Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 40389

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Third/Fourth/Fifth Semester

Computer Science and Engineering

CS 8392 – OBJECT ORIENTED PROGRAMMING

(Common to: Computer and Communication Engineering / Electrical and Electronics Engineering/ Electronics and Communication Engineering/ Electronics and Instrumentation Engineering/ Electronics and Telecommunication Engineering/ Instrumentation and Control Engineering/ Artificial Intelligence and Data Science/ Computer Science and Business System/ Information Technology)

(Regulations 2017)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is encapsulation?
2. Define polymorphism.
3. When a class must be declared as abstract?
4. Outline the use of extends keyword in Java with syntax.
5. What is chained exception?
6. How character streams are defined?
7. Name the two ways to create a thread in Java.
8. What is synchronization?
9. Name the two methods defined in java.util. EventObject.
10. Draw the class hierarchy for Panel and Frame.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Outline the arithmetic operators in Java. (6)

(ii) Name the four integer types in Java and outline the bitwise operators that can be applied to the integer types. (7)

Or

(b) (i) Outline the iteration statements in Java with syntax and example. (9)

(ii) Outline the use of constructors and this keyword in Java. (4)

12. (a) (i) When a class hierarchy is created, in what order are the constructors for the classes that make up the hierarchy called? Outline with an example. (6)

(ii) Outline method overriding with an example. (7)

Or

(b) (i) Write a note on interfaces and present the syntax for defining an interface. (7)

(ii) Outline how interfaces are implemented in Java with an example. (6)

13. (a) (i) "Java exception handling is managed via five keywords". Name the five key words and present an outline of an exception-handling block with syntax. (6)

(ii) Present an outline of Java's checked exceptions defined in java. lang. (7)

Or

(b) What is InputStream? Present an outline of the methods defined by InputStream. (13)

14. (a) (i) Outline the states a thread can be in and specify the rules that determine when a context switch takes place. (7)

(ii) Present an outline of the methods used by Java for interprocess communication. (6)

Or

(b) (i) Why parameterized types are important? Outline Java generics with an example. (7)

(ii) Outline parameter type bounds with an example. (6)

15. (a) What is AWTEvent class? Name the main event classes in java.awt.event and provide an outline of when they are generated. (13)

Or

(b) (i) Outline the use of setSize(), getSize( ), setVisible() and setTitle() methods when working with frame windows with their signature. (8)

(ii) Name the four types of buttons swing defines and present an outline of the same. (5)

PART C — (1 × 15 = 15 marks)

16. (a) Write a Java program to accept `n' names, store it in an array, sort the names in alphabetic order and display the result. Use classes and methods. (15)

Or

(b) Write a Java program to accept two square matrices, store them in an array, add the matrices and display the result. Use classes and methods. (15)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : X 10313

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020/
APRIL/MAY 2021
Third/Fourth/Fifth Semester
Computer Science and Engineering
CS 8392 – OBJECT ORIENTED PROGRAMMING
(Common to : Computer and Communication Engineering/Electrical and Electronics Engineering/Electronics and Communication Engineering/Electronics and Instrumentation Engineering/Electronics and Telecommunication Engineering/Instrumentation and Control Engineering/Information Technology)
(Regulations 2017)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Define encapsulation in Java.
2. What is a constructor ?
3. Exemplify the use of super keyword.
4. What are the differences between classes and interfaces ?
5. What is the purpose of finally clause ? Give example.
6. What are the uses of streams. What are the two types of streams ?
7. What is the need for synchronization ? How it can be implemented ?
8. How to create a single class, which automatically works with different types of data ? Give example.
9. Write the sequence in which method calls takes place when an applet is terminated ? Define those methods.
10. What are the two key features of Swing ?

PART – B **(5×13=65 Marks)**

11. a) i) How Java changed the internet ? **(9)**

ii) If semicolons are needed at the end of each statement, why does the comment line not end with a semicolon ? **(4)**

(OR)

b) What are the three categories of control statements used in Java ? Explain each category with example. **(13)**

12. a) Write a Java program to calculate electricity bill using inheritance. The program should get the inputs of watts per hour and unit rate.

