

# Victoria University of Bangladesh

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**Batch: 46<sup>th</sup>**

**Course Title: Computer fundamentals & programming techniques**

**Course code: CSE 108**

**Program: BBA**

**Submitted to: MD Shahin Khan Shanto**

Ans. to the Q No - 1

$$(a) (AB0189.765)_{16}$$

$$= \begin{array}{cccccccccc} A & B & 0 & 1 & 8 & 9 & 7 & 6 & 5 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ = 1010 & 1011 & 0000 & 0001 & 1000 & 1001 & 0111 & 0110 & 0101 \end{array}$$

$$= \begin{array}{cccccccccc} \frac{101}{5} & \frac{010}{2} & \frac{110}{6} & \frac{000}{0} & \frac{000}{0} & \frac{110}{6} & \frac{001}{1} & \frac{001}{1} & \frac{011}{3} \\ & & & & & & & \frac{101}{5} & \frac{100}{4} & \frac{101}{5} \end{array}$$

$$\therefore = (52600611.3545)_8$$

Ans. to the Q. No-1

(b)

$(10234.675)_8$

=	1	0	2	3	4.	6	7	5
	<del>001</del>	↓	↓	↓	↓	↓	↓	↓
=	001	000	010	011	100	110	111	101
=	0001	0000	1001	1100	.1101	1110	1000	
	↓	↓	↓	↓	↓	↓	↓	
	0	0	9	c	.d	e	8	
=	$(109c . DE8)_{16}$							

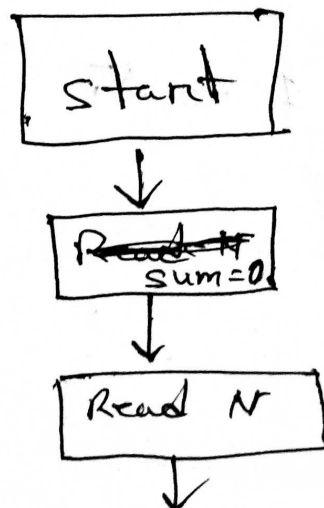
Ans. to the Q. No-4

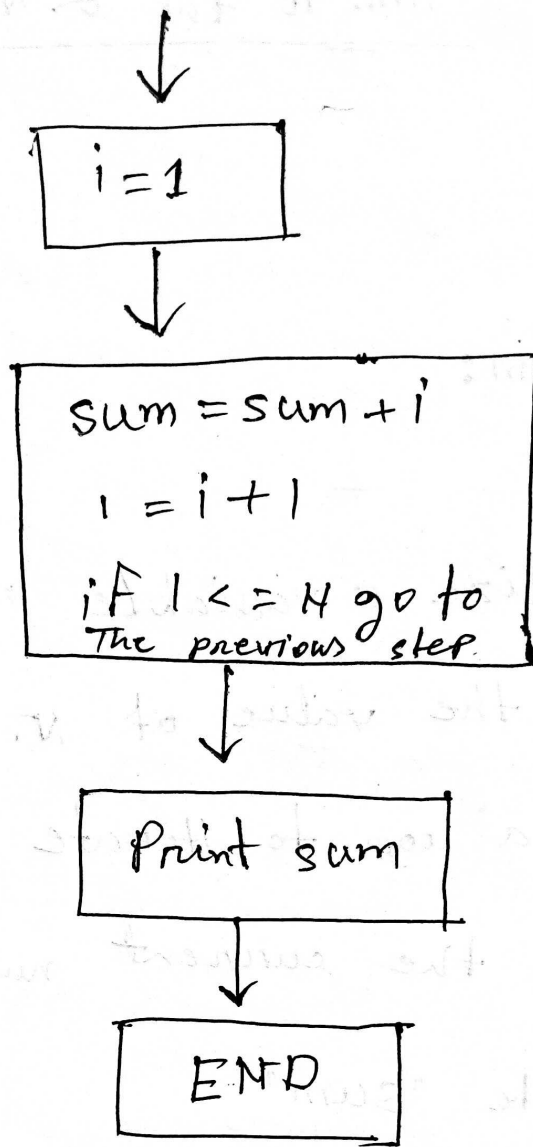
(a)

Algorithm:

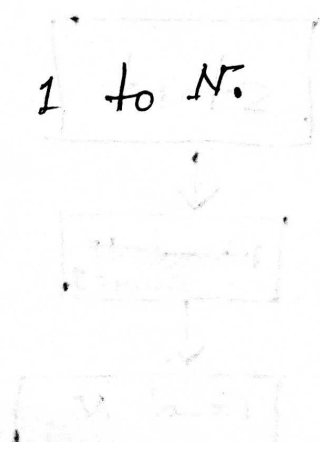
1. Start
2. Initialize a variable "sum" to zero.
3. Read the value of N.
4. Use a loop to iterate from 1 to N:
  - a. Add the current number to the variable "sum"
5. Print the value of "sum"

Flowchart:





The above algorithm and flowchart will calculate the sum of numbers from 1 to N.



