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Code No. : 14613 N/o

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (IT: CBCS) IV-Semester Main & Backlog Examinations, May-2019

Object Oriented Programming

Time: 3 hours

Max. Marks: 60

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Q.No.	Stem of the question	M	L	CO	PO
Part-A (10 × 2 = 20 Marks)					
1.	What is the significance of using the keyword <code>final</code> with respect to a variable and a method in Java?	2	1	1	1
2.	Identify the purpose of the following statement, where <code>c</code> is of type <code>char</code> . <code>System.out.println((c >= 'a' && c <= 'z') (c >= 'A' && c <= 'Z'));</code>	2	3	1	2
3.	Distinguish between a checked and an unchecked exception.	2	2	2	1
4.	State the purpose of using the following methods of <code>java.lang.Thread</code> class i) <code>start()</code> ii) <code>yield()</code>	2	1	2	1
5.	Demonstrate the concept of Autoboxing and Unboxing using a Java program.	2	2	3	1
6.	What is the superclass of all Java classes? Also name any two methods of that class along with their purpose.	2	1	3	1
7.	Match the following actions (i, ii, iii & iv) to the type of Event (a, b, c & d) i) Button click a) ItemEvent ii) Frame closing b) MouseEvent iii) Choice selection c) WindowEvent iv) Mouse click d)(ActionEvent)	2	1	4	1
8.	List the methods of <code>MouseListener</code> Interface.	2	1	4	1
9.	Write the html tag which represents an Applet whose source code is written in a file named "Feedback.java" [Assume that Feedback.java has only one class and it is a public class]	2	2	5	2
10.	Name any two ways in which an Applet can be run.	2	1	5	1
Part-B (5 × 8 = 40 Marks)					
11.a)	Analyze the following scenario and create a Java application using the concepts of Inheritance , Encapsulation and Polymorphism . "A company wants to capture the basic information about all of its Employees in general and GeneralManagers in particular. All employees have the following attributes: name, id, wagePerDay, noOfDaysWorked and hra. The salary for employees in general is calculated as the product of wagePerDay and noOfDaysWorked, whereas the salary for GeneralManagers includes an addition of 20% of the hra along with the salary. [use <code>calSalary()</code> as the method name for calculating the salary] In the <code>main()</code> method of the Java application, take input from the user and create appropriate objects and call the <code>calSalary()</code> method, the returned salary value must be printed on the screen.	6	3	1	3
b)	Justify the following statement with sample Java code. "An array can hold primitive data types as well as reference types".	2	3	1	2

Contd...2

12.a)	Write a user defined exception named "NegativeNumberException" and rewrite the main() method of question 11.a) to incorporate exception handling mechanism. If the user gives a negative number as input, the code must create and throw NegativeNumberException. The exception must be caught and handled, and irrespective of the occurrence of the exception, the main method must print the following line before it terminates "End of Main".	5	3	2	3
b)	Can a thread be created by instantiating an object of type Thread? Explain.	3	2	2	2
13.a)	Distinguish between Byte Streams and Character Streams.	3	1	3	1
b)	Given a string, write a java program to create a new string with all the consecutive duplicates removed. Ex: ABBCCCCBBAB -> ABCBAB.	5	3	3	3
14.a)	Create a Java AWT Application named "EmpSalaryGUI" which reuses the classes of question 11.a). The application must contain five text fields for capturing the information about an employee. It must also contain a label and a button. Upon clicking the button the application must call the calSalary() method and display the value of salary on the label. [Note: Write the Java Application assuming that classes of question 11.a) have already been written. Do not write them again]	4	3	4	3
b)	Explain the concept of event-delegation model with a diagram.	4	2	4	1
15.a)	Illustrate the process of passing parameters to an applet with a suitable example.	4	1	5	1
b)	Compare and Contrast a Java AWT application with that of a Java Applet.	4	2	5	2
16.a)	State the purpose of using packages. Assuming that classes for question 11.a) are written in a package named app.core , class for question 12.a) is written in app.except and the class for question 14.a) is written in app.ui, write the package statements and import statements for each class and draw a diagram representing the classes present in the package hierarchy.	3	3	1	3
b)	Summarize the concept of thread synchronization and inter-thread communication with a Java program.	5	2	2	2
17.	Answer any two of the following:				
a)	Demonstrate the process of Serialization in relation with streams.	4	2	3	1
b)	Explain the concepts of LayoutManagers along with sample code.	4	1	4	1
c)	Write a Java applet which takes a number as an input and displays the sum of its digits as output. Also write the corresponding html file for running the applet.	4	3	5	3

M: Marks; L: Bloom's Taxonomy Level; CO: Course Outcome; PO: Programme Outcome

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	60
2	Knowledge on application and analysis (Level-3 & 4)	40
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	

