31N0404

B.TECH. III SEM MAIN/BACK (NEW SCHEME)
ACADEMIC SESSION 2023-24

(Artificial Intelligence And Data Science)
III And Other Branches

3AD4–04 - Object Oriented Programming Using C++

Common to CS, IT, AI, DS, MC, CM, CD, CA, AD, AM, CY, IO

Time : 3 Hours]

[Max. Marks : 70

[Min. Passing Marks :

Instructions to Candidates :

Part–A : Short Answer Type Questions (up to **25** words) 10 × 2 = 20 marks. All 10 questions are compulsory.

Part–B : Analytical/Problem Solving questions 5 × 4 = 20 marks. Candidates have to answer 5 questions out of 7.

Part–C : Descriptive/Analytical/Problem Solving questions 3 × 10 marks = 30 marks. Candidates have to answer 3 questions out of 5.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/ calculated must be stated clearly.

Use of the following supporting materials is permitted during examination. (Mentioned in form no. 205).

1_____   2_____

Part–A

Q.1. Explain array and pointer with suitable example.

Q.2. What is default constructer ?

Q.3. What is the use of inline function ?

Q.4. What is use of friend function ?

Q.5. What is use of static data members ?

Q.6. What is operator overloading ?

Q.7. What is virtual function ?

Q.8. What is dynamic memory allocation ?

Q.9. Explain keyword try, catch and throw.

Q.10. Define a class template.

Part–B

5×4=20

Q.1. What is the various types of inheritance in C++ ? Give an example of each.

Q.2. Write the advantages of an object oriented programming over procedural programming language.

Q.3. When do we make virtual function 'pure' ? What are the implication of making a function a pure virtual function ? Explain.

Q.4. What is operator overloading ? How are unary operator overloaded ?

Q.5. What is a static variable ? Why is it called class variable ? Write a program to illustrate its application.

Q.6. What are new and delete operators in C++ ? Illustrate with an example.

Q.7. Distinguish between overloaded function and function templates.

F–029

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Part–C

Q. 1. Write a class which has two datamembers. Find maximum of these two data members using member function of the class.

Q. 2. What are the different problems that can arise when the two parent classes of particular class have common ancestor ? Explain with example.

Q. 3. Define Polymorphism. Explain its types. How polymorphism is implemented in C++ ? Give suitable examples.

Q. 4. What do you mean by exception handling in C++ ? Write a program that throws an arithmetic exception as and when a number input is a negative number.

Q. 5. What is the need of copy constructors ? How do you implement them in C++ ? Differentiate between copy constructor and overloaded assignment operator with the help of an example.

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