Ans. to Q. No - 4

(b)

Here's the C-program for finding the summation of the series  $1 + 2 + 3 + \dots + N$ :-

ccc

```
#include <stdio.h>
```

```
int main ( ) {
```

```
    int n, sum = 0;
```

```
    printf ("Enter a posi positive integer:");
```

```
    scanf ("%d", &n);
```

```
    for (int i = 1; i <= n; i++) {
```

```
        sum + = i;
```

```
    }
```

```
    printf ("The sum of 1 to %d",
```

```
           n, sum);
```

```
    return 0;
```

```
    }
```

```
    ...
```

3)

n,

}

Ans. to the Q. N-(2)

```

(a) #include <stdio.h>
int main ( )
{
int num1, num2, num3;
printf ("Enter three different numbers: ");
scanf ("%i %i %i", &num1, &num2, &num3);
if (num1 >= num2 & num1 >= num3)
{
printf ("\n %d is the largest number\n", num1);
}
if (num2 >= num1 & num2 >= num3)
{
printf ("\n %d is the largest number,\n", num2);
}
if (num3 >= num1 & num3 >= num2)
{

```

```
printf("%d is the largest number.  
%d", num3);
```

```
}
```

```
return 0;
```

```
}
```

(b)

Algorithm to find greatest number of three given numbers:

1. ASK the user to enter three integer values.
2. Read the three integer values in num1, num2 and num3 (integer variables)
3. Check if num1 is greater than
4. If true ~~then~~ then check if num3 as the greatest number.  
if false, then print 'num1' as greatest number.  
if true



8

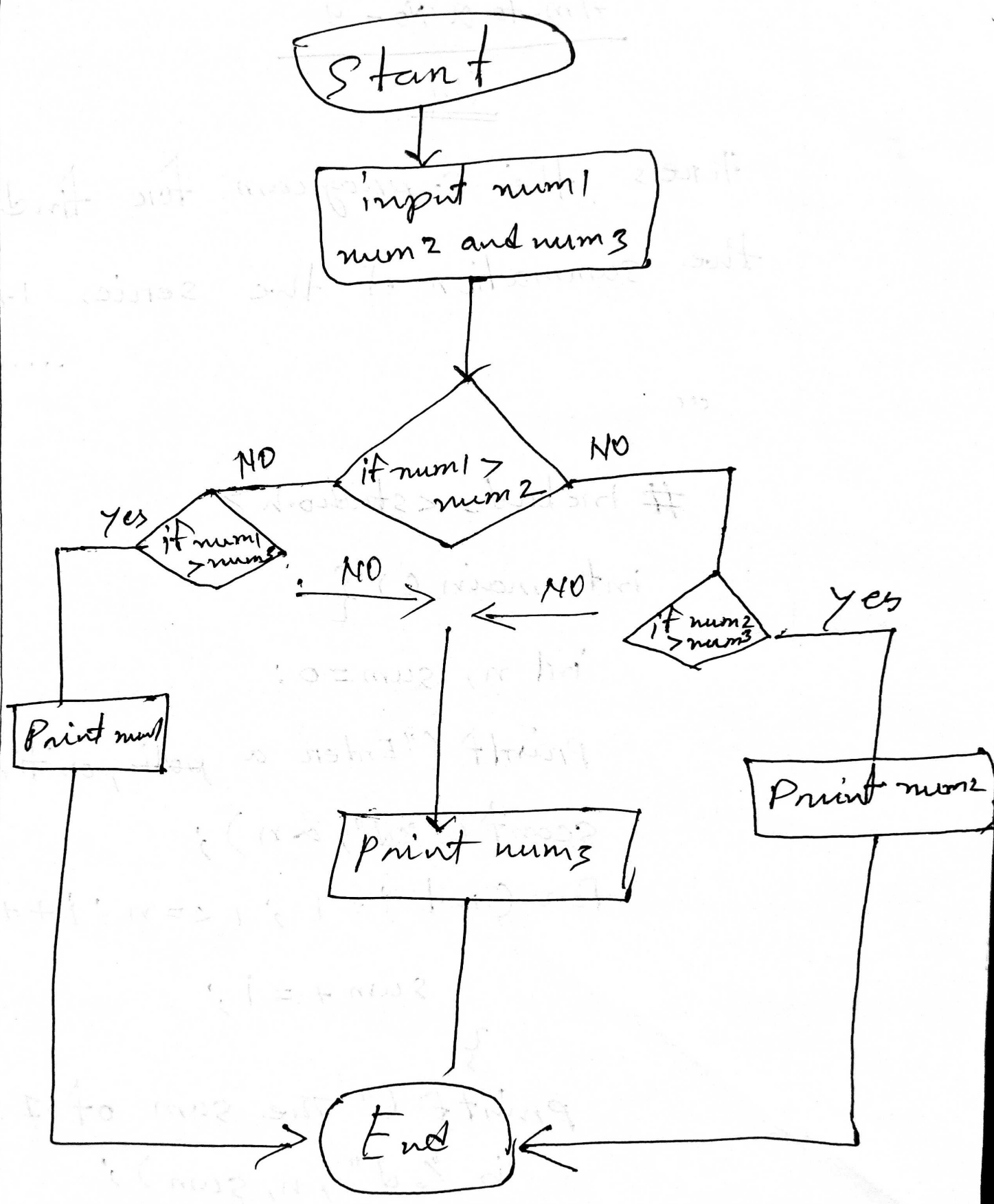
> if false then, then print 'num3'  
as the greatest number.

