Code No.: AI304PC | R20 | H.T.No. | | | 8 | R | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–B.TECH–I–Semester End Examinations (Supply) – June- 2022
OBJECT ORIENTED PROGRAMMING USING C++
(Common to CSC, CSD & CSM)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: 1. Answer *any FIVE* questions. Each question carries 14 marks.
2. All questions carry equal marks.
3. Illustrate your answers with NEAT sketches wherever necessary.

5X14=70

1. a) Explain the structure of C++ program with a neat diagram. [7M]
   b) Write C++ program to count number of alphabets, digits and special characters in string. [7M]

2. a) Define constructor. List and explain the different types of constructors in C++. [7M]
   b) Write a C++ program to create a class with the following data members. Name of the class: Vehicle, Data members: name, model, company, Price, and variants, Member functions: putdetails() and getdetails() to set and display Vehicle details respectively. [7M]

3. a) What is inheritance? Explain about Multiple inheritance and Hybrid inheritance with suitable examples. [7M]
   b) Write a C++ program to use pointer for both base and derived classes and call the member function. Use virtual keyword. [7M]

4. a) What is meant by operator overloading? Discuss necessity for operator overloading and also list out which operators can be overloaded, and which cannot be overloaded. [7M]
   b) Explain briefly about error handling during file I/O. [7M]

5. a) Describe about exception specifications and stack unwinding in detail. [7M]
   b) Write a C++ program to illustrate Re-throwing an exception. [7M]

6. a) What are the different paradigms for problem solving? Discuss the differences between OOP and procedure oriented programming. [7M]
   b) Write a C++ program to create an array of pointers. Invoke functions using array objects. [7M]

7. a) Explain briefly about Data abstraction and Information Hiding. [7M]
   b) Write a C++ program to use scope resolution operator. Display the various values of the same variables declared at different scope levels. [7M]

8. a) What is polymorphism? Write a C++ program to overload area() function to calculate area of shapes like triangle and circle. [7M]
   b) Explain about abstract class with suitable example. [7M]

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