BTS-III(S)-(11.20/04.21)-1699 Reg. No. | | | | | | | | |

B

B.Tech. Degree III Semester Supplementary Examination November 2020/April 2021

CS/IT 15-1304 OBJECT ORIENTED PROGRAMMING

(*2015 Scheme*)

Time: 3 Hours Maximum Marks: 60

PART A

(Answer *ALL* questions)

(10 × 2 = 20)

I. (a) What is the advantage of using inline function?
(b) What is a friend function?
(c) Why static variable declared inside a class are called class variable?
(d) What are the different types of constructors?
(e) What is a destructor?
(f) What is an abstract base class?
(g) What is a pure virtual function?
(h) What is virtual base class?
(i) What are the different ways in which we can open a file?
(j) Write about the different file modes.

PART B

(4 × 10 = 40)

II. Explain the basic concepts of object oriented programming. (10)

OR

III. What do you mean by overloading of a function? Explain with an example. (10)

IV. Define a class to represent a bank account. Include the following members: (10)

Data members:

(i) Name of the depositor
(ii) Account number
(iii) Type of account
(iv) Balance amount in the account

Member functions:

(i) To assign initial values
(ii) To deposit an amount
(iii) To withdraw an amount after checking the balance
(iv) To display name and balance

Write a main program to test the program.

OR

V. A book shop maintains the inventory of books that are being sold at the shop. The list includes details such as author, title, price, publisher and stock position. Whenever a customer wants a book, the sales person inputs the title and author and the system searches the list and displays whether it is available or not. If it is not, an appropriate message is displayed. If it is, then the system displays the book details and requests for the number of copies required. If the requested copies are available, the total cost of the requested copies is displayed; otherwise the message "Requested copies not in stock" is displayed. (10)

Design a system using a class called books with suitable member functions and constructors.

(P.T.O.)

VI. Explain the different types of inheritance. (10)

OR

VII. Assume that a bank maintains two kinds of accounts for customers, one called as savings account and the other as current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed. (10)

Create a class account that stores customer name, account number and type of account. From this derive the classes curracct and savacct to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks:

(i) Accept deposit from a customer and update the balance.

(ii) Display the balance.

(iii) Compute and deposit interest.

(iv) Permit withdrawal and update the balance.

(v) Check for the minimum balance, impose penalty, if necessary, and update the balance.

Do not use any constructors. Use member functions to initialize the class members.

VIII. Illustrate the use of templates with a C++ program. (10)

OR

IX. Illustrate the use of exception handling with a C++ program. (10)

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