Check your program for the following case :

Assume a consumer consumes 5000 watts per hour daily for one month. Calculate the total energy bill of that consumer if per unit rate is 7 [1 unit = 1k Wh]. **(13)**

(OR)

b) What is interface ? With an example explain how to define and implement interface. **(13)**

13. a) Write a short note on the following topics :

- Uncaught exceptions. **(3)**
- Difference between throw and throws. Give example for both. **(5)**
- Chained exceptions. Give example. **(5)**

(OR)

b) How to perform reading and writing files ? Explain with example. **(13)**

14. a) Discuss the different states of thread in detail. **(13)**

(OR)

b) i) What is the purpose of thread priorities ? What are the different thread priorities that exist ? **(5)**

ii) What are bounded types ? Why it is used ? Give example. **(8)**

15. a) i) List any five different user interface components that can generate the events. **(5)**

ii) Demonstrate any four mouse event handlers with example. **(8)**

(OR)

b) Describe how to work with graphics to display information within window. **(13)**

PART – C **(1×15=15 Marks)**

16. a) Write an AWT GUI application (called AWT Counter) as shown in the Figure 1. Each time the "Count" button is clicked, the counter value shall increase by 1.

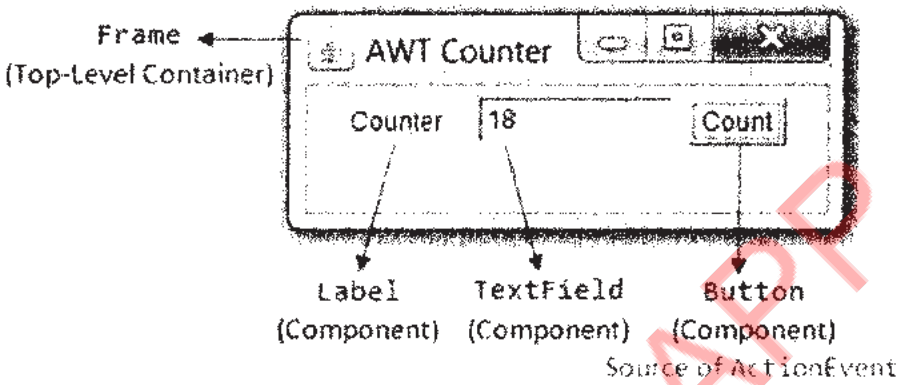

Figure 1

(OR)

b) Write an addressbook class that manages a collection of person object. An addressbook will allow a person to add, delete, or search for a person object in the address book.

- Add method : It should add a person object to the addressbook.
- Delete method: It should remove the specified person object from the book.
- Search method: It searches the address book for a specified person and returns the list of persons matching the specified criteria. The search can be done either by first name, last name or person id.

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08/05/13
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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80096

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Third/Fourth Semester

Computer Science and Engineering

CS 8392 — OBJECT ORIENTED PROGRAMMING

(Common to Computer and Communication Engineering/Electronics and Instrumentation Engineering/Instrumentation and Control Engineering/ Information Technology).

(Regulation 2017)

Time : Three hours Maximum : 100 marks.

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Can a Java source file be saved using a name other than the class name? Justify.
2. What are inline functions? Give examples.
3. State the conditions for method overriding in Java.
4. Write the syntax for importing packages in a Java source file and give an example.
5. What happens when the statement: int value = 25/0; is executed?
6. Give an example for reading data from files using File Input Stream.
7. Sketch the lifecycle of a thread.
8. Give the syntax of a generic class with an example.
9. Write the class hierarchy for panel and frame.
10. State the purpose of getRed( ), getBlue( ) and getGreen( ) methods.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Discuss the three OOP principles in detail. (7)

(ii) What are literals? Explain the types of literals supported by java. (6)

Or

(b) (i) Explain the selection statements in Java using suitable examples. (7)

