SEAT NO.: 66009

H.S.S.C. PRACTICAL EXAMINATION 2018-2019

Subject:- Computer Science

Time: 3 Hours **Max. Marks: 25**

Instruction:

1) Both the long and the short program should be written on the answer book supplied before typing on the computer.
2) Both the programs should be written in C++ using OOPs Concept
3) Figures to the right indicate full marks.
4) Each program should be written on a fresh page.

Q.1) Define a class named TEXT consisting of the following Members:

i) LINE: a character array of size 80 under private visibility label.
ii) Define a default constructor to accept a line of text from the user and determine the total number of consonants present in it for display.

Write a relevant main function to complete the program. (05)

Q.2) Write a menu driven program to implement a stack using singly linked list in which each node consists of a single data field of type character and performs the following operations:

i) push a node onto the stack
ii) pop the top node from the stack
iii) Displaying data field of all the nodes in the stack horizontally. (11)

Q.3) Internal Work (02)

Q.4) Project Work (03)

Q.5) Viva

a) Year Work (02)
b) Project Work (02)

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Q.1) Define a class named SERIES consisting of the following Members:

i) N: of type unsigned short integer under private visibility label. (N indicates number of terms)

ii) D: of type float under private visibility label. (D indicates angle in degree)

iii) Define a default constructor to accept D and N from the user and compute cos(x) by determining the summation of first 'N' terms of the following series for display.

$$\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \frac{x^8}{8!} \ldots\ldots\ldots\ldots$$ where x is angle in radians. (05)

Write a relevant main function to complete the program.

Q.2) Define a class named BILL with the following members:

i) Item_code: of type unsigned short integer under private visibility label

ii) item_name: a character array of size 30 under private visibility label

iii) unit_price,total : of type float under private visibility label.

iv) quantity: of type unsigned short integer under private visibility label.

v) Define a member function named "get_data" to accept data members item_code,item_name,unit_price and quantity.It computes total as quantity * unit_price.

vi) Define a member function named "put_data" to display data members item_code, item_name,unit_price,quantity and total.

Write a menu driven main function to

a) Create a binary file named "market.data" containing objects of type BILL.

b) Display all the data members of the objects read from file "market.data" in tabular form. (11)

**********ALL THE BEST********** (11)

SEAT NO.: _____

SAMPLE OUTPUT

ITEM_CODE	ITEM_NAME	UNIT_PRICE	QUANTITY	TOTAL
1000	PEN	10.00	5	20.00
2000	PENCIL	5.00	3	15.00

Q.3) Internal Work (02)

Q.4) Project Work (03)

Q.5) Viva

a) Year Work (02)

b) Project Work (02)

SEAT NO.: 66023

H.S.S.C. PRACTICAL EXAMINATION 2018-2019

Subject:- Computer Science

Time: 3 Hours **Max. Marks: 25**

Instruction:

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3) Figures to the right indicate full marks.
4) Each program should be written on a fresh page.

Q.1) Define a class named MATRIX with the following members:

i) size: of type unsigned short integer under private

ii) TABLE: a 2-D array of size 10 x 10 under private visibility label.

iii) Define a private member function named "process" which determines whether array "TABLE" is symmetric or not for display.

iv) Define a default constructor, which accepts value of "size" and accept numbers in the TABLE. It further calls member function "process".

Write a relevant main function to complete the program. (05)

NOTE: When transpose of a matrix is same as the original matrix, then it is symmetric.

Q.2) Define a class named BINARY consisting of the following members:

i) list: an array of type short integer of size 30 under private visibility label.

ii) N : of type short unsigned integer (indicates total number of elements to be accepted in array "list") under private visibility label.

iii) Define a default constructor to accept data member "N" and to accept the numbers in the array "list". It further calls member function "search".

iii) Define a private member function named "search" which accepts the number to be searched from the user and determines whether it is present in the "list" using binary search technique.

Write a relevant main function to complete the program. (11)

Q.3) Internal Work (02)

Q.4) Project Work (03)

Q.5) Viva .

a) Year Work (02)

b) Project Work (02)

**********ALL THE BEST********** (5)

SEAT NO.:_____

H.S.S.C. PRACTICAL EXAMINATION 2018-2019

Subject:- Computer Science

Time: 3 Hours **Max. Marks: 25**

Instruction:

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Q.1) Define a class named NUMBER consisting of the following members:

i) num: of type short unsigned integer under private visibility label.

ii) Define a default constructor to accept the data member "num" and determines whether it is a palindrome number or not for display.