5. if false, then check if num2 is  
greatest than number 3.

> if true, then print 'num2' as  
the greatest number.

> if false, then print 'num3' as  
the greatest number.

Start



Ans. to the Q. No - 5 (a)

An algorithm is a step-by-step procedures or set of rules for solving a specific problem or accomplishing a particular task. It is a well-defined, unambiguous set instructions that can be executed by a computer or followed by a human to achieve the desired outcome.

On the other hand, A flowchart is a graphical representation of an algorithm or a process. It uses various symbols and shapes to depict different actions, decisions and control flow within a system. Flowcharts provide

provide a visual representation of the sequence of steps involved in solving a problem or completing a task.

Ans. to the question no-5

(b)

The basic differences between an algorithm and flowchart are as follows:-

1. Representation:

\* An algorithm is a written or verbal description of a series of steps or rules to solve a problem.

\* A flowchart is a graphical representation of an algorithm using symbols and shapes to illustrate the sequence of steps and decisions involved.

## 2. Format:

\* An algorithm is typically presented in a structured format using natural language or programming language syntax.

\* A flowchart is presented in a visual format using symbols, arrows and shapes to depict the logical flow and control structure of an algorithm.

## 3. Flexibility:

\* An algorithm can be implemented in various programming languages or executed manually by following the specified steps.

\* A flowchart is a tool for planning and designing an algorithm but cannot be directly executed. It serves as a blueprint for implementation.

#### 4. Communication:

\* An algorithm is primarily used as a means of communication between humans, allowing them to understand and implement a solution.

\* A flowchart enhances communication by providing a visual representation that can be easily understood and shared among individuals.

(c) (Ans. to the Q No-5)

ROM: ROM stands for read only

memory. It is type of computer memory

that certain data even when the

power is turned off. As the name

suggests, the data stored in ROM can

only be read and not modified or

erased. ROM is typically used to

store firmware or software instructions

that are essential for booting up the

computer and initializing hardware

components.

RAM: RAM stands for Random

Access memory. It is a type of

computer memory that is used to store data and program instructions that are currently being used by the computer's processor. RAM allows the CPU to quick access and manipulate data, provide temporary storage for running programs and multitasking.



Cache: In a computing, a cache is a high-speed data storage layer that stores frequently accessed data to reduce the time needed to access it from a slower underlying storage layer. The primary purpose of a cache is to improve the overall performance of a system by reducing the latency or delay associated with accessing data from the slower storage layer.

Flash memory: Flash memory is a type of non-volatile computer storage that can be electrically ~~er~~ erased

and reprogrammed. It is commonly used in portable electronic devices such as smartphones, digital cameras, USB drives and solid state drives (SSDs), as well as in imbedded system and other applications where data needs to be stored in a compact and durable format.

Flash memory is based on a type of transistor called a floating gate MOSFET, which can store electric charge even when the power is turned off.