. (a) Why multiple inheritance should be avoided? How is this achieved in Java?

(b) Create three classes: Storage, Counter and Printer. The Storage class should store an integer. The Counter class should create a thread that starts counting from 0(0, 1, 2...) and stores each value in the Storage class. The Printer class should create a thread that keeps reading the value in the storage class and printing it. Write a program that creates an instance of the Storage class and sets up a counter and a Printer object to operate on it.

(or)

14. (a) Write a java program to simulate the following producer consumer problem. The producer generates a list of random numbers. A consumer takes a number from this list and displays it. Each number should be assigned to only one consumer and only once. Use threads to synchronise their operations. (7)

(b) Explain in detail the life-cycle of a thread. (5)

15. (a) Explain in detail the life cycle of an applet with diagram.

(b) Develop an applet that receives three numeric values from the user and displays the largest of the three on the screen. Write a HTML page and test the same.

(or)

16. What is delegation event model? Explain how you can use it with an example.

17. (a) Create an applet that supports the following operations: (7)

(i) Uses BorderLayout.

(ii) Display pointer location on mouse movement.

(iii) Creates item holding values like line, circle, rectangle etc. When user elects particular value, draw the corresponding object on the applet.

(b) Explain card layout with an example.

(5)

(or)

18. (a) What is a Panel? How is it used for organizing controls in a meaningful way? (4)

(b) Write a program to create 4 panels in such a way that the I panel contains a vertical scroll bar, the II panel contains 3 radio buttons, III panel contains a horizontal scrollbar and the IV panel contains 6 checkboxes. Adopt Border Layout. Place the 4 panels in west, north, south and central directions respectively. (8)

19. (a) What is an exception? Describe the syntax of the exception handling code with an example.

(b) Write a program that will read your lucky number in the command line argument and treat negative numbers as NumberFormat Exception. Write appropriate handlers for the same.

(or)

20. (a) What is a stream? Explain. (4)

(b) Write a simple Java program to store a line of text into a file from the standard input. Extend this program to display the contents of the file to the standard output. Explain the statements used. (8)