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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **09CS203/12CS203/CS264** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **PROGRAMMING IN C++/ OBJECT ORIENTED PROGRAMMING IN C++** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Write a statement that gets a numerical value from the keyboard and places it in the variable temp. | 1 |
| 2. | What header file must you #include with your program to use setw? | 1 |
| 3. | Is –1 true or false? | 1 |
| 4. | Which control statement does send control to the top of the loop in which it occurs? | 1 |
| 5. | Is it possible to create more than one constructor in a class? | 1 |
| 6. | Write the syntax to create a constant object. | 1 |
| 7. | If a base class contains a member function basefunc(), and a derived class does not contain a function with this name, can an object of the derived class access basefunc()? | 1 |
| 8. | Write the syntax to create a void pointer. | 1 |
| 9. | Write the declaration for a pure virtual function called aragorn that returns no value and takes no arguments. | 1 |
| 10. | Which keyword is used to throw an exception? | 1 |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Write a program in C++ which uses a conditional operator to set ticket to 1 if speed is greater than 55, and to 0 otherwise. | 3 |
| 12 | Write a function called zeroSmaller() that is passed two int arguments by reference and then sets the smaller of the two numbers to 0. Write a main() program to exercise this function. | 3 |
| 13 | For a two-dimensional array of type float, called flarr, write a statement that declares the array and initializes the first subarray to 52, 27, 83; the second to 94, 73, 49; and the third to 3, 6, 1. | 3 |
| 14 | Write a program in C++ to add two objects by overloading the arithmetic operator. | 3 |
| 15 | Write a C++ program to write number 1 to 100 in a data file, notes.txt. | 3 |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | Explain the arithmetic operators with sample code. | 5 |
| b. | Explain the relational operators with sample code. | 5 |
| c. | Explain the logical operators with sample code. | 5 |
| (OR) | | | |
| 17. |  | Explain the features of object-oriented programming. | 15 |
| 18. |  | In a company an employee is paid as under:  If his basic salary is less than Rs. 1500, then HRA = 10% of basic salary and DA = 90% of basic salary. If his salary is either equal to or above Rs. 1500, then HRA = Rs. 500 and DA = 98% of basic salary.  If the employee's salary is input by the user write a program in C++ to find his gross salary. | 15 |
| (OR) | | | |
| 19. |  | The marks obtained by a student in 5 different subjects are input by the user. The student gets a division as per the following rules:  Percentage above or equal to 60 - First division  Percentage between 50 and 59 - Second division  Percentage between 40 and 49 - Third division  Percentage less than 40 - Fail  Write a program in C++ to calculate the division obtained by the student. | 15 |
| 20. |  | Define a class student in C++ with the following specifications  Private members of class student  admnointeger  sname20 characters  eng. math, science float  totalfloat  ctotal() a function to calculate eng + math + science with float  return type.  Public member function of class student  takeData() Function to accept values for admno, sname, eng,  science and invoke ctotal() to calculate total.  showData() Function to display all the data members on the screen. | 15 |
| (OR) | | | |
| 21. |  | Consider the definition of the following class:  class Sample{  private:  int x;  double y;  public :  Sample(); //Constructor 1  Sample(int); //Constructor 2  Sample(int, int); //Constructor 3  Sample(int, double); //Constructor 4  }; |  |
| a. | Write the definition of the constructor 1 so that the private member variables are initialized to 0. | 5 |
| b. | Write the definition of the constructor 2 so that the private member variable x is initialized according to the value of the parameter, and the private member variable y is initialized to 0. | 5 |
| c. | Write the definition of the constructors 3 and 4 so that the private member variables are initialized according to the values of the parameters. | 5 |
| 22. |  | Explain the types of inheritance in C++ with sample code. | 15 |
| (OR) | | | |
| 23. | a. | int \* iPtr ;  int \* jPtr ;  int \* kPtr;  inti = 5, k = 7;   |  |  | | --- | --- | | The effect of this code is depicted in the diagrams at the right. The first figure depicts variable declarations: **i** and **k** are integer variables, and **iPtr**, **jPtr**, and **kPtr** are variables that can *point to* an integer. | Macintosh:Users:bright:Downloads:ptr1.gif | |  |
| a. | |  |  | | --- | --- | | Write the equivalent code in C++ for getting the same that is portrayed on the right side. | Macintosh:Users:bright:Downloads:ptr2.gif | | 5 |
| b. | |  |  | | --- | --- | | Write the equivalent code in C++ for getting the same that is portrayed on the right side. | Macintosh:Users:bright:Downloads:ptr3.gif | | 5 |
| c. | Access the value of i through iPtr and jPtr. | 5 |
| 24. |  | Write C++ program to copy a text file to another text file. | 15 |
| (OR) | | | |
| 25. |  | Write a template function that returns the average of all the elements of an array. The arguments to the function should be the array name and the size of the array (type int).In main(), exercise the function with arrays of type int, long, double, and char. | 15 |

ALL THE BEST