(ii) Write a Java code using do-while loop that counts down to 1 from 10 printing exactly ten lines of "hello'. (6)

12. (a) Explain hierarchical and multi-level inheritances supported by Java and demonstrate the execution order of constructors in these types. (13)

Or

(b) (i) Explain simple interfaces and nested interfaces with examples. (7)

(ii) Present a detailed comparison between classes and interfaces. (6)

13. (a) (i) Give an example for nested try statements in Java source file and explain. (7)

(ii) Write a note on built-in exceptions. (6)

Or

(b) Create an IN file in Java to store the details of 100 students using a STUDENT class. Read the details from IN file, convert all the letters in IN file to lowercase letters and write it into OUT file. (13)

14. (a) Describe the creation of a single thread and multiple threads using an example. (13)

Or

(b) (i) Using an example, explain inter-thread communication in Java. (7)

(ii) Write a generic method for sorting an array of integer objects. (6)

15. (a) (i) Use graphics objects to draw an arc and a semicircle inside a rectangular box. (4)

(ii) Sketch the hierarchy of Java AWT classes and methods. Create a 'checkbox' using these classes and methods. (9)

Or

(b) (i) State the differences between AWT and swing. (4)

(ii) Present the hierarchy of Java swing classes and methods of component class. Create a simple 'combo box' in Java swing using the classes and methods. (9)

PART C — (1 × 15 = 15 marks)

16. (a) The following is a system that can be used to synchronize threads. In some shops a machine issues numbered tickets to customers and customers are served in numeric order.

* A ticket machine holds an integer, initially zero, and has a single atomic operation:

  turn( ) - which increments the integer and returns its previous value.

* A scheduler also holds an integer, initially zero, and has two atomic operations:

  next( ) - which increments the integer count

  queue(value) - suspends the calling thread until the count is atleast as large as the value given as an argument

Given a ticket machine, m, and a scheduler, s, a critical region could then be coded as follows:

```
number = m.turn( );
s.queue(number);
        protected code
s.next( );
```

Write Java classes Ticket Machine, with a turn method, and Scheduler, with next and queue methods to implement the system.

Or

(b) Define Java classes of your own without using any library classes to represent linked lists of integers. Provide it with methods that can be used to reverse a list and to append two lists.

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01/11/18 (FN)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 25061

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Third Semester

Computer Science and Engineering

CS 8392 — OBJECT ORIENTED PROGRAMMING

(Common to : Information Technology/ Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations 2017)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Objects and classes in java.
2. Define access specifier.
3. What is object cloning?
4. What is class hierarchy? Give example.
5. Define runtime exceptions.
6. What is the use of assert keyword?
7. What is multithreading?
8. What is the need for generic code?
9. What is meant by window adapter classes?
10. Enumerate the features of AWT in Java.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Explain the characteristics of OOPs. (6)

(ii) Explain the features and the characteristics of JAVA. (7)

Or

(b) (i) What is method? How method is defined? Give example. (6)

(ii) State the purpose of finalize() method in java? With an example explain how finalize() method can be used in java program. (7)

12. (a) Define Inheritance. With diagrammatic illustration and java programs illustrate the different types of inheritance with an example. (13)

Or

(b) Write a Java program to create a student examination database system that prints the mark sheet of students. Input student name, marks in 6 subjects. This mark should be between 0 and 100.

If the average of marks is > = 80 then prints Grade 'A'.

If the average is <80 and > = 60 then prints Grade 'B'.

If the average is <60 and > = 40 then prints Grade 'C'.

else prints Grade 'D'. (13)

13. (a) Explain the different types of exceptions and the exception hierarchy in java with appropriate examples. (13)

Or

(b) What are input and output streams? Explain them with illustrations. (13)

14. (a) Explain in detail the different states of a thread. (13)

Or

(b) Demonstrate Inter thread Communication and suspending, resuming and stopping threads. (13)

15. (a) State and explain the basic of AWT Event handling in detail. (13)

Or

(b) Describe in detail about the different layout in Java GUI. Which layout is the default one? (13)

PART C — (1 × 15 = 15 marks)

16. (a) Create a Bank database application program to illustrate the use of multithreads.