Write a relevant main function to complete the program.

Note: A positive integer number is a "Palindrome Number" if its reversal is equal to original number. (05)

Q.2) Define a class named BUBBLE consisting of the following members:

i) list: an array of type short integer of size 30 under private visibility label.

ii) N : of type short unsigned integer (indicates total number of elements to be accepted in array "list") under private visibility label.

iii) Define a default constructor to accept data member "N" and to accept the numbers in the array "list". It further calls member function "sort" followed by member function "show".

iii) Define a private member function named "sort" which performs sorting of numbers in the array "list" using bubble sort technique (sort in ASCENDING order).

iv) Define a private member function named "show" which displays the content of array.

Write a relevant main function to complete the program. (11)

Q.3) Internal Work (02)

Q.4) Project Work (03)

Q.5) Viva

a) Year Work (02)

b) Project Work (02)

**********ALL THE BEST********** 0

SEAT NO.:_____

H.S.S.C. PRACTICAL EXAMINATION 2018-2019

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Q.1) Define an abstract class named B consisting the following members:

i) NUM1: a unsigned short integer under private visibility label.
ii) NUM2: a unsigned short integer under protected visibility label.
iii) Define a member function named "input" under protected visibility label which accepts value of NUM1 from the user.
iv) Define a member function named "getdata" under protected visibility label which returns the value of num1.

Extend the class B to derive a new class named D using public derivation. It consists of the following members:

i) SUM: of type short integer under private visibility label.
ii) Define a private member function named "show", which displays the value of NUM1, NUM2 and SUM.
iii) Define a constructor, which calls member function "input" and then accepts the value of NUM2 from the user. It also computes the value of SUM by adding NUM1 and NUM2. It further calls member function "show".

Write a relevant main function to complete the program. (05)

Q.2) Define a class named INSERT consisting of the following members:

i) list: an array of type short integer of size 30 under private visibility label.
ii) N : of type short unsigned integer(indicates total number of elements to be accepted in array "list") under private visibility label.
iii) Define a default constructor to accept data member "N" and to accept the numbers in the array "list". It further calls member function "sort" followed by member function "show".
iv) Define a private member function named "sort" which performs sorting of numbers in the array "list" using insertion sort technique (sort in ASCENDING order).
v) Define a private member function named "show" which displays the content of array.

**********ALL THE BEST********** (3)

SEAT NO.:_____

H.S.S.C. PRACTICAL EXAMINATION 2018-2019

Subject:- Computer Science

Time: 3 Hours **Max. Marks: 25**

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4) Each program should be written on a fresh page.

Q.1) Define a class named FILES with the following members:

i) Define a private member function named "creation" which creates two text files named "country.txt" and "capital.txt". "country.txt" contains names of countries whereas "capital.txt" contains respective capital of countries.

ii) Define a private member function named "show" which displays name of countries and capitals in tabular form.

iii) Define a default constructor, which has a menu driven code in order to call the member functions "creation" and "show".

Write a relevant main function to complete the program. (05)

SAMPLE OUTPUT:

COUNTRY	CAPITAL
INDIA	NEW DELHI
SRI LANKA	COLUMBO

Q.2) Define a class named MERGE consisting of the following members:

i) A,B,C: 1-D arrays of type short integer of size 50 each under private visibility label.

ii) M,N : of type short unsigned integer (indicates total number of elements in A and B respectively) under private visibility label.

iii) Define a default constructor to accept data members "M" and "N" and to accept the numbers in the arrays A and B (both in ascending order). It further calls member function "process".

iii) Define a private member function named "process" which performs merging of all elements in A and B to obtain array C in ASCENDING order for display.

Write a relevant main function to complete the program. (11)

Q.3) Internal Work (02)

Q.4) Project Work (03)

Q.5) Viva .

a) Year Work (02)

b) Project Work (02)

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H.S.S.C. PRACTICAL EXAMINATION 2018-2019

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Write a relevant main function to complete the program. (05)

SAMPLE OUTPUT:

COUNTRY	CAPITAL
INDIA	NEW DELHI
SRI LANKA	COLUMBO

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Write a relevant main function to complete the program. (11)

Q.3) Internal Work (02)

Q.4) Project Work (03)

Q.5) Viva .

a) Year Work (02)

b) Project Work (02)

**********ALL THE BEST********** 7