



School of Electrical & Electronics Engineering

Semester 1, 2013

Program : TDEEL/TDEEN (stage 3)

Unit code : EEE 505

Unit Name : Computer system

Date:

Time:

Room:

Total Marks : 100

Instructions to students

1. You are allowed an extra ten (10) minutes of reading time during which you are **NOT** allowed to write.
2. Write your answers in the answer booklet provided .
3. Write your student ID number at the top of each attached sheet.
4. You will be **NOT** using calculators/computers, programmable devices.
5. Clearly number the questions in your answer paper in their correct sequence and write legibly. Show all working.
6. Attach any extra sheets used to your answer booklet securely with the string provided.
7. There are **THREE** Sections in this Question Paper. **Answer all the Sections.**
8. Assume necessary conditions wherever applicable.

Section A : Multiple Choice

(1X15=15 marks)

1. In the following C++ statement

```
int *p;
```

- A) p is an variable B) p is not a variable C) p is an pointer-variable D)None

2. The data type which is assigned value either true or false is

- A) fool B) bool C) tool D) cool

3. `int z=3%5;` what is stored in z?

- A) 5 B) 2 C) 1 D) 3

4. What does IDE stands for ?

- A) International Development Environment. B) International Development Engineering
C) Integrated Demonstration Environment A) Integrated Development Environment

5. What will be stored in z from below C++ statement ?

```
int x=10,z;
```

```
z= ++x + x--;
```

- A) 22 B) 21 C) 10 D) 11

6. An operation between a `float` and `int` results in _____

- A) int B) char C) bool D) float

7. Memory inside the processor is called _____

- A) L1 cache B) L2/L3 cache C) Hard disk D) magnetic tape

8. Which of the following statements is true ?

- A) DDR SDRAM is improved version of SDRAM, runs twice as fast as SDRAM
B) DDR2 SDRAM-Faster & uses less power compared to DDR
C) DRR3 SDRAM-Faster & uses less power compared to DDR2
D) All of the above

9. A Hard Disk is laid out in a series of concentric circles called _____

- A) Cylinders B) Sector C) Tracks D) None

10. _____ is an artificial and informal language that helps you develop algorithms without having to worry about the strict details of C++ language syntax also called as "fake" code.

- A) Code B) Decode C) Encode D) Pseudo code

11. A _____ is a group of C++ statements that is executed when it is called from some point of the program.

- A) pointer B) function C) arrays D) preprocessor directive

12. The last element of the one-dimensional array **a** of size 60 is denoted by

- A) **a(59)** B) **a[60]** C) **a{59}** D) **a[59]**

13. ALU is called as

- A) Algorithm & Logic Unit B) Arithmetic & Logic Unit
C) Algorithm & Learning Unit D) Arithmetic & Learning Unit

14. What will be the output of the following program fragment ?

```
int main()
{
    int i=0,j=0,m,n;
    m=i && !j;
    n= !i || !j;
    cout<<m-1;
    cout<<n+1;
}
```

- (a) 00 (b) 11 (c) 10 (d) 02

15. If $\text{int } x = 2 * 5 / 2 + (!0) - \text{pow}(4, 2)$, then the value of x is ?

- (a) -10 (b) -16 (c) -14 (d) -12

Section B : Short answers

(7X5=35 marks)

1. Fill up the blanks (1x5=5 marks)

- A) 1 GB is made up of _____ MB
- B) `int z=1/1;` what is stored in z?
- C) ASCII stands for _____
- D) The operator `&` is called _____
- E) Internal communication between different components of the computer system is via _____

2. True or False (1x5=5 marks)

- A) ROM stands for Random only memory.
- B) There are 265 distinct ASCII characters.
- C) Pointers are used in memory management.
- D) The C++ statement `return 0;` indicates the program terminated successfully.
- E) `setw()` is an example of in-built function.

3. How many times BULA is printed from the below C++ program fragment ? (5 marks)

```
int i= 4,j;
while(i>0)
{
    for( j=2;j>0;j--)
    {
        cout<<"Bula"<<endl;
        j++;
        break;
    }
    i--;
}
```

4. Write a C++ program to find the armstrong numbers in the range 0-999 (5 marks)

5. What will be the output of the following C++ program fragment ? (5 marks)

```
int x= -20, y= -40, z=45;
if(x>y&&x>z)
    { cout<<"X is big"; }
else
    {
        if(y>x&&y>z)
            { cout<<"Y is big"; }
        else
            {
                if(z>x&&z>y)
                    { cout<<"Z is big";}
                else
                    { cout<<"C++ is big"; }
            }
    }
}
```

6. What will be the different values of y in following program fragment ? (5 marks)

```
int i, y=1, j=2;
for(i=-2; i<2; i++)
{
    while(j>-2)
    {
        y=2*(i-1)-y- j;
        j--;
        cout<<y<<"end";
        break;
    }
}
```

7. (i) What will be stored in x? (3 marks)

```
int x=( (1?0:-1) ? (5= =10?100:200) : ( !0?500:600) ); cout<<x;
```

(ii) Draw a flow chart to calculate the electrical power. (2 Marks)

Section C : Each question carries 10 marks

(5X10=50 marks)

1. Write a C++ program to find the roots of a quadratic equation using **nested if-else** statement.

2. Write a C++ program to the find the sum series :

$$X = (1/1!) + (2/2!) + (3/3!) - (4/4!) - (5/5!) - (6/6!)$$

3. Write a C++ program to find the prime number in the range 1-200 using **nested while** loop.

4. Write a C++ program to subtract two 2x2 matrices using two-dimensional array.

5. Write a C++ program to define a **user-defined function** to multiply numbers from 1 to 10 using **one-dimensional array** using **parameter passing**.