

Total No. of printed pages = 6

Co-506/OOM/5th Sem/2018/M

OBJECT ORIENTED METHODOLOGY

Full Marks - 70

Time - Three hours

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

PART - A

Marks - 25

This part consists of *five* questions each of which carries 5 marks.

All questions are compulsory.

1. Choose the appropriate option : $1 \times 5 = 5$
- (i) When a function is defined inside a class, the function is called
- (a) inside function (b) class function
- (c) inline function (d) interior function

[Turn over

- (ii) A static data member function of a class
- (a) both static and non-static
 - (b) static member function only
 - (c) non-static member function only
 - (d) none of the above

(iii) Regarding a constructor which one of the following is true?

- (a) A constructor is always without any parameter
- (b) A constructor must have a return data type
- (c) A constructor is called by the compiler
- (d) A constructor can not be overloaded

(iv) Regarding an inheritance which one of the following is true?

- (a) Inheritance is one of the features of OOPS.
- (b) Public inheritance allows sub class to access the private members of the base class.
- (c) Default constructor of sub class pass arguments to that of the base class.
- (d) None of the above.

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(2)

- (ii) A static data member is shared by
- (a) both static and non-static member function of a class
 - (b) static member function only
 - (c) non-static member function only
 - (d) none of the above

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- (a) Inheritance is one of the features of OOPS.
- (b) Public inheritance allows sub class to access the private members of the base class.
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- (d) None of the above.

(v) Regarding function overriding which one of the following is true ?

- (a) It requires the concept of inheritance.
- (b) Concept of virtual function is must.
- (c) Base class constructor can not be overridden.
- (d) Overridden member function of the sub class redefines the functionality.

2. Fill in the blanks : 1×5=5

- (a) A member function of a class defined within it is by default an function.
- (b) and members of a class are accessible by the objects of its sub class.
- (c) members of a class are sharable by all the objects of that class.
- (d) A default constructor is without any

3. Answer the following in a single word/sentence each : 1×5=5

- (a) What do you mean by encapsulation ?
- (b) What is the name of the operator used with 'cin' ?

(c) of members
(d) Which non-member function can access its private and protected members?
(e) What is a template parameter?

4. Write down whether the following are true or false. 1×5=5

- (a) A void pointer can be declared.
- (b) A class is a data type.
- (c) Default constructors are declared and defined by the compilers only.
- (d) Pointers are not supported in C++.
- (e) Dynamic memory allocation is not possible in C++.

5. Match the following :

Column A	Column B
Inline function	are associated with DMA
Destructor	has no formal parameter
Pure virtual function	is without definition
Pointers	is one of the access specifiers
Protected	has no looping.

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(4)

800(B)

- (c) Which access specifier provides global access of members of a class ?
- (d) Which non-member function of a class can access its private and protected members ?
- (e) What is a template parameter ?
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(4)

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PART - B

Marks - 45

Answer any *five* questions.

6. Explain briefly the main features of OOPS. Write a C++ program to overload * (multiplicative) operator. $4+5=9$

7. What do you mean by a class data type ? How does it differ from a primitive data type ? Differentiate between constructors and destructors. $2+2+5=9$

8. (a) When will you make a function inline ? When will you define a static member data ? $2+2=4$

(b) Write a C++ program to find the area and circumference of a circle implementing the concept of class and object. 5

9. Differentiate between early binding and late binding. Write a C++ program to realise the concept of function overriding. $3+6=9$

10. Differentiate between any *three* of the following :

(a) Private and public access specifier

- (b) Multilevel inheritance and multiple inheritance
- (c) Virtual function and pure virtual function
- (d) Compile time polymorphism and run time polymorphism. $3 \times 3 = 9$

11. Write short notes on any *three* : $3 \times 3 = 9$

- (a) Template
- (b) Abstract class
- (c) Operator overloading
- (d) Friend function.