Or

(b) Code a java program to implement the following: Create four check boxes. The initial state of the first box should be in checked state. The status of each check box should be displayed. when we change the state of a check box, the status should be display is updated.

Reg. No. :

Question Paper Code : 90153

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Third/Fourth/Fifth Semester
Computer Science and Engineering
CS 8392 – OBJECT ORIENTED PROGRAMMING
(Common to Electrical and Electronics Engineering/Computer and Communication Engineering/Electronics and Communication Engineering/ Electronics and Instrumentation Engineering/Electronics and Telecommunication Engineering/Instrumentation and Control Engineering/Information Technology)
(Regulations 2017)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. What is access specifier ?
2. What is javadoc ?
3. What is object cloning ?
4. Describe the uses of interfaces in Java.
5. What is exception handling ?
6. What is the use of assert key word ?
7. Describe the various states of thread.
8. "Thread is a light weight process" – Comment.
9. Write the code segment to handle two mouse events.
10. What are the purposes of JPanel.

PART – B (5×13=65 Marks)

11. a) Explain the various features of java in detail.

(OR)

b) What is JVM ? Explain the internal architecture of JVM with neat sketch.

12. a) Explain in detail about various types of inheritance in java with neat diagram.

(OR)

b) What is an abstract class ? Illustrate with an example to demonstrate abstract class.

13. a) Explain different types of exceptions in java.

(OR)

b) Explain in detail about the following with sample program :

i) Reading from a file

ii) Writing in a file.

14. a) What is a thread ? Explain multithreading and multitasking in detail.

(OR)

b) What is t synchronization ? Explain the different types of synchronization in java.

15. a) Describe in detail about the different layouts in Java GUI. Which layout is the default one ?

(OR)

b) Discuss mouse listener and mouse motion listener. Give an example program.

PART – C (1×15=15 Marks)

16. a) Develop a java program to find a smallest number in the given array by creating one dimensional array and two dimensional array using new operator.

(OR)

b) Create a simple real life application program in Java to illustrate the use of multithreads.

Reg. No. | | | | | | | | | | | | |

Question Paper Code : 57251

24/05/2016 FN

B.E/B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fourth Semester

Electrical and Electronic Engineering

CS 6456 – OBJECT ORIENTED PROGRAMMING

(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is object oriented programming ?
2. Define data abstraction.
3. Distinguish between class and object.
4. What is the use of destructor ?
5. What is generic programming ?
6. What is meant by exception ?
7. What is byte code ?
8. Java is robust. Comment.
9. Distinguish between interface and class.
10. What is multithreading ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) List out differences between procedure oriented programming and object oriented programming.

(ii) Explain about pointers with an example. **(9 + 7)**

OR

(b) (i) Explain the characteristics of OOPs.

(ii) Write a C++ program to list out prime numbers between the given two limits. **(8 + 8)**

12. (a) (i) What are constructors ? Explain the concept of destructor with an example.

(ii) Explain array of objects with an example. **(8 + 8)**

OR

(b) (i) What is operator overloading ? List out the rules to overload a binary operator.

(ii) Write a C++ program to add two vectors using + operator overloading. **(7 + 9)**

13. (a) (i) What is Inheritance ? List out the advantages of Inheritance.

(ii) Write a C++ program to implement multiple inheritance. **(7 + 9)**

OR

(b) (i) Discuss about exception and its advantages.

(ii) Write a C++ program to generate an exception whenever user input is even number less than 100. **(5 + 11)**

14. (a) (i) List out the characteristics of JAVA.

(ii) Explain about dynamic method dispatch with an example. **(8 + 8)**

OR

(b) (i) Distinguish between instance methods and class methods with an example.

