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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

V SEMESTER B.TECH.(BME) DEGREE MAKE-UP EXAMINATIONS DEC/JAN 2016-17

SUBJECT: OBJECT ORIENTED PROGRAMMING (BME 311)

(REVISED CREDIT SYSTEM)

Tuesday, 3rd January 2017, 2 PM to 5 PM

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

- 1. Answer any FIVE full questions.**
- 2. Draw labeled diagram wherever necessary**

1. (a) Explain the following concepts associated with object oriented programming: **08**
 - i) Class
 - ii) Object
 - iii) Inheritance
- (b) Write a C++ program to define a class along with a public and a private data member. Create the objects of the class and explain the access of the data members using the member functions defined inside the class. **08**
- (c) What the major advantages are of object oriented programming? **04**
2. (a) What is polymorphism? What are its types? Explain. **06**
- (b) Discuss benefits of modular programming and explain passing parameter using pointer. **06**
- (c) What is single inheritance? Define a base class named "student" and derive a new class privately with respect to the base class "student" called "sports". **08**
3. (a) What is friend function? Explain how a function named as "FUN_1" can be declared as a friend of another class. **06**
- (b) Explain the following graphic functions : **06**
 - i) window
 - ii) initgraph

- (c) Define a base class “Product”. Inherit two derived classes named “Product_A” and “Product_B” with respect to the base “Product”, using “public” keyword. Identify the type of inheritance seen here. **08**
4. (a) Explain the rules for overloading an operator. Give an example to add two objects using the operator “+” . **10**
- (b) Explain data-type conversion between a class type and a basic data type. Explain this with an example. **10**
5. (a) Write a C++ program to open a file called “FILE_1” in writing only mode and to write the following character string into the file “ Manipal Institute of Technology”. **06**
- (b) What is dynamic polymorphism? Explain. **08**
- (c) Explain the importance of the “get-pointer”, during file operation. How a seekg() and tellg() are associated with the given pointer. **06**
6. (a) Explain the following statements: **08**
- i. ifstream-object.open(filename, mode);
 - ii. fstream file-object1;
- (b) Explain the exception handling mechanism with an example of “divide by zero”. **06**
- (c) List two important the characteristics of a class constructor and a destructor. Explain how it will be useful in an object oriented program. **06**