

Computer Science (083)
Practical File for Class XII
Session 2018-19

Index for C++ Programming

Name: _____

Section: _____

Roll No.: _____

SN.	Program Description	Date	Sign.														
1.	Write a C++ program to calculate the multiplication of 2-D matrix.																
2.	Write a C++ program to calculate the summation of a 2-D matrix.																
3.	Write a program to find transpose of a 4x4 matrix.																
4.	Write a program to check whether a number is prime or not.																
5.	Write a C++ Program for Selection Sort of an Array.																
6.	Write a menu driven program to calculate the TSA and volume of a cube, cuboid, or cylinder depending upon user's choice.																
7.	Write a program to input 10 elements in an array and then display these elements in reverse order.																
8.	Write a program to display the report card of any student and also print the tabular report of whole class in ascending order. Use Structure: Roll, Name, Mark1, Mark2, Mark3, and Total.																
9.	Write a program to input elements in a 2D array and then display the sum of main diagonal elements of this array.																
10.	Write a function to check whether a given string is palindrome or not.																
11.	<p>A class STUDENT has 3 data members: Name, Roll Number, Marks of 5 subjects, Stream and member functions to input and display data. It also has a function member to assign stream on the basis of the table given below:</p> <table style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;"><u>Average Marks</u></th> <th style="text-align: left;"><u>Stream</u></th> </tr> </thead> <tbody> <tr> <td>96% or more</td> <td>Computer Science</td> </tr> <tr> <td>91% - 95%</td> <td>Electronics</td> </tr> <tr> <td>86% - 90%</td> <td>Mechanical</td> </tr> <tr> <td>81% - 85%</td> <td>Electrical</td> </tr> <tr> <td>75% - 80%</td> <td>Chemical</td> </tr> <tr> <td>71% - 75%</td> <td>Civil</td> </tr> </tbody> </table> <p>Declare a structure STUDENT and define the member functions. Write a program to define a structure STUDENT and input the marks of n (≤ 20) students and for each student allot the stream. (Don't use any array).</p>	<u>Average Marks</u>	<u>Stream</u>	96% or more	Computer Science	91% - 95%	Electronics	86% - 90%	Mechanical	81% - 85%	Electrical	75% - 80%	Chemical	71% - 75%	Civil		
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71% - 75%	Civil																
12.	<p>Define a class student with the following specifications: Private members of the class: Admission Number - An Integer Name - string of 20 characters Class - Integer Roll Number - Integer</p> <p>Public members of the class: getdata() - To input the data showdata() - To display the data</p> <p>Write a program to define an array of 10 objects of this class, input the data in this array and then display this list.</p>																
13.	Write a C++ program for Insertion Sort of an Array.																
14.	Write a C++ program for Bubble Sort of an Array.																
15.	Write a C++ program to produce third array C by Merging arrays A & B in Ascending order and Descending Order.																
16.	<p>Write a program to input a text file name, read the contents of the file and create a new file named COPY.TXT, which shall contain only those words from the original file which don't start with an uppercase vowel (i.e., with 'A', 'E', 'I', 'O', 'U'). For example, if the original file contains</p> <p style="margin-left: 40px;">The First Step To Getting The Things You Want Out Of Life is This: Decide What You Want. - Ben Stein</p> <p>Then the text file COPY.TXT shall contain</p> <p style="margin-left: 40px;">The First Step To Getting The Things You Want Life is This: Decide What You Want. - Ben Stein</p>																