(ii) Implement a class Student. A Student has a name and a total quiz score. Supply an appropriate constructor and methods getName( ), addQuiz(int score), getTotalScore( ) and getAverageScore( ). To Compute the latter, you also need to store the number of quizzes that the student took. **(6 + 10)**

15. (a) (i) How to define an interface ? Why do the members of interface are static and final ?

(ii) Write a Java Program to implement nested packages. **(7 + 9)**

OR

(b) (i) Distinguish between arrays and strings.

(ii) Explain the methods available in the String Buffer class.

(iii) Explain the use of command line arguments with an example. **(3 + 5 + 8)**

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Reg. No. : | | | | | | | | | | | | |

12/05/17 FN

Question Paper Code : 71681

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Fourth Semester

Electrical and Electronics Engineering

CS 6456 – OBJECT ORIENTED PROGRAMMING

(Common to Electronics and Instrumentation Engineering
Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is object oriented programming?
2. Define object and class.
3. What is encapsulation?
4. Give an example for non parameterized constructor.
5. What are templates?
6. What are exceptions?
7. Which operators could be overloaded only by friend function?
8. What is byte code?
9. What is meant by platform independent language?
10. What is a package?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Explain the characteristics of OOP. (6)

(ii) Compare and contrast OOP and procedure oriented programming. (7)

Or

(b) (i) Explain the various operations available in C++. (6)

(ii) Explain about dynamic allocation in C++. (7)

12. (a) Distinguish between

(i) Inheritance and containership (3)

(ii) Encapsulation and abstraction (3)

(iii) Write a C++ program to find whether the given string is palindrome or not. (7)

Or

(b) (i) List out the advantages of overloading. (3)

(ii) Write a C++ program to overload +operator for concatenating two strings. (10)

13. (a) (i) What is generic programming? (3)

(ii) Explain function template with an example. (10)

Or

(b) (i) List out the advantages of inheritance. (3)

(ii) Write a C++ program to implement multiple inheritance. (10)

14. (a) (i) Explain about Java features. (5)

(ii) Write a Java program to find the sum of the following series. (8)

1-2+3-4+.....+n.

Or

(b) (i) Discuss about benefits of abstract class. (3)

(ii) Explain dynamic method dispatch with an example. (10)

15. (a) (i) What are the major differences between an interface and a class? (3)

(ii) Make a class Student. The Student class has data members such as roll number, name, branch. Create a class called Exam that has data members roll number and six subject marks. Derive the result class from Student and Exam and it has its own data members such as total mark, and result. Write a Java program to model the relationships. (10)

Or

(b) (i) How do we add a class or interface to a package? (3)

(ii) Write a Java Program to implement nested packages. (10)

PART C — (1 × 15 = 15 marks)

16. (a) Explain about thread synchronization with an example.

Or

(b) Write a Java program to create user defined exception.

Reg. No. :

Question Paper Code : 40908

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Fourth Semester
Electrical and Electronics Engineering
CS 6456 – OBJECT ORIENTED PROGRAMMING
(Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. What is an object ? Give example.
2. Define an abstract data type.
3. What is a member function ?
4. Define polymorphism.
5. Outline the relationship between containers, iterators and algorithms.
6. Write the syntax for defining a function template.
7. What is a class ? Give an example for a class in java.
8. Name the access modifiers in java.
9. Define a package in java and write the syntax to declare a package.
10. What is multithreading ?

PART – B (5×13=65 Marks)

11. a) Appraise the characteristics of object oriented programming languages. (13)

(OR)

b) Compare the features of C++ and Java. (13)

12. a) Write a C++ program to sort an array of 'n' numbers in ascending order. Use classes and member functions. **(13)**

(OR)

b) What is an iterator ? Explain with an example iterators in C++. **(13)**

13. a) What is a template ? Outline the need for templates in C++ and appraise with an example the different types of templates. **(13)**

(OR)

b) What is inheritance ? Explain with an example the different types of inheritance in C++. **(13)**

