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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL A Constituent Institution of Manipal University

V SEMESTER B.TECH. (BME) DEGREE END SEMESTER EXAMINATIONS NOV 2017 SUBJECT: OBJECT ORIENTED PROGRAMMING (BME 4006)

(REVISED CREDIT SYSTEM)

Wednesday, 22nd November 2017: 2 to 5 PM

TIME: 3 HOURS

MAX. MARKS: 100

	Instructions to Candidates:			
1.	1. Answer all FIVE full questions.			
۷.	2. Draw labeled diagram wherever necessary			
1.	(a)	Explain the concept of "data hiding", and discuss its major benefit.	08	
	(b)	Specify the class HOSPITAL, with the following details:	08	
		 Private data member (<i>H_name</i> is for representing the hospital name) Public member functions: <i>H_Read()</i> and <i>H_write()</i>, define these member functions outside the class. Create two objects of the class "H1" and "H2". 		
	(c)	Explain the significance of the keyword "static", when used along with the data member.	04	
2.	(a)	Distinguish a constructor from a destructor. Explain the design of parameterized constructor for the class specified in Q $1(b)$.	06	
	(b)	How does a virtual function assist in resolving the run time problem? Explain.	06	
	(c)	What are 'exceptions'? Explain the mechanism of handling TYPE1 and TYPE2 exceptions, using a try-block consisting throw statements.	08	
3.	(a)	Explain the procedure for converting data type in the following cases:i. Conversion of the given class data type into a basic type.ii. Conversion of the given basic data type into a class type	06	
	(b)	Explain the opening of a file "DATA1.dat" with each of the following operation:	09	
		i. Write only mode for writing a character stringii. Reading only mode for reading existing content of the fileiii. Appending mode		
	(c)	What is function overloading? Explain.	05	

- 4. (a) Give two important rules that are considered for overloading an operator. Specify the class 08 "distance" for measuring distance in terms of "*feet and inch*". Overload the *less-than relational operator* (<) to compare the objects of the class distance.
 - (b) Explain the passing of a parameter with "pass by reference style" using pointer. Discuss 04 two benefits of modular programming approach.
 - (c) Write a C++Program to create a Hospital Record deriving new classes from the base class 08 *Hospital*. The class called *Patient* and *Doctor* derived from the base class, respectively with the protected and the public mode. Specify the derived classes: Patient and Doctor.



- 5. (a) What are file pointers? Describe the pointer default actions during write only mode. Give 06 the details of the manipulation functions to find the position of the pointer and for updating it during the same mode.
 - (b) With an example, explain the creation of a user-defined window of size 10x7 in order to 06 display a string.
 - (c) What is multilevel inheritance? Explain the visibility of the base class private, protected 08 and public members, in the case of the private derivation mode.