

Total No. of printed pages = 6

**END SEMESTER EXAMINATION – 2022**

Semester : 4th

Subject Code : Co-404

**ADVANCED C/C++**

Full Marks – 70

Time – Three hours

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

**Instructions :**

1. *All* questions of PART – A are compulsory.
2. Answer any *five* questions from PART – B.

**PART – A**

Marks – 25

1. Fill in the blanks : 1×5=5

(a) A \_\_\_\_\_ is a special member function used to initialize the data members of a class.

(b) A \_\_\_\_\_ is a special member function used to destroy the used objects of a class.

[Turn over

- (c) The default access specifier (in C++) for members of a class is \_\_\_\_\_.
- (d) Inheritance provides \_\_\_\_\_ by using previously proven and high quality software.
- (e) A class is called as abstract base class if it has a \_\_\_\_\_ function.

2. Write True or False :  $1 \times 5 = 5$

- (a) C++ is a procedural and object-oriented programming language.
- (b) In C++ Class members are public by default.
- (c) A parametric constructor may not have any argument.
- (d) Friend functions have access only to public members of the class.
- (e) We can implement generic classes using templates.

3. Choose the correct answer :  $2 \times 5 = 10$

- (a) What is the output of the following code ?
- ```
void main ()
{
  int i = 5 ;
  I = 2*++ i ;
```

11/Co-404/Adv.C/C++/4th Sem (2)

```
cout<<i ;
}
```

- (i) 11 (ii) 10  
(iii) 12 (iv) None of these

(b) What is the output of the following code ?

```
void main ()
```

```
{
```

```
  int x=10, z ;
```

```
  z = x++ - x++ ;
```

```
  cout<<z <<x ;
```

```
}
```

- (i) 0, 12 (ii) 11, 13  
(iii) 10, 12 (iv) None of these

(c) What is the output of the following code ?

```
void main()
```

```
{
```

```
  cout<< ;
```

```
}
```

- (i) 1 (ii) 0  
(iii) No output (iv) Error

11/Co-404/Adv.C/C++/4th Sem (3) [Turn over

(d) What is the output of the following code ?

```
void main ()
{
int*p,a = 20 ;
p=&a ;
a++ ;
cout<<*p ;
}
```

- (i) 20                      (ii) Error  
(iii) 21                     (iv) None of these

(e) What is wrong with the following program ?

```
void main()
{
int b=0 ;
do
}
cout<<b ;
b++ ;
}while (b!=10) ;
}
```

- (i) There is nothing wrong in the program.  
(ii) Variable 'b' must not be initialized in the loop.  
(iii) The condition for while loop is not valid  
(iv) None of the above.

4. Answer the following in a word/sentence each :

1×5=5

- (a) What is a copy constructor ?  
(b) What do you mean by operator precedence ?  
(c) What do you mean by polymorphism ?  
(d) What do you mean by a pre-processor directive ?  
(e) What is a header file ?

PART - B

Marks - 45

5. Define any six of the following with examples :

1½×6=9

- (i) Data type qualifier, (ii) Inline function,  
(iii) Pointer, (iv) Array, (v) Abstract class,  
(vi) Pure virtual function, (vii) Base pointer,  
(viii) Template parameter, (ix) Binary file.

6. Differentiate between the following : 3×3=9

- (i) Procedural Programming Language Vs. Object-Oriented Programming Language.  
(ii) Default constructor and Parametric constructor.

(iii) Function overloading and Function overriding.

7. What is the role played by an access specifier? Differentiate amongst different access specifier used in C++. Write a C++ program to show that a static member function can access only static members.

$$1+3+5=9$$

8. What is the use of 'this' pointer? What is the advantage of a friend function? Write a C++ program to add to integer numbers by overloading +(plus) arithmetic operator.

$$1+2+6=9$$

9. Categorize inheritance in C++ based on access specifier. What do you mean by virtual base class? Give an example to show the disadvantages of an abstract class.

$$3+2+4=9$$

10. What are the advantages of using Template in C++ programming? What do you mean by exception Handling? Write a C++ program to add two numbers implementing the concept of Template.

$$1+2+6=9$$

11. What are main built-in classes in C++ used for handling files? Write a C++ program to write a few lines to a text files and to read the contents of the same file.

$$2+7=9$$