

## Model Answer

**Question 1:** Complete the following sentences (30 Marks)

1.  $(11011111100)_2 = (\underline{6774})_8 = (\text{DFC})_{16}$
2. There are four basic types of modems: external, internal, PC Card, and wireless.
3. The five basic parts of information system are people, procedures, software, hardware, and data.
4. The electronic linking of geographically dispersed devices is called Networking.
5. Data is a raw facts meaningless however, Information is a processed facts meaningful.
6.  $(111010101)_2 = (\underline{725})_8 = (\underline{1D5})_{16}$
7. Physical connections use a solid medium to connect sending and receiving devices like Telephone lines (twisted pair), coaxial cable and fiber-optic cable.
8. CPU has a three basic functions fetch , decode, and execute.
9. Speed, capacity, and flexibility determine the power of microcomputers.
10.  $(76)_{10} = (\underline{1001100})_2 = (\underline{114})_8 = (\underline{4C})_{16}$ .
11. System bus is a bus that connects the CPU to memory on the system board.
12. Control Unit monitors the execution of all instructions and the transfer of all information.

**Question 2:** Choose the right definition for each item (6Marks)

A	System Unit	<u>C</u>	communications (voice and data) at a distance.
B	Wireless Revolution	<u>D</u>	Is an example of basic application
C	Telecommunications	<u>F</u>	Is a set of programs that enables user to interact with the hardware.
D	Browser	<u>B</u>	promises to allow a wide variety of nearby devices to communicate with one another without any physical connection.
E	Modem	<u>A</u>	Is a container that houses most of electronic components of the computer system
F	Software	<u>E</u>	a device that enables digital microcomputers to communicate across analog telephone lines.

**Question 3:** Answer the following questions

(14 Marks)

1. Compare between System Software and Application Software.

**System Software** A collection of programs not a single program, that enables the application software to interact with the hardware **Examples** Operating systems(Windows XP, Linux), Utilities(Disk Defragmenter ) and Device drivers.

**Application Software** Known as "End-user" software.

2. Describe the different types of computers.

- A. Super Computer.
- B. Mainframe.
- C. Mini Computer.
- D. MicroComputer.

3. Compare between Primary storage and Secondary Storage.

**Data storage** is the basic functionality of a computer which is divided into **primary** and **secondary** storage.

**Primary storage** refers to the main storage of the computer or main memory which is the random access memory or RAM.

**Secondary storage**, on the other hand, refers to the external storage devices used to store data on a long-term basis.

4. Define Connectivity, Computer Communication and Communication system.

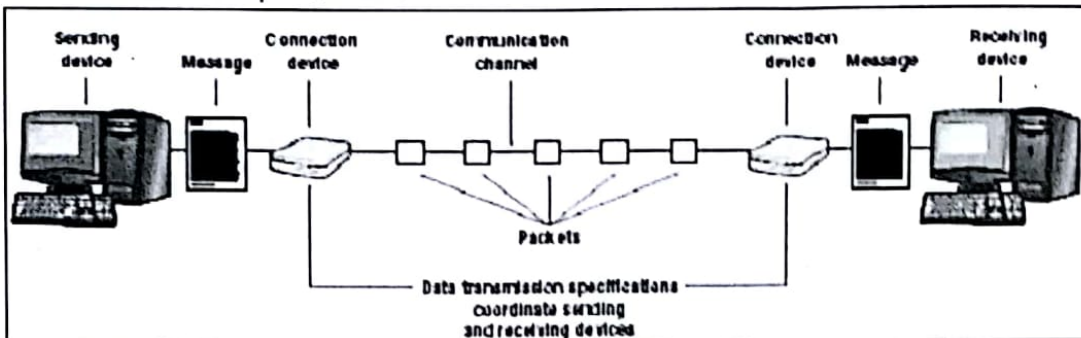
**Connectivity** is the capability of your microcomputer to share information with other computers.

**Computer communications** is the process of sharing data, programs, and information between two or more computers.

**Communication systems** are the electronic systems that transmit data over communications lines from one location to another.

5. List the four elements of the communication system. Indicate your answer with draw.

- A. Sending and receiving devices.
- B. Communication channel.
- C. Connection devices.
- D. Data transmission specifications



6. Explain the differences between processor memory buses and I/O buses.

**Processor-memory buses:** are short, high-speed buses that are closely matched to the memory system on the machine to maximize the bandwidth (transfer of data) and are usually very design specific.

**I/O buses:** Are longer than processor-memory buses and allow for many types of devices with varying bandwidths. These buses are compatible with many different architectures.

7. What are the factors of bus speed?

The speed of the bus is affected by its length as well as by the number of devices sharing it.

**Question 4** Write C# code to prompt a user to input his/her name and then the output will be shown as an example: Hello John! (3 Marks)

```
string name = textBox1.Text;
MessageBox.Show("Hello " + name + " !");
```

**Question 5** Write a C# program to find the output of the arithmetic operations (+, -, \*, /, %)

(7 Marks)

```
private void btn_Sum_Click(object sender, EventArgs e)
{
    int x = int.Parse(txt_FNum.Text);
    int y = int.Parse(txt_SNum.Text);
    MessageBox.Show(x + y + "");
}
private void btn_Subtract_Click(object sender, EventArgs e)
{
    int x = int.Parse(txt_FNum.Text);
    int y = int.Parse(txt_SNum.Text);
    MessageBox.Show(x - y + "");
}
private void btn_Multiply_Click(object sender, EventArgs e)
{
    int x = int.Parse(txt_FNum.Text);
    int y = int.Parse(txt_SNum.Text);
    MessageBox.Show(x * y + "");
}
private void btn_divide_Click(object sender, EventArgs e)
{
    int x = int.Parse(txt_FNum.Text);
    int y = int.Parse(txt_SNum.Text);
    if(y==0)
        MessageBox.Show("Error");
    else
        MessageBox.Show(x / y + "");
}
private void btn_Mod_Click(object sender, EventArgs e)
{
    int x = int.Parse(txt_FNum.Text);
    int y = int.Parse(txt_SNum.Text);
    if(y==0)
        MessageBox.Show("Error");
    else
        MessageBox.Show(x % y + "");
}
```

The screenshot shows a window titled "Form1" with a standard Windows title bar (minimize, maximize, close buttons). Inside the window, there are two text boxes. The first is labeled "First Number" and the second is labeled "Second Number". Below these text boxes, there are five buttons arranged in two rows. The top row contains "Sum", "Subtract", and "Multiply". The bottom row contains "Divide" and "Mod".