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# MANIPAL INSTITUTE OF TECHNOLOGY

(A Constituent Institute of Manipal University)
Manipal – 576 104

**V SEM B.TECH.(BME) DEGREE MAKE UP EXAMINATION DEC/JAN 2015-16**
**SUBJECT: OBJECT ORIENTED PROGRAMMING (BME311)**
(REVISED CREDIT SYSTEM)
**Friday, 8th January 2016: 2PM-5PM**

**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

   (b) Write a C++ program to define a class "Hospital" 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 advantages are of object oriented programming? 04

2. (a) What is polymorphism? What are its types? Explain any one. 06

   (b) Define two advantages of modular programming approach. Explain passing parameter using pointer. 06

   (c) What is single inheritance? Explain how it benefits a programmer. 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 "SUM" can be declared as a friend of class "Sample1". 06

   (b) Explain the functions used for performing the following in text mode of Graphics: 06

   i) Creation of text window
   ii) Display of text in the center of window

(c) Define a base class “Product”. Inherit two derived classes named “Product1” and “Product2” with respect to the base “Product”, using “protected” keyword. Identify the type of inheritance seen here. 08

4. (a) Explain how binary operator can be overloaded. Give an example to add two objects using the operator “ +” . 10

(b) How data-type conversion while handling an object and basic data type in an expression. Explain this with an example. 10

5. (a) Describe opening a file “ FILE1” using constructor . Explain how characters are written inside the file. 06

(b) What is dynamic polymorphism? Explain how virtual function can be declared and accessed in a program. 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:

i. ifstram-object.open(filename, mode);
ii. fstream file-object1; 06

(b) Explain how exception handling is done using following keywords: 08

(c) What is constructor? Describe the characteristics features of a constructor. 06