KRISHNA PUBLIC SCHOOL, NEHRU NAGAR, BHILAI

for AISSCE Practical Examination -2017-18

Subject: Computer Science (083) LIST OF PRACTICAL FILE PROGRAMS

Practical file must have:

- Show formatted output, give appropriate messages accordingly. Use user defined functions as and when required. Use proper case in output messages.

1. Write a program to print all the numbers between a given ranges- such that the number and its reverse both are Prime. (Use User defined function)

2. Write a program to accept start and end range from user and define a Menu to print following between the given range using the concept of UDF (user defined functions).
   Give message if no number is found of a given type:
   1. Print all Primes.
   2. Print all Krishnamurthy numbers.
   3. Print all Armstrong Numbers.
   4. Print all Palindrome Numbers.
   5. QUIT

   [Note: Krishnamurthy number is a number in which sum of factorial of each digit result in number itself. ex: 145 = !1+ !4+ !5
   Armstrong Number is a number in which sum of cubes of digit is the number itself. ex: 153= 1^3 + 5^3 + 3^3 .]
3. Write a program to accept number and make following number converter using concept of UDF (user defined functions).
   1. Decimal to Binary
   2. Decimal to Octal
   3. Decimal to Hexadecimal
   4. QUIT

4. Write a C++ program to create a structure for Employee having their employee ID, names, basic salary, and department. Declare an array of structure to read the details of 5 employees. Write a function that receives this array of structure and display the gross salary of only SALES DEPARTMENT employees on the basis of given formula. for any other department give message server failure.
[HRA= 120% of basic, DA = 30% of basic, TA= 20% of basic, gross salary = basic+ HRA + DA + TA]

5. Write a Menu Driven Program using FUNCTION OVERLOADING to calculate area of any shape
   1. Circle 2. Triangle 3. Rectangle 4. Square

6. Write a program to define the class bank and do following operations
   class bank { private:
   accno integer.
   name character [20]
   acctype character // (' S' for saving /' C' for current ')

```
        balance     float

public:
    bank();          //to initialize accno as 11101, name as " X" , acctype as
                     //' S' , balance as 1000
    deposit(int amt );          //to add amount to current balance
    withdrawal ( int amt );  //to deduct amount from current balance
    balance();          // to display Acctype & only current balance amount
    display();          // to display all details of account holder };
```

WAP to show all operations of bank with a customer.

7. Define a class Tour in C++ with the description given below :

Private Members :

TCode of type string

noA No of Adults of type integer noK No. of Kids of type integer

km Kilometres of type integer TFare of type float

Public Members:

• A constructor to assign initial values as follows: TCode with the word " NULL" and 0 to all integers.

• A function assignFare ( ) which calculates and assigns the value of the data member TFare as

For each Adult	
Fare (Rs)	**For Kilometres**
500	> = 1000
300	< 1000 & > = 500
200	< 500

For each Kid the above Fare will be 50% of the Fare mentioned in the above table.

For example:

If Kilometres is 850, NoofAdults = 2 and No.of Kids = 3

Then TotalFare should be calculated as: NumofAdults * 300 + NoofKids * 150

8. Define a class CARRENTAL in C++ with following description:

Private Members:

CarId of type integer

CarName of type string

CarType of type string

Rent of type float

A Function Assign_Rent( ) to calculate Rent of Car as per the following rules:

CarType	Rent
Small	1000
Van	800
SUV	2500

Public Members:

- A Constructor to initialize CarType as Small , CarId as 101, CarName as " Maruti" , Rent as 800.
- A function GetCar( ) to allow user to enter values for CarId, AboutCar, CarType, and call function Assign_Rent ( ) to calculate the Car Rent.
- A function ShowCar( ) to allow user to view the content of all the data members.

9. Define a class Cricket to display the use of static variable.

```
class Cricket {      private:
                     int runs;          // to tell the total runs achieved by various cricketers
              public:
              Cricket ();          // Constructor to initialize run as zero
              void noball ();      // to add 1 to runs
              void wide();         // to add 1 to runs
              void four ();        // to add 4 to runs
              void six ();         // to add 6 to runs
              void runs (int );    // to add number of runs as parameters to data member runs
              void score() ;       // to display total runs
              };
```

10. WAP using **SINGLE INHERITANCE** for the following classes

```
struct address
{      int hno, st_no;  char colony[15], city[15] ; };
class person
 {          protected:
              char  name[20] ,  address  add ;
               void indata() ;          // to read values for name and add
               void outdata();          // to display name and add   };
            class student : public person
            {  private:
               float tmarks;   char grade;        int rno ;
              public:
               char calgrade();
               void enter();  // to read values for tmarks and rno
               void display ();   // to display rno, name, add , tmarks ,  grade};
```

Create an object of student class to input values for: name, age, tmarks, rollno and display grade as per CBSE 9 Point grading Scale. Use five point grading scale:

percent > = 90 – A
percent > = 80 but < 90 – B
percent > = 70 but < 80 – C
percent > = 60 but < 70 – D
percent < 50 – E

11. Write menu driven program to show following operations on a 1-D array of size N.

1. Find Position of an element in array. [Using BINARY SEARCH]
2. Print largest element of array.
3. Sort the array. [By using either - BUBBLE SORT]
4. Print square of even elements and Cube of odd position Elements.
5. Quit

12. Write a function to accept an array of Names and sort them in descending order using Selection Sort.

13. Write a function to accept an array of struct Mobile having elements name and price of mobile and sort the array in ascending order of price using Insertion Sort.

14. Using classes write menu driven program to show following operations in a 2-d array [n x n]
    1. DOUBLE THE ODD ELEMENTS OF THE MATRIX
    2. DISPLAY SQUARE OF DIAGONAL ELEMENTS
    3. DISPLAY AND FIND THE COLUMN-WISE SUM OF ELEMENTS
    4. PLACE ONE AT CORNER ELEMENTS
    5. PLACE ZERO AT MIDDLE ROW AND MIDDLE COLUMN.
    6. QUIT

15. Write a Menu Driven Program to perform following operations on strings. [Using char pointers]
    A. Print Reverse of string.
    B. Count Vowels in a string.
    C. Convert to UPPERCASE.
    D. EXIT

16. WAP to write some contents in text file and read it to display count of four letter words having **first alphabet T**.

17. WAP to write some contents in text file and read it to display number of words, alphabets, digits, space, vowels, lowercase and uppercase letters.

18. WAP to create a binary file Records.Dat and write objects of the given class till user wishes-

```
class doctor {      private: id int;
                    name character (20),
                    dept  char(20),  integer,
              public:
                    getdept( ); indata();  outdata( );  }
```

Write a function to read this file and create another file called " Cardiac.dat" copying only those records where dept name is " CARDIAC" .

19. DEFINE A CLASS BOOK WITH THE FOLLOWING SPECIFICATIONS :

private members :	
bkno	integer
bktitle	20 characters
price	float(per copy)
public members:	
show()	a function to display all details of book.
input()	to read bkno, bktitle, price
get_price()	to return value of price.

WAP in C++ to create a binary file and write objects in it till user wishes. Read all data from file and

display the details of Books whose price is > 500.

20. Write a program in C++ to illustrate the basic operation of stack to addition in stack (Push), deletion from stack (Pop) and show stack using array.
21. Write a program in C++ to illustrate the basic operation of add , delete an element in queue and show elements of queue using array.
22. Write a menu driven program to show various operations of stack using linked list.
23. Write a menu driven program to show various operations of queue using linked list.