14. a) Explain with an example the control statements in Java. **(13)**

(OR)

b) Write a Java program to accept two matrices, multiply the matrices and print the result. Use classes and methods. **(13)**

15. a) What is a java interface ? How to implement an interface ? Explain with an example. **(13)**

(OR)

b) What is exception handling ? Explain with an example exception handling in java. **(13)**

PART – C **(1×15=15 Marks)**

16. a) Write a C++ program to perform the following : **(15)**

Define a class account to represent a bank account. Include the following :

Data members :

- Account number
- Name of the depositor
- Type of account
- Balance amount in the account

Member functions :

- To assign initial values
- To deposit an amount
- To withdraw an amount after checking the balance
- To display name and balance

(OR)

b) Write a Java program to sort an array of 'n' names in alphabetic order. Use classes and methods. **(15)**

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 52865

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019

Fourth Semester

Electrical and Electronics Engineering

CS 6456 – OBJECT ORIENTED PROGRAMMING

(Common to: Electronics and Instrumentation Engineering, Instrumentation and Civil Engineering)

(Regulation 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define oops.
2. List the advantages of using object oriented programming.
3. Differentiate data hiding and encapsulation.
4. What is polymorphism and give examples?
5. What is a class and object?
6. How generic programming is used in C++?
7. Is a string a primitive data type?
8. Does java support "goto"?
9. Mention about packages and interfaces.
10. Why do we use loops in java?

PART B — (5 × 13 = 65 marks)

11. (a) When would you use a pointer to a function? (13)

Or

(b) Explain in detail with an example about ADT's in stack and queue. (13)

12. (a) Explain different types of constructors in C++ with example.

Or

(b) Describe virtual functions with an example.

13. (a) Illustrate Templates with an example in C++.

Or

(b) (i) Explain different types of inheritance in C++ with an example. (8)

(ii) Discuss the advantages of STL in detail. (5)

14. (a) Enlighten all the control statements supported by java with an example? (13)

Or

(b) (i) Write a java program to generate the Fibonacci series. 0,1,1,2,3,5,8,... (5)

(ii) Write a java inheritance program, which should have two classes namely calculation and My calculation. My-calculation should inherit the methods addition ( ) and subtraction ( ) of calculation class. (8)

15. (a) (i) Write a java program to Concatenate the specified string at the end of the string. (6)

(ii) Explain 'Divide by zero' Exception with an example. Java program. (7)

Or

(b) Write a program to test whether the string is having specified prefix, if yes then it returns true else false. (13)

PART C — (1 × 15 = 15 marks)

16. (a) How exceptions are handled in C++? Specify its syntax. (15)

Or

(b) Describe in detail about the Multithreaded programming. (15)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80336

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fourth Semester

Electronics and Communication Engineering

EC 6401 – ELECTRONIC CIRCUITS – II

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What will happen for noise, if we introduce negative feedback at amplifier?

2. An amplifier has an open loop gain of 1000 and a feed back ratio of 0.04. If the open loop gain changes by 10% due to temperature, find the % change in gain of the amplifier with feedback.

3. What are the factors which affect the frequency stability of an oscillator?

4. What are the merits and demerits of RC phase shift oscillator?

5. List out some advantages of double tuned amplifier.

6. Define Q factor of the capacitor.

7. What are the different types of multivibrator?

8. Mention the uses of Schmitt trigger circuit.

9. Draw the Millers circuit to activate the sweep.

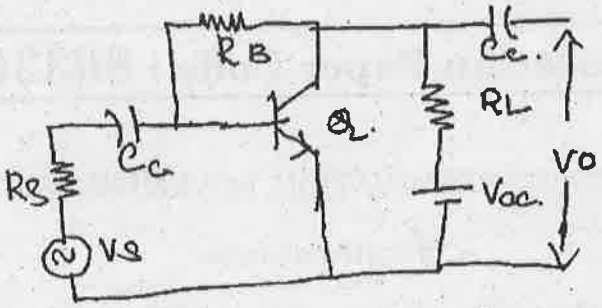
10. What is known as intrinsic stand off ratio and mention its range?