17.	<p>Write a menu driven program in C++ to perform the following functions on a binary file "BOOK.DAT" containing objects of the following class:</p> <pre> class Book { int BookNo; char Book_name[20]; public: // function to enter book details void enterdetails(); //function to display Book details void showdetails(); //function to return Book_no int Rbook_no() {return Book_no;} //function to return Book_name int Rbook_name() {return Book_name;} }; </pre> <ol style="list-style-type: none"> 1. Append Records 2. Modify a record for a given book no. 3. Delete a record with a given book no. 4. Search for a record with a given Book name 5. Display a sorted list of records (sort on Book No.) 6. Display a sorted list of records (Sort on Book Name) 		
18.	<p>Write a menu driven program which allows the user to perform the following operations on a one dimensional array: Insertion, deletion, searching, sorting (bubble, selection, insertion),display.</p>		
19.	<p>Write a function in C++ which accepts an integer array and its size as arguments/parameters and exchanges the values of first half side elements with the second half side elements of the array. Example: If an array of eight elements has initial contents as 2,4,1,6,7,9,23,10 The function should rearrange the array as 7,9,23,10,2,4,1,6</p>		
20.	<p>Write a function in C++ to find and display the sum of each row and each column of a two-dimensional array of type float. Use the array and its size as parameters with float as its return type.</p>		
21.	<p>Write a function in C++ which accepts an integer array and its size as arguments/parameters and assigns the elements into a two-dimensional array of integers in the following format: If the array is 1, 2, 3, 4, 5, 6 If the array is 1, 2, 3 The resultant 2-D array is:</p> <pre> 1 2 3 4 5 6 1 2 3 4 5 0 1 2 3 4 0 0 1 2 3 0 0 0 1 2 0 0 0 0 1 0 0 0 0 0 </pre> <p>The resultant 2-D array is:</p> <pre> 1 2 3 1 2 0 1 0 0 </pre>		
22.	<p>Write a menu driven program which allows the user to perform the following operations on a stack (Array implementation):</p> <ol style="list-style-type: none"> 1) Push 2) Pop 3) Display 		
23.	<p>Write a menu driven program which allows the user to perform the following operations on a queue (Array implementation):</p> <ol style="list-style-type: none"> 1) Insert 2) Delete 3) Display 		
24.	<p>Write a menu driven program which allows the user to perform the following operations on a stack (Linked implementation):</p> <ol style="list-style-type: none"> 1) Push 2) Pop 3) Display 		
25.	<p>Write a menu driven program which allows the user to perform the following functions on a queue (Linked implementation):</p> <ol style="list-style-type: none"> 1) Insert 2) Delete 3) Display 		

Kendriya Vidyalaya No-1 Armapur Kanpur

Subject-Computer Science

SQL PRACTICAL FILE FOR THE SESSION 2018-19

Index for Database and SQL

Name : _____ Section : _____ Roll No. : _____

RNo.	Descriptions/Topics		Date	Sign.
1	INTRODUCTION TO DATABASE	ABOUT DATA, DATABASE		
2	ABOUT KEYS	PRIMARY,FOREIGN,CANDIDATE,ALTERNATE		
3	ABOUT SQL STATEMENTS	DDL,DML STATEMENTS		
4	DATABASE CREATION, DELETION			
5	SQL COMMANDS FOR QUESTION-1			
6	SQL COMMANDS FOR QUESTION-2			
7	SQL COMMANDS FOR QUESTION-3			
8	K-MAP FOR SOP WITH CIRCUIT DIAGRAM			
9	K-MAP FOR POS WITH CIRCUIT DIAGRAM			

Question No-1— Write SQL commands for the following on the basis of the given table CLUB.

TABLE-CLUB

COACH_ID	COACHNAME	AGE	SPORTS	DATEOFAPP	PAY	SEX
1	KUKREJA	35	KARATE	27/03/1996	1000	M
2	RAVINA	34	KARATE	20/01/1998	1200	F
3	KARAN	34	SQUASH	19/02/1998	2000	M
4	TARUN	33	BASKETBALL	01/01/1998	1500	M
5	ZUBIN	36	SWIMMING	12/01/1998	750	M
6	KETAKI	36	SWIMMING	24/02/1998	800	F
7	ANKITA	39	SQUASH	20/02/1998	2200	F
8	ZAREEN	37	KARATE	22/02/1998	1100	F
9	KUSH	41	SWIMMING	13/01/1998	900	M
10	SHAILYA	37	BASKETBALL	19/02/1998	1700	M

