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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(AI&DS/AI&ML/ Block Chain/CSE/CS/DS/IOT/CSD/ECS/
Robotics & Artificial Intelligence/Internet of Things and Cyber Security
including Block Chain Technology) (Sem.–3)**

OBJECT ORIENTED PROGRAMMING

Subject Code : BTCS302-18

M.Code : 76437

Date of Examination: 06-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. **Write briefly:**
 - a. Define void data type.
 - b. Can pointer be incremented or decremented?
 - c. What is the purpose of protected access specifier in classes?
 - d. Write two uses of scope resolution operator?
 - e. What is function overloading?
 - f. What happens if class is inherited in protected mode?
 - g. What is the purpose of ifstream and ofstream?
 - h. Define virtual function.
 - i. *“Can a base class pointer point to a derived class object”?* Justify.
 - j. What happens if no catch block matches a thrown exception?

SECTION - B

2. Explain the four major principles of Object-Oriented Programming with suitable examples.
3. Write a program that uses an array of objects and shows use of constructors.
4. Explain the difference between compile-time and run-time polymorphism.
5. Write a program using try, catch and throw blocks to handle multiple exceptions.
6. Write a program to copy the contents of one file to another.

SECTION - C

7. What is parametrized constructor Write a program using a parameterized constructor to initialize student details.
8. Discuss Inheritance. Write a program showing hierarchical inheritance with Shape as base and Rectangle, Circle as derived.
9. **Write a short note on :**
 - a. Role of pointers in polymorphism.
 - b. String handling functions.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.