

2017/EVEN/08/24/MCS-404/555

UG Even Semester (CBCS) Exam., May-2017

COMPUTER SCIENCE

(4th Semester)

Course No. : MCSCC-404

(Object-oriented Programming with C++)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer five questions, selecting one from each Unit

UNIT—I

- ✓ 1. (a) ✓ Explain the basic concepts of object-oriented programming with examples. 10
- ✓ (b) ✓ What is software reuse? What are the factors influencing the software reuse? 2+2=4

(2)

2. (a) What is software crisis? Explain how object-oriented paradigm overcomes this software crisis. $2+4=6$
- (b) Discuss the merits and demerits of object-oriented methodologies. 8

UNIT—II

3. (a) What are the advantages of function prototypes in C++? Describe the different styles of writing prototypes. 5
- (b) What is a datatype? What are the different datatypes supported by C++? 5
- (c) Write a C++ program to find the largest of two numbers. 4

4. (a) What do you mean by overloading of function? Write overloaded function for computing area of a triangle, a circle and a rectangle. $2+6=8$

- (b) What are the new operators added by C++ that aids OOP? 4

- (c) What do you mean by dynamic initialization of a variable? Give an example. 2

(3)

UNIT—III

5. (a) What is static data members? What are the characteristics of static data members? $2+3=5$

- (b) Write a program to count the number of objects in C++ using static data members. 5

- (c) What are the different types of constructors? 4

6. (a) What is friend class? Write a program to demonstrate the method of bridging classes using friend class. $1+5=6$

- (b) Why a friend function cannot be used to overload subscripting operator []? Explain. 6

- (c) Why is it necessary to overload an operator? 2

UNIT—IV

7. (a) What are the differences between overloading and overriding? 5

- (b) Is it possible for the objects of a derived class to access the private members of the base class? If yes, how? Explain with a program. $1+4=5$

- (c) What are the ambiguities that arise in multiple inheritance? How can they be resolved? $2+2=4$

8. (a) How is polymorphism achieved at (i) compile time and (ii) run time? 6
- (b) What is pure virtual function? 2
- (c) Write the rules for virtual functions. 6

UNIT—V

9. (a) What do you mean by MFC? Write the features of MFC. 2+4=6
- (b) What is MFC library? What are the different types of MFC class library? 2+4=6
- (c) What is the MFC application? 2
10. (a) What is file mode? What are the file mode parameters? 1+6=7
- (b) What are input and output streams? What are the steps involved in using a file in a C++ program? 2+2=4
- (c) Describe the various approaches by which we can detect the end-of-file condition. 3

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