Roll No.: ☐☐☐☐☐☐☐☐☐☐ Date: ☐☐☐☐☐☐

NORTHWEST ACCREDITATION COMMISSION, USA
SR. SECONDARY/12TH
2017-2018

Subject- COMPUTER SCIENCE (THEORY) Question Paper No. : | C | S | 2 | 7 |

Subject Code : CS1214 Question Paper Code: | C | T | 0 | 9 |

Total Time: 03.00 Hours.	Total Marks: 70

GENERAL INSTRUCTIONS

1. OPENING AND CHECKING OF THE QUESTION-BOOKLET

Break open the seal of the Question-Booklet only when the announcement is made by the Invigilator. After breaking the seal and before attempting the questions, student should immediately check for:

a) The number of the printed page in the Question-Booklet is the same as mentioned on the cover page of the Booklet and

b) Any printing error in the Booklet pages, if any.

Any discrepancy or error should be brought to the notice of the Invigilator who will then replace the Booklet. No additional time will be given for this.

2. No student, without the permission of the Superintendent or the Invigilator concerned, is to leave his/ her seat or the Examination Room.

3. FILLING UP THE REQUIRED INFORMATION ON QUESTION-BOOKLET AND ANSWER SHEET

After breaking open the seal and checking the Booklet, student should:

a) Fill up the **Question Paper No.** and **Question Paper Code** (mentioned on the cover of Question-Booklet) in the space provided on the First Answer Sheet.

b) Fill up his/her Roll Number on the First Answer Sheet and on each Supplementary Answer Sheet, if taken.

c) Student should mention the total number of **Supplementary Answer Sheet**, if taken, in the space provided on the First Answer Sheet and also fill up the Serial Number mentioned on each **Supplementary Answer Sheet** along with his/her Roll Number in the register maintained by the Invigilator. Student must tie all the Answer Sheets with the thread provided by the Invigilator.

4. INSTRUCTIONS ABOUT QUESTION PAPER

This Question Paper is divided into three Sections – A, B and C. All Sections are compulsory. Attempt all Sections as per instructions.

a) **Section A question No. 1 to 4 are very short questions carrying 3 marks each in approximately 20-30 words.**

b) **Section B question No. 5 to 11 are short questions carrying 4 marks each in approximately 30-50 words.**

c) **Section C question No. 12 to 16 are long questions carrying 6 marks each in approximately 80-120 words.**

5. Student found in possession of Cellular Phone / Mobile Phone / Pager or any other Communication Device and/or any Book/Note whether using or not, will be liable to be debarred for taking examination(s) either permanently or for specified period or/and dealt with as per law or/and ordinance of the School/SERI according to the nature of offence, or/and he/she may be proceeded against and shall be liable for prosecution under the relevant provision of the Statutory Law.

THE ANSWER SHEET IS TO BE RETURNED ON COMPLETION OF THE TEST

SECTION A

Total number of questions: 4	Marks allocated to each question: 3	Total marks: 12

Question 1. What is the difference between automatic type conversion and type casting? Also, give a suitable C++ code to illustrate both.

Question 2. Name the header file to which the following belong:
(i) gets( )
(ii) open( )

Question 3. Rewrite the following program after removing the syntactical error(s), if any Underline each correction,
```
#include <iostream.h>
void main( )
{    struct TV
{    char Manu_name[20];
 char Tv_Type;
 int Price = 17000;
}    New Tv;
  gets(Manu_name);
  gets(Tv_Type);
}
```

Question 4. Name the header file(s) that shall be needed for successful compilation of the following C++ code
```
void main ( )
{
char String [20];
gets (String);
strcat (String, "CBSE");
puts (String);
}
```

SECTION B

Total number of questions: 7	Marks allocated to each question: 4	Total marks: 28

Question 5. An array A[20][30] is stored along the row in the memory with each element requiring 4 bytes of storage. If the base address of array A is 32000, find out the location of A[15][10]. Also, find the total number of elements present in this array.

