

2017

(3rd Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-304

(Object-oriented Programming in C++)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

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

1. (a) Differentiate between procedure-oriented programming and object-oriented programming. 4
- (b) Explain the following terms : 2×3=6
- (i) Class
 - (ii) Object
 - (iii) Encapsulation

Or

- (c) Write a CPP program to demonstrate inheritance. 8
- (d) Differentiate between variables and constants. 2

2. (a) Explain the concept of function overloading with example. 4
- (b) Explain the concept of array of object with a program example. 6

Or

- (c) What is friend function? Why do we need friend function? 4
- (d) Explain the concept of in-line function with a program example. 6

3. (a) Define a class 'complex No' which has two real numbers (float type) as private data member, one represent the real part and one for imaginary part. Define constructors to initialize the object. 5
- (b) What is copy constructor? 2
- (c) What are the three special characteristics of static data member? 3

(3)

Or

- (d) Differentiate between constructor and destructor. 4
- (e) Write a CPP program to find the sum of two complex numbers using overloading binary operator. 6
4. (a) What are derived class and base class? 2
- (b) Differentiate between public and private inheritances. 4
- (c) What is operator overloading? Explain the steps involved in operator overloading. 4
- Or*
- (d) Explain the concept of multiple inheritance with a program example. 6
- (e) What are new and delete operators in memory management? 4
5. (a) What is a template? Write a CPP program to show the use of function template. 1+4=5
- (b) Define container. With a neat diagram explain the three categories of a container. 1+4=5

(4)

Or

- (c) Explain hierarchy of the stream classes with a neat and labelled diagram. 5
- (d) What is an exception? How is it handled in C++? 5

Subject Code : III/BCA/304

Booklet No. A

Date Stamp

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To be filled in by the Candidate

DEGREE 3rd Semester
(Arts / Science / Commerce /
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Subject

Paper

INSTRUCTIONS TO CANDIDATES

1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.
2. This paper should be **ANSWERED FIRST** and submitted within 1 (one) Hour of the commencement of the Examination.
3. While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.

To be filled in by the Candidate

DEGREE 3rd Semester
(Arts / Science / Commerce /
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Roll No.

Regn. No.

Subject

Paper

Descriptive Type

Booklet No. B

*Signature of
Scrutiniser(s)*

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Examiner(s)*

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Invigilator(s)*

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(3rd Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-304

(Object-oriented Programming in C++)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

- 1.** Choose the correct alternative by putting a Tick (✓)
mark in the brackets provided : 1×10=10

(a) In which of the following situations, will you make
use of the scope resolution operator?

- (i) Definition written within the main()
function ()
- (ii) Definition written within the
class ()
- (iii) Definition written outside the
class ()
- (iv) None of the above ()

(2)

(b) Nesting of classes implies ____.

(i) polymorphism ()

(ii) inheritance ()

(iii) relationship ()

(iv) encapsulation ()

(c) Which of the following is not a member of class?

(i) Virtual function ()

(ii) Static function ()

(iii) Friend function ()

(iv) Data member ()

(d) Which of the following is legal to access a class data member using 'this' pointer?

(i) (*this).x ()

(ii) *(this.x) ()

(iii) *this.x ()

(iv) **this.x ()

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(3)

(e) Which of the following functions is performed by a constructor?

(i) Construct a new class ()

(ii) Destroy a class ()

(iii) Initialize object ()

(iv) Create a new function ()

(f) The operator that cannot be overloaded is ____.

(i) * operator ()

(ii) ++ operator ()

(iii) ~ operator ()

(iv) · operator ()

(g) A private member function of the base class can be accessed by derived class objects using ____ member functions of the base class.

(i) protected ()

(ii) private ()

(iii) public ()

(iv) All of the above ()

(4)

(h) A _____ function takes objects as its argument.

(i) friend ()

(ii) static ()

(iii) member ()

(iv) None of the above ()

(i) An exception is caused by _____.

(i) a compile error ()

(ii) a run-time error ()

(iii) a hardware problem ()

(iv) All of the above ()

(j) The function's most important role is _____.

(i) to accept arguments and provide a return value ()

(ii) to give a name to a block ()

(iii) to reduce program size ()

(iv) to do complicated calculations ()

(5)

2. Indicate *True (T)* or *False (F)* by a Tick (✓) mark :
1×5=5

(a) To use either input or output file, the program must include the **fstream.h**.

(T / F)

(b) A static function can be called using the object name and function name.

(T / F)

(c) It is mandatory to open the file before you perform read/write operation on it.

(T / F)

(d) When an exception is not caught, the program is aborted.

(T / F)

(e) Template functions cannot be overloaded.

(T / F)

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(6)

SECTION—II

(Marks : 10)

3. Answer the following questions : 2×5=10

(a) What are the significance of visibility modes in inheritance?

(7)

(b) Give any two applications of OOP.

(8)

(c) Explain virtual function.

(d) Define stream. Give example.

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(9)

(e) What is generic programming?

★ ★ ★