

2017

MCA

3rd Semester Examination

OBJECT ORIENTED PROGRAMMING USING C++

PAPER—MCA 303

Subject Code—32

Full Marks : 100

Time : 3 Hours

The figures in the right hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any five from the rest.

1. Answer any five :

5×2

- (a) What is the advantage of data abstraction ?
- (b) What are the standard stream operators of C++ ?
- (c) What are default arguments ?

(Turn Over)

- (d) What does it mean by saying 'object of a class' ?
- (e) What are the access specifiers available in C++ ?
- (f) What is the advantage of Dynamic memory allocation over static memory allocation.
2. (a) What is static data member ? Why do we need static data member ? What is the syntax to define a static data member. 2+2+2
- (b) Explain in brief the concept of 'friend' in C++ ? Why we need friend class ? 4+2
3. (a) Explain with example how memory allocation is done dynamically using 'new' operator. 3
- (b) What happens when the 'new' operator fails to allocate required amount of memory from the heap ? Also mention how do you change the default behaviour of 'new' operator using 'set_new_handler' function ? 3+6
4. (a) Describe in brief the different ways to pass the class objects to function ? 6
- (b) What is inline function ? What are the advantages of inline function ? Under what conditions does the function

cannot be made inline by the compiler ? 2+2+2

5. (a) What is constructor ? Why we need constructor ? What are the characteristics of constructor ? 2+2+2
- (b) Under what situations does copy constructors are called ? Explain all the situation with example. 6
6. (a) What is inheritance ? Explain the role of 'protected' access specifiers in Inheritance ? 2+4
- (b) Write a C++ program to demonstrate the hierarchical inheritance. 6
7. Write short notes on (any four) : 4×3
- (a) This pointer ;
- (b) Arrow operator ;
- (c) Destructor ;
- (d) Polymorphism ;
- (e) Parameterized dynamic constructor ;

- (f) VTBL & VPTR ;
- (g) Virtual base class.

5. Compare and contrast (any *three*) : 3×4

- (a) Object oriented programming and procedure oriented programming ;
- (b) Structure and Class ;
- (c) Function overloading and function overriding ;
- (d) Static member function and constant member function.

[Internal Assessment : 30 Marks]
