U –54392

Register No. | | | | | | | | |

BE Degree Examination November 2019

Third Semester

Computer Science and Engineering

18CST33 – OBJECT ORIENTED PROGRAMMING

Common to BTech Information Technology

(Regulations 2018)

Time: Three hours Maximum: 100 marks

Answer all Questions

Part – A (10 × 2 = 20 marks)

1. Use double variable to compute the area of a circle. [CO1,K3]
2. With an example, infer the purpose of 'this' keyword in java. [CO1,K2]
3. Outline the purpose of varargs method ( ). [CO2,K1]
4. Compare abstract class and final class. [CO2,K2]
5. Can a thread be pre-empted by a higher priority thread? Justify your answer. [CO3,K2]
6. "Auto-unboxing allows to mix different types of numeric objects in an expression". Justify this statement with suitable example. [CO3,K2]
7. Show the syntax for the following general form of a generic class:- [CO4,K1]
   i) Declare a generic class
   ii) Declare a reference to a generic class
8. Make use of equals( ) and equalsIgnoreCase( ) to compare the given strings. [CO4,K3]
   "Hello" and "HELLO"
9. List any four AWT classes. [CO5,K1]
10. Build the following applet window using suitable AWT controls. [CO5,K3]

| Applet Viewer – □ × |
|---|
| Applet<br>Kongu Engineering College<br>Applet started |

Part – B (5 × 16 = 80 marks)

11. a. i) Apply operators, arrays and control statements to find the prime numbers between 1 to n. (8) [CO1,K3]

    ii) Develop a student class and set the necessary details of a student using parameterized constructors and display the details. (8) [CO1,K3]

(OR)

b. Develop a stack data structure to implement the following operations using classes and objects. (16) [CO1,K3]

   i) Push only odd numbers between 1 to 20.

   ii) Count the number of elements in a stack.

   iii) Pop the element and display the top element in stack.

   iv) Display all the elements in a stack.

12. a. i) Develop a reservation class which has reserve method. Implement the subclasses reserve train and reserve bus that overrides the reserve method of reservation class. Implement a java code that access the super class constructors and methods. (10) [CO2,K3]

[Note: Use the necessary constructors and additional methods for your convenience].

ii) Compare and contrast method overloading and method overriding. (6) [CO2,K2]

(OR)

b. i) Develop a library interface which has drawbook( ), return book( ) (with fine), checkstatus( ) and reserve book( ) methods. Implement the interface in a class and provide the code for all the methods. (10) [CO2,K3]

ii) State the purpose of package and illustrate the creation and using of package. (6) [CO2,K2]

13. a. i) Implement inter-thread communication by simulating producer-consumer problem. (10) [CO3,K3]

ii) Narrate the way to read console input, characters and strings using byte stream. (6) [CO3,K2]

(OR)

b. i) Develop a simple banner by applying suitable applet methods. (10) [CO3,K3]

ii) Explain any three types of exceptions using multiple catch clauses. (6) [CO3,K2]

14. a. i) Demonstrate the features of generic classes and interfaces to implement sorting algorithm for integer, character and float data types. (10) [CO4,K3]

ii) Show how to use the various index methods to search inside of a string. (6) [CO4,K3]

(OR)

b. Demonstrate the mouse event handlers and key event handlers with an appropriate example. (16) [CO4,K3]

15. a. i) Develop a scientific calculator using AWT components. (10) [CO5,K3]

ii) Illustrate how to create a frame window in an applet. (6) [CO5,K3]

(OR)

b. i) Create a classic user name and password screen (Login screen) using suitable AWT controls. (4) [CO5,K3]

ii) Specify the purpose of Layout Manager. Write a java program to demonstrate the purpose of various Layout Manager classes. (12) [CO5,K3]

| Bloom's Taxonomy Level | Remembering (K1) | Understanding (K2) | Applying (K3) | Analysing (K4) | Evaluating (K5) | Creating (K6) |
|---|---|---|---|---|---|---|
| Percentage | 3.33 | 17.8 | 78.9 | – | – | – |