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. *(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

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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