

Roll No.

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.**