Question 6. Assuming the class TOYS as declared below, write a function in C++ to read the objects of TOYS from binary file TOYS.DAT and display those details of those TOYS, which are meant for children of Age Range ''5 to 8''.

```
class TOYS
{
nt ToyCode;
char ToyName[10];
char AgeRange;
public:
void Enter()
{
cin>>ToyCode;
gets(ToyName);
gets(AgeRange);
}
void Display()
{
cout<<ToyCode<<  :  <<ToyName<<endl;
cout<<AgeRange<<endl;
}
char* WhatAge(){return AgeRange;}
};
```

Question 7. Write a Get1From2 ( ) function in C++ to transfer the content from two arrays FIRST[ ] and SECOND[ ] to array ALL[ ]. The even places (0, 2, 4,...) of array ALL[ ] should get the content from the array FIRST[ ] and odd places (1, 3, 5,) of the array ALL[] should get the content from the array SECOND[ ].

Example:
If the FIRST[ ] array contains
30, 60, 90
And the SECOND[ ] array contains
10, 50, 80
The ALL[ ] array should contain
30, 10, 60, 50, 90, 80

Question 8. Reduce the following Boolean Expression using K-Map:
$F(P, Q, R, S) = \Sigma (0,1,2,4,5,6,8, 12)$

Question 9. Given a binary file SPORTS.DAT, containing records of the following structure type:

```
struct Sports
{
char Event[20];
char Participant[10][30];
};
```

Write a function in C++ that would read contents from the file SPORTS.DAT and creates a file named ATHLETIC.DAT copying only those records from SPORTS.DAT where the event name is "Athletics".

Question 10. Write a function in C++ to perform Push operation on a dynamically allocated stack containing real number.

Question 11. Write a python function generateFibo(n) where n is the limit using a generator function Fibonacci (max) where max is the limit n that produces Fibonacci series.

SECTION C

Total number of questions: 5	Marks allocated to each question: 6	Total marks: 30

Question 12. Write a function in C++ to delete a node containing customer's information, from a dynamically allocated Queue of Customers implemented with the help of the following structure:

```
struct Customer
{
int CNo;
char CName[20];
Customer *Link;
};
```

Question 13. Write a function in C++ to perform Insert: operation on a dynamically allocated Queue containing Passenger details as given in the following definition of NODE.

```
struct NODE
{
long Pno; //passenger Number
char Pname[20] ; //passenger Name
NODE *Link.;
};
```

Question 14. Define a class Candidate in C++ with following description:

Private Members
- A data member RNo (Registration Number) of type long
- A data member Name of type string
- A data member Score of type float
- A data member Remarks of type string
- A member function AssignRem( ) to assign Remarks as per the Score obtained by a candidate. Score range and the respective Remarks are shown as follows:

Score	Remarks
>=50	Selected
less than 50	Not selected

Public Members
- A function ENTER ( ) to allow user to enter values for RNo, Name, Score & call function AssignRem( ) to assign the remarks.
- A function DISPLAY ( ) to allow user to view the content of all the data members.

Question 15. Write the SQL queries (1 to 4)
- (a) To display IName and Price of all the Items in ascending order of their Price.
- (b) To display SNo and SName of all Stores located in CP
- (c) To display Minimum and Maximum Price of each IName from the tabie Item.
- (d) To display lName, Price of all items and their respective SName where they are available.

Question 16. Define a class named ADMISSION in C++ with the following descriptions:

Private members:
AD_NO integer (Ranges 10 - 2000)
NAME Array of characters (String)
CLASS Character
FEES Float

Public Members:
- Function Read_Data ( ) to read an object of ADMISSION type
- Function Display() to display the details of an object
- Function Draw-Nos ( ) to choose 2 students randomly.
And display the details. Use random function to generate admission nos. to match with AD_NO.

END OF THE QUESTION PAPER