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Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: IT204

Course Name: OBJECT ORIENTED TECHNIQUES (IT)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two questions, each carries 15 marks

- | | | Marks |
|---|---|-------|
| 1 | a) What are the drawbacks in procedural languages? | (4) |
| | b) What are the key concepts of Object Oriented Programming? | (6) |
| | c) What are the characteristics and applications of Constructors? | (5) |
| 2 | a) Write an operator overloading function for string concatenation. | (5) |
| | b) Write a conversion function to convert a class type to basic data type. | (5) |
| | c) Write a program to declare a student class with data members rollno, name and marks of 3 subjects and member functions to SetValue() and Display Values(). | (5) |
| 3 | a) What is the use of a copy constructor? Write a sample code of copy constructor. | (4) |
| | b) Differentiate between function overloading and operator overloading. | (4) |
| | c) What is the difference between static and constant variable? | (4) |
| | d) Define an array? Mention its applications. | (3) |

PART B

Answer any two questions, each carries 15 marks

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| 4 | a) What is multi-level inheritance? How is it different from multiple inheritance? Write a sample code to illustrate it. | (5) |
| | b) What is function overriding? | (5) |
| | c) How can we call the base class constructor from a derived class constructor? Write a sample code to illustrate it. | (5) |
| 5 | a) Differentiate between call by value and call by reference. | (5) |
| | b) Write a program to display the contents of an array using pointer. | (4) |
| | c) What are the advantages of using pointers? | (3) |
| | d) How dynamic memory allocation and deallocation of objects is done? | (3) |
| 6 | a) What is the application of public and private inheritance? | (5) |
| | b) "Pointers always contain integers" Comment on this statement. | (3) |
| | c) Class Y has been derived from class X. The class Y does not contain any data members of its own. Does the class Y require constructor? If yes, why? | (4) |
| | d) Illustrate a function having pointer argument to pass an array? Discuss the advantages of it. | (3) |

PART C

Answer any two questions, each carries 20 marks

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| 7 | a) How can a common friend function be defined for two different classes? | (5) |
| | b) What is an abstract class? Declare an abstract class? | (5) |
| | c) Write a program to write a class object to a file. | (5) |

- d) Write a short note on *this* pointer. (5)
- 8 a) Define a class template Pair which can have a pair of values. The type of the values is the parameter of the template. Define a member function Add() which adds the two values and returns the sum. (7)
- b) What are the keywords on which exception handling is built? Explain each one of them. Give an example. (7)
- c) What are generic classes? Why are they useful? Explain with an example how these are implemented in C++. (6)
- 9 a) Write a template function to find the maximum number from a template array of size N. (6)
- b) Explain the following functions for manipulating file pointers: (4)
seekg(), seekp(), tellg(), tellp().
- c) What is the difference between a virtual function and a pure virtual function? Give example of each. (6)
- d) Write a program to read three numbers x, y and z and evaluate R given by (4)
$$R = z/(x - y)$$

Use exception handling to throw an exception in case division by zero is attempted.