- a) To Show all information about the swimming coaches in the club.
- b) To list names of all coaches with their date of appointment (DATEOFAPP) in descending order.
- c) To display a report, showing coach name, pay, age and bonus (15% of pay) for all the coaches.
- d) Give the output of the following SQL statements:
 - i. SELECT LCASE(SPORTS) FROM CLUB;
 - ii. SELECT MOD(AGE,5) FROM CLUB WHERE SEX='F';
 - iii. SELECT POWER(3,2) FROM CLUB WHERE SPORTS='KARATE';
 - iv. SELECT SubStr(COACHNAME,1,2) FROM CLUB WHERE DATEOFAPP>'31/01/1998';
- e) Give the output of the following SQL statements:
 - i. SELECT COUNT (DISTINCT SPORTS) FROM CLUB;
 - v. SELECT MIN(AGE) FROM CLUB WHERE SEX='F';
 - vi. SELECT AVG(PAY) FROM CLUB WHERE SPORTS='KARATE';
 - vii. SELECT SUM(PAY) FROM CLUB WHERE DATEOFAPP>'31/01/1998';

Question No-2— Write SQL commands for the following on the basis of the given table STUDENT.

TABLE-STUDENT

No.	Name	Stipend	Stream	AvgMark	Grade	Class
1	KARAN	400.00	Medical	78.5	B	12B
2	DIVAKAR	450.00	Commerce	89.2	A	11C
3	DIVYA	300.00	Commerce	68.6	C	12C
4	ARUN	350.00	Humanities	73.1	B	12C
5	SABINA	500.00	Nonmedical	90.6	A	11A
6	JOHN	400.00	Medical	75.4	B	12B
7	ROBERT	250.00	Humanities	64.4	C	11A
8	RUBINA	450.00	Nonmedical	88.5	A	12A
9	VIKAS	500.00	Nonmedical	92.0	A	12A
10	MOHAN	300.00	Commerce	67.5	C	12C

- a) Select the entire Nonmedical stream from STUDENT.
- b) List the names of those students who are in class 12 sorted by Stipend.
- c) List all students sorted by AvgMark in descending order.
- d) To display a report, listing Name, Stipend, Stream and amount of Stipend received in a year assuming that the Stipend is paid every month.
- e) Give the output of the following SQL statements:
 - i. SELECT TRUNCATE(AvgMark,0) FROM STUDENT WHERE AvgMark<75;
 - ii. SELECT ROUND(AvgMark) FROM STUDENT WHERE Grade='B';
 - iii. SELECT CONCAT(Name, Stream) FROM STUDENT WHERE Class='12A';
 - iv. SELECT RIGHT(Stream,2) FROM STUDENT ;
- f) Give the output of the following SQL statements:
 - i. SELECT MIN(AvgMark) FROM STUDENT WHERE AvgMark<75;
 - ii. SELECT SUM(Stipend) FROM STUDENT WHERE Grade='B';
 - iii. SELECT AVG(Stipend) FROM STUDENT WHERE Class='12A';
 - iv. SELECT COUNT(DISTINCT Name) FROM STUDENT ;

Question No-3— consider the following tables. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to (viii).

Table-SENDER

SenderID	SenderName	SenderAddress	SenderCity
ND01	R Jain	2,ABC Appts	New Delhi
MU02	H Sinha	12, Newtown	Mumbai
MU15	S Jha	27/A,Park Street	Mumbai
ND50	T Prasad	122-K,SDA	New Delhi

Table-RECIPIENT

RecID	SenderID	RecName	RecAddress	RecCity
KO05	ND01	R Bajpayee	5, Central Avenue	Kolkata
MU19	ND01	H Singh	2A, Andheri East	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminus	Mumbai
ND08	MU02	S Mahajan	116, A Vihar	New Delhi
ND48	ND50	S Tripathi	13, B1 D, Mayur Vihar	New Delhi

- i. To display the names of all Senders from Mumbai.
- ii. To display the RecID, SenderName, SenderAddress, RecName, RecAddress for every Recipient.
- iii. To display Recipient details in ascending order of the RecName.
- iv. To display number of Recipients from each city.
- v. `SELECT DISTINCT SenderCity from SENDER;`
- vi. `SELECT A.SenderName,B.RecName
FROM SENDER A,Recipient B
WHERE A.SenderID=B.SenderID AND B.RecCity='Mumbai';`
- vii. `SELECT RecName,RecAddress FROM RECIPIENT WHERE RecCity NOT
IN ('Mumbai','Kolkata');`
- viii. `SELECT RecID,RecName
FROM RECIPIENT
WHERE SenderID='M02' OR SenderID='ND50';`