**20EC204**

**Hall Ticket Number:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **III/IV B.Tech (Regular\Supplementary) DEGREE EXAMINATION** | | | |
| **August, 2023** | **Electronics and Communication Engineering** | | |
| **Sixth Semester** | **Programming with C++** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | CO | BL | M |
| 1 | a) | Define polymorphism. | CO1 | L2 | 1M |
|  | b) | List any two applications of C++. | CO1 | L2 | 1M |
|  | c) | How do we achieve Runtime polymorphism in C++ ? | CO1 | L2 | 1M |
|  | d) | What is the difference between the friend function and the member function? | CO2 | L4 | 1M |
|  | e) | How does the compiler determine the correct function in function overloading? | CO2 | L2 | 1M |
|  | f) | Differentiate data members with static data members? | CO2 | L4 | 1M |
|  | g) | What is the purpose of copy constructor? | CO3 | L1 | 1M |
|  | h) | When the destructor is called? | CO3 | L2 | 1M |
|  | i) | Can we initialize “const” object in C++? | CO4 | L2 | 1M |
|  | j) | Difference between member function and non-member function ? | CO4 | L4 | 1M |
|  | k) | What is multiple inheritance ? | CO1 | L1 | 1M |
|  | l) | Define pure virtual function. | CO1 | L2 | 1M |
|  | m) | What is the difference between private and protected mode ? | CO1 | L1 | 1M |
|  | n) | What are the C++ access specifiers ? | CO2 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | What is operator overloading? Explain about it by using example program? | CO1 | L2 | 7M |
|  | b) | Write a C++ program to check whether the given number is Armstrong or not ? | CO1 | L3 | 7M |
|  |  | **(OR)** |  |  |  |
| 3 | a) | Explain the structure of a C++ program. | CO1 | L4 | 7M |
|  | b) | What is the difference between 'cout' and 'cin' in C++? | CO1 | L4 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | What is the difference between pass by value and pass by reference in C++? | CO2 | L4 | 7M |
|  | b) | Write a Program to Calculate area and circumference of a circle using Class. | CO2 | L3 | 7M |
| **(OR)** | | | | | |
| 5 | a) | What is the difference between data members and static data members. | CO2 | L4 | 7M |
|  | b) | Write a C++ program to find the area of a circle, rectangle and triangle using  function overloading. | CO2 | L4 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | Write C++ Program to overload + operator to add two matrices. | CO3 | L4 | 7M |
|  | b) | What is a constructor? Explain any two types of constructors with examples. | CO3 | L2 | 7M |
| **(OR)** | | | | | |
| 7 | a) | What is operator overloading? List out the rules for overloading operators. | CO3 | L1 | 7M |
|  | b) | What is the difference between Constructor and Destructor? | CO3 | L4 | 7M |
| **Unit-IV** | | | | | |
| 8 | a) | Explain about Abstract class in C++. | CO4 | L3 | 7M |
|  | b) | Write a C++ program to Find the area of a triangle and rectangle using Inheritance | CO4 | L3 | 7M |
| **(OR)** | | | | | |
| 9 |  | Explain different types of inheritances in C++ with suitable examples | CO4 | L2 | 14 |