PART B — (5 × 16 = 80 marks)

11. (a) Draw the block diagram of current series feedback amplifier and derive an expression for input resistance, voltage gain and output resistance.

Or

(b) Identify the feed back topology for the network shown below, which have $R_s = 600\,\Omega$, $h_{ie} = 5\,k\Omega$, $h_{fe} = 80$, $R_L = 2\,k\Omega$ and $R_B = 40\,k\Omega$. Calculate $A_v, R_{if}, A_{vf}, R_{of}$ and R'_{of}.



12. (a) Derive the general form for frequency of oscillation for LC oscillator with suitable diagram.

Or

(b) Enumerate the following :

(i) Franklin oscillator

(ii) Armstrong oscillator.

13. (a) Discuss the effect of cascading single tuned amplifier on bandwidth.

Or

(b) (i) Briefly describe about hazeltine neutralization method with suitable diagram. (8)

(ii) Derive the efficiency of class 'c' tuned amplifier. (8)

14. (a) Design a saturated collector coupled multivibrator for the following specification. Output voltage 12 V peak. Output to be positive pulse, the duration is 10 μs. The time between pulses to be 20 μs, for the BJT $h_{fe} = 100, I_{CBO} = 0, I_{C(ON)} = 1\,mA$, assume $V_{CE}(sat) = 0.2\,V$.

Or

(b) Explain the operation and working principle of monostable multivibrator with necessary diagram.

15. (a) Briefly describe about the working of UJT for relaxation oscillator with the help of suitable circuit diagram and derive its frequency of oscillation.

Or

(b) Analyze free running blocking oscillator with base timing using necessary circuit diagram and waveform.

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50390

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Fourth Semester

Electrical and Electronics Engineering

CS6456 – OBJECT ORIENTED PROGRAMMING

(Common to Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. What are enumerated data types ? Give an example.
2. Define recursion.
3. Write the use of destructor.
4. What do you mean by container ?
5. List the benefits of using templates in C++.
6. Define exception.
7. Highlight the features of Java.
8. Give the syntax of while statement in Java.
9. Write some Java string class methods.
10. State the use of try block in Java exception handling.

PART – B (5×13=65 Marks)

11. a) i) Show the rules of precedence and associativity for the operators in C ++. (8)

ii) Explain the switch statement in C++ with examples. (5)

(OR)

b) i) Write a C++ program to sort the given numbers using function. (8)

ii) Write a C++ program to swap two numbers using pointer. (5)

12. a) What are the different types of constructors in C++ ? Illustrate with an example. (13)

(OR)

b) i) Explain the concept of polymorphism with an example. (8)

ii) Write the need for iterators in C++. Give an example. (5)

13. a) Explain function template and class template with suitable examples. (13)

(OR)

b) Explain inheritance in C++ with suitable examples. (13)

14. a) i) Write a Java program to generate Fibonacci series. (8)

ii) Explain how to declare arrays in Java. Give examples. (5)

(OR)

b) i) With an example, discuss how to declare methods with multiple parameters in Java. (8)

ii) Brief about inheritance in Java. (5)

15. a) Explain the use of package in Java with an illustrative example. (13)

(OR)

b) Develop Java program to implement an interface with an example. (13)

PART – C (1×15=15 Marks)

16. a) i) Develop a C++ program to perform matrix multiplication for the given two matrices A and B. The resultant matrix may be stored in matrix C. (15)

ii) Throw an exception if the matrices cannot be multiplied and handle it using an user defined exception.

(OR)

b) Develop a Java program to illustrate the concept of multi threaded programming. (15)

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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 20366

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fourth Semester

Electrical and Electronics Engineering

CS 6456 — OBJECT ORIENTED PROGRAMMING

(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define pointer. Give example.
2. What is an abstract data type? Give example.
3. Why do we need the preprocessor directive # include <iostream> in a C++ program?
4. What is data abstraction? Give example.
5. How do templates benefit a C++ developer?
6. Define inheritance.
7. What is java virtual machine?
8. List the logical operators in java.
9. What is package in java?
10. Define multithreading.

