

# JK LAKSHMIPAT UNIVERSITY, JAIPUR

## INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), April-May 2018

B. Tech in Computer Science Engineering (IBM-BDA, MC, IS, CC), Semester II

Roll No.....

CSESP201 : Software Foundation Programming using C++

Time: 3 hours

Max. Marks: 100

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### Instructions to students:

1. Do not write anything other than your roll number on question paper.
  2. Assume suitable data wherever required and mention it clearly.
  3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
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Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

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- i. Which type is best suited to represent the logical values?
  - a) integer
  - b) boolean
  - c) character
  - d) all of the mentioned
- ii. Which operator is having the highest precedence?
  - a) postfix
  - b) unary
  - c) shift
  - d) equality
- iii. Which is used to define the member of a class externally?
  - a) :
  - b) ::
  - c) #
  - d) none of the mentioned
- iv. The fields in the class in c++ program are by default
  - a) protected
  - b) private
  - c) public
  - d) none of the mentioned
- v. Pick out the correct statement.
  - a) A derived class's constructor cannot explicitly invokes its base class's constructor
  - b) A derived class's destructor cannot invoke its base class's destructor
  - c) A derived class's destructor can invoke its base class's destructor
  - d) None of the mentioned
- vi. Which operator is used to declare the destructor?
  - a) #
  - b) ~
  - c) @
  - d) \$

- vii. What is meant by ofstream in c++?
    - a) Writes to a file
    - b) Reads from a file
    - c) Writes to a file & Reads from a file
    - d) None of the mentioned
  - viii. Where does a cin stops it extraction of data?
    - a) By seeing a blankspace
    - b) By seeing (
    - c) By seeing a blankspace & (
    - d) None of the mentioned
  - ix. Which function is used to position back from the end of file object?
    - a) seekg
    - b) seekp
    - c) both seekg & seekp
    - d) none of the mentioned
  - x. Which statement is used to catch all types of exceptions?
    - a) catch()
    - b) catch(Test t)
    - c) catch(...)
    - d) none of the mentioned
- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- i. Differentiate between data abstraction and data encapsulation.
  - ii. Differentiate between error and exception.
  - iii. Define destructor? Can it be overloaded?
  - iv. Explain namespace with suitable example.
- Q.3A Explain the concept of Parameterized Constructor using suitable example. 05
- Q.3B How are data and functions organized in class structure? Write a C++ program to achieve function overloading with relevant example. 05
- Q.4A Describe the syntax of an operator function. Also explain unary operator overloading concept. 05
- Q.4B Describe the syntax of multiple inheritance. When do we use such an inheritance? 05
- Q.5A Discuss virtual base class. How do the properties of the following two derived classes differ? 05
- a. class D1: private B { // .... }
  - b. class D2: public B { // .... }
- Q.5B When do we make a virtual function "pure"? What are the implications of making a function a pure virtual function? 05
- Q.6A Describe the various concept of exception handling mechanism. Write a program that illustrates the application of multiple catch statements. 05
- Q.6B Explain the concept of inline function. Explain XML using relevant script. 05

OR

Q.6B How does a C++ structure differ from a C++ class? Write a XML script for employee details. 05

Q.7 (A) Discuss the basic difference between manipulators and ios member functions in implementation. Give examples. 10

(B) Design your own manipulator to provide the following output specification for printing money value:

- 1) 10 columns width
- 2) The character '\$' at the beginning
- 3) Showing '+' sign.
- 4) Two digits precision
- 5) Filling of unused spaces with '\*'
- 6) Trailing zeros shown

Q.8 (A) A file contains a list of names and telephone numbers in the following form: 30

| Name | Tel. No. |
|------|----------|
|------|----------|

Write a C++ program to read the file and output the list in the tabular format. The name should be left-justified and numbers right-justified. Use a class object to store each set of data.

(B) Write an interactive, menu-driven program that will access the file created in above program and implement the following tasks:

- i) To determine the telephone numbers of the specified person.
- ii) To determine the name if a telephone number is given.
- iii) To update the telephone number whenever there is a change.

(C) Define a function template for swapping two integer and float numbers.