

**COMPUTER SCIENCE**  
**(330)**  
**TUTOR MARKED ASSIGNMENT**

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Max. Marks : 20

- Note:**
- (i) All questions are compulsory. The marks allotted for each question are given at same place.
  - (ii) Write your name, enrollment number, AI name and subject on the top of the first page of the answer sheet.

1. Answer any one of the following questions in about 40 to 60 words. 2

(a) Arrange the following operations according to a data processing cycle and write the name of the operation. 1 + 1

- (i) A person inputs data of 50 students containing their name, age and class.
- (ii) Students' information is printed on a paper.
- (iii) Students' information is copied on a CD.
- (iv) Students' data is processed to find the no. of students of same age. (See Lesson- 2)

(b) (i) Define the term Record

(ii) Following are two types of records. Identify fixed length and variable length records among these- 1

**(A)**

Record A	Record B	Record C	Record
20 bytes	30 bytes	28 bytes	22 bytes

$\frac{1}{2}$

100 bytes

**(B)**

Record A	Record B	Record C	Record D
30 bytes	30 bytes	30 bytes	30 bytes

$\frac{1}{2}$

120 bytes

(See Lesson- 2)

2. Answer any one of the following questions in about 40 to 60 words. 2

(a) (i) What is the full form of LAN and WAN ? 1

Computer network in two banks situated in two different cities about 100km apart, are connected through telephone wires, identify the type of network?  $\frac{1}{2}$

(ii) Identify the type of network topology used in the following:  $\frac{1}{2}$

In a LAN connection, seven computers are connected to a central computer. Computer No. 2 wants to send a message to computer no. 6, but the message, instead of going directly, goes via the central computer only. (See Lesson- 5)

- (b) Write the name of the service used by the person in the following situation:
- (i) Ram plans to go on a holiday trip. He wants to book train tickets, hotels etc. through Internet and makes payment through credit cards. 1
  - (ii) A company General Manager wants to conduct meeting with his junior staff members who are located in different branches. These staff members are not required to be present physically but at the same time they can be able to see each other. 1  
(See Lesson- 5)
3. Answer any one out of the following questions in about 40 to 60 words. 2
- (a) Write a function for evaluating the area of a rectangle having sides a and b. Both sides and the area should be taken as float values. 2
  - (b) Write a program which accepts 10 integers in an array and then arrange the array in ascending order. 2  
(See Lesson- 10, 11)
4. Answer any one of out of the following questions in about 100 to 150 words. 4
- (a) (i) Name any four input and four output devices. 2
  - (ii) Write the name of the input device you will use, if you want to upload your photograph in the computer. 1
  - (iii) Write the name of the device used in the Banks to read the special characters printed with magnetic material on the cheques. 1  
(See Lesson- 1)
- (b) (i) What will be the value of counter and num after the execution of the following program. 2
- ```
void main ( )
{
    int counter = 1 ;
    int digit = 0, num = 2;
    while (digit <= 10)
    {
        ++ counter;
        num ++;
        ++ digit;
        cout << counter;
        cout << num;
    }
}
```
- (ii) what will be the output of the following C++ code? 2
- ```
#include <stdio.h>
#include <iostream.h>
```

```

void main ( )
{
    char A [100];
    char B [160];
    cout << "Input string ";
    gets (A);
    puts (A);
    tolower (A);
    cout << "Input new string" ;
    gets (B);
    strcpy (A,B);
    cout << "Final String is "<<A ;
}

```

(See Lesson- 10)

5. Answer any one out of the following questions in about 100 to 150 words.

4

(a) class Book

```

{
    char book_name[20], writer [20];
    int no_of_pages;
    public:
        void read();
        void show();
};
class Tbook: private Book
{
    int no_of_lessons, no_of_exercises;
    protected:
    int standard;
    public:
    void readtbook();
    void showtbook();
};
class sciencebook: public tbook
{
    char topic[20];
    public:

```

```

void readsciencebook();
void showsciencebook();
};

```

- (i) Name the data members and member functions which can be accessed from the member function of class sciencebook. 2
- (ii) Name the member functions which can be accessed by an object of (a) class tbook (b) class sciencebook 2  
(See Lesson- 14)
- (b) Write a C++ program as per the following instructions:
- (i) Write a C++ code which reads the contents of a text file "first\_file.txt" 1
- (ii) Write a function named vowel\_words() which will segregate the words starting with vowels from the "first\_file.txt" 2
- (iii) Write a C++ code which writes the resultant words to the output file, "second\_file.txt".1  
Example: Content of first\_file - "I am going to buy an umbrella"  
Output in second\_file.txt - I am an umbrella (See Lesson- 16)
6. Prepare any one project out of the given below: 6
- (a) A class "Student" has three data members: student\_name, enrolment\_no, marks of 5 subjects and member function to assign streams on the basis of the criteria given below: 6
- | Average Marks | Stream           |
|---------------|------------------|
| >90%          | Computer Science |
| > 80 - 90%    | Science          |
| >75 - 80%     | Commerce         |
| >70 - 75%     | Arts             |
| Below 70%     | Vocational       |
- Write a C++ program to calculate average marks of each student and display student name, enrolment no, and their stream. (See Lesson- 13)
- (b) Consider A, B, C as three arrays of size m,n and m + n respectively. Array A is stored in ascending order where as array B is stored in descending order. Write a C++ program to produce a third array C, containing all the data of arrays A and B and arranged in descending order. Display the data of array C only. 6  
(See Lesson- 11)