PART B — (5 × 13 = 65 marks)

11. (a) Outline the features of the object oriented programming paradigm. (13)

Or

(b) Write a C++ program to store 'n' names in an array name, sort the names in alphabetic order and print the result. Use classes and member functions. (13)

12. (a) What is a constructor? Explain the different types of constructors in C++ with an example. (13)

Or

(b) (i) Write a C++ program to accept a square matrix, find the transpose and print the result. Use classes and member functions. (5)

(ii) What is polymorphism? Explain the different types of polymorphism in C++ with an example. (8)

13. (a) (i) Explain templates in C++ with an example. (8)

(ii) Present an overview of exception handling in C++. (5)

Or

(b) Explain single inheritance and multiple inheritance in C++ with an example. (13)

14. (a) (i) Write a java program to print the first 'N' prime numbers. (5)

(ii) Write a java program to perform computation of sin (x) as given below : (8)

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \frac{x^9}{9!} \ldots\ldots \text{N terms.}$$

Or

(b) Explain the types of inheritance in java with suitable examples.

15. (a) (i) Explain interfaces in java with an example. (8)

(ii) Write a java program to accept a string, count the number of vowels in the string and print the result. (5)

Or

(b) What is exception handling? Discuss exception handling in java with an example. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Consider a book shop which sells both books and video-tapes. Create a class media that store the title and price of a publication. Create two derived classes, one for storing the number of pages in a book and another for storing the playing time of a tape. Write a function display () is used in all the classes to display the class contents.

Note : that the function display () has been declared virtual in media, the base class. Write a C++ program for the above. (15)

Or

(b) (i) Write a java program to sort an array of 'N' numbers in ascending order. Use classes and methods. (8)

(ii) Write a java program to accept a string, reverse the string, check whether the string is a palindrome and print the result. Use classes and methods.

Note : An example for palindrome : consider the string 'MALAYALAM' when you reverse the string you get back the original string 'MALAYALAM' and hence the string "Malayalam" is a palindrome. (7)

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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 91400

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Fourth Semester

Electrical and Electronics Engineering

CS 6456 – OBJECT ORIENTED PROGRAMMING

(Common to : Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Why oriented programming object is advantageous than structured programming ?
2. Can a pointer be declared to a function which accepts one integer argument and returns an integer ? Explain this with suitable C++ code.
3. What are the use of member function in C++ ?
4. Compare and Contrast Compile Time Polymorphism Vs Run Time Polymorphism.
5. What is meant by Generic programming ?
6. Define Exception. Write the syntax of exception handling in C++.
7. Can you declare an array without assigning the size of an array ? How is it advantageous from static intialization.
8. What are the different types of Inheritance supported by Java ?
9. Define package in java with syntax.
10. How strings are stored in Java ?

PART – B (5×13=65 Marks)

11. a) Explain the native data types and statements with suitable examples. (13)

(OR)

b) Write the algorithm for implementing ADTs in the base languages. (13)

12. a) Explain the difference between data hiding and data abstraction. (13)

(OR)

b) Define Polymorphism. Explain the different types of polymorphism with example. (13)

13. a) Define templates in C++. Differentiate the function template and class template with example. (13)

(OR)

b) Write a program in C++ to calculate area of the object depending upon the shape given as input use function overloading. (13)

14. a) Explain the different control statements available in java with a suitable examples. (13)

(OR)

b) How an object array is created in java ? Explain with example. (13)

15. a) How to create and use a package in Java ? What are the types of packages used in Java ? (13)

(OR)

b) Discuss in detail on how exceptions are handled with an appropriate example. (13)

PART – C (1×15=15 Marks)

16. a) Write a program in C++ to demonstrate the significance of inheritance. Use different types of inheritance and explain. (15)

(OR)

b) Write a program in Java to demonstrate the concept of interfaces and their implementation. (15)