# SECOND TERMINAL EVALUATION : DECEMBER - 2018

## COMPUTER SCIENCE

HSE: I

ANSWER KEY

Max Scores: 60

## PART - A (1x5 = 5)

1. FF
2. 
3. Void
4. num[19]
5. 2

## PART - B (9x2 = 18)

6. $(65)_{10} = (1000001)_2 = (101)_8$
7. Binary of (8 bit) (38) = $00100110_2$
   1's Complement (-38) = 11011001
   2's Complement (-38) = 11011001 + 1
   = 11011010
8. $A + \bar{A} = 1$ and $A \cdot \bar{A} = 0$

Proof:

| A | $\bar{A}$ | $A + \bar{A}$ |
|---|---|---|
| 0 | 1 | 1 |
| 1 | 0 | 1 |

| A | $\bar{A}$ | $A \cdot \bar{A}$ |
|---|---|---|
| 0 | 1 | 0 |
| 1 | 0 | 0 |

9. 3 1
10.
```
#include<iostream>
using namespace std;
int main()
{
  cout<<"hello world";
  return 0;
}
```
11. Signed, unsigned, long and short
12.

| break | continue. |
|---|---|
| used with switch and loop | used only with loop. |
| Takes the control outside the loop by skipping the remaining part of the loop. | Skip one iteration and perform all others. |
| Program control goes outside ~~only~~ when the test ... | Program control goes outside only when the test ... |

13.
```
s=0;
n=1;
while(n<10)
{
  s+=n;
  n++;
}
```
14. int CE[6] = {19, 18, 20, 20, 19, 20}
15.

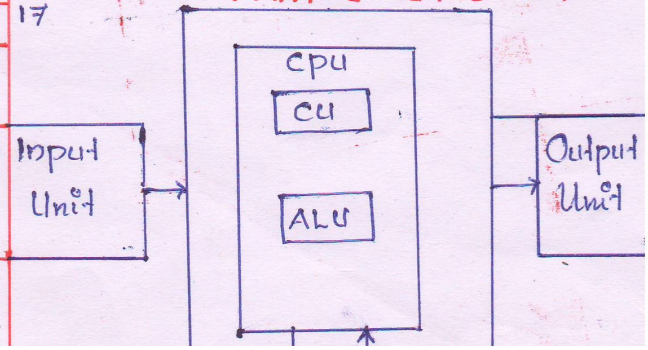
| Binary Search | Linear Search. |
|---|---|
| Elements should be in sorted order | Elements need not be Sorted order |
| Takes very less time for the process | Takes more time for the process |
| All the elements are never visited | May need to visit all the elements. |
| Suitable when the array is large | Suitable when the array is small |
| Less efficient | More efficient. |

16.

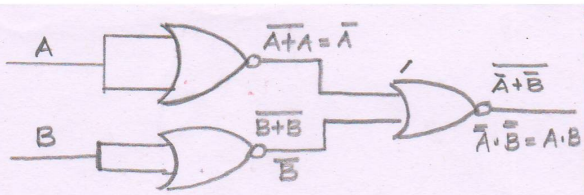
| Call by value | Call by Reference. |
|---|---|
| Ordinary variables are used as formal parameters. | Reference variables are used as formal Parameters. |
| Actual parameters may be constants, variables or expressions. | Actual Parameters will be variable only |
| Any changes made in the formal arguments does not affect the actual arguments. | Any changes made in the formal arguments affect the actual arguments. |
| Exclusive memory allocation is required for the formal arguments. | Memory of actual arguments is shared by formal arguments |

## PART - C (9x3 = 27)

17.



18.




19. Accumulator - It is associated with ALU. It store the intermediate result of ALU

MAR - Memory Address Register store address of the memory location from where data used to be processed.

MBR - Memory Buffer Register store the data that is to be processed

IR - Instruction Register store the currently executed instructions.

PC - Program Counter store the address of next executable instructions.

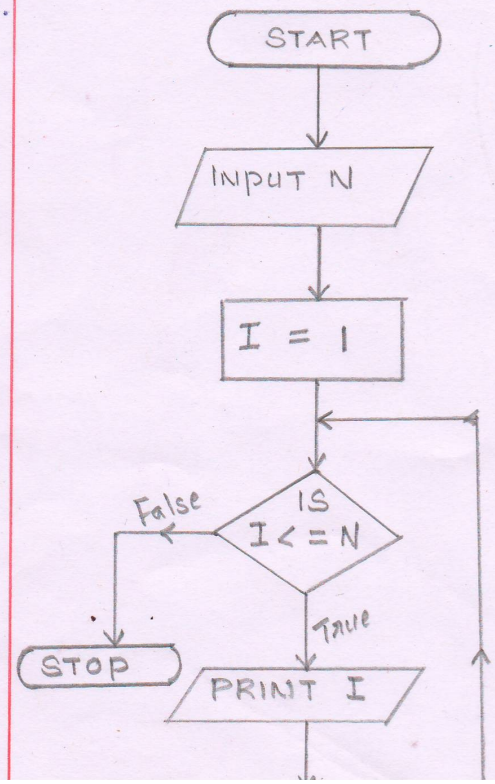
20. 1. Process Management - Allocation and Deallocation of various process inside the Computer. Program in execution is called Process.

2. Memory Management - Manages the memory in the Computer.

3. Device Management - Manages the device attached to the Computer.

4. File Management - Manages various file related operations in the Computer.

21.




22

Syntax error :- Rules for writting pgms is called Syntax. When we violated Syntax causes an error called Syntax error. It is detected by Compiler.

Logical error :- Improper planning of the program causes an error called logical error. It produce wrong output.

Run time error :- It will interrupt the execution of the program. Or Program behave abnormally.

23. 2num - first character is a digit.
void - keyword
a#b - Special character is used.

24.

```
#include <iostream>
using namespace std;
int main()
{ int d;
cout << " Enter the value of d :";
cin >> d;
if (d == 0)
    cout << " Zero";
else if (d == 1)
    cout << " One";
else
    cout << " Wrong input";
}
```

```
# include <iostream>
using namespace std;
int main()
{
  int d;
 cout << " Enter the value of d";
 cin >> d;
 switch (d)
 {
   case 0 : cout << " Zero";
            break;
   Case 1 : cout << " One";
            break;
   default : cout << " Wrong input";
 }
```

So in some situations switch statement can be used instead of if-else statement because both permits multiple

25. Step 1: Start
Step 2: Accept a value in N as the number of elements of the array.
Step 3: Accept N elements into the array AR
Step 4: Repeat steps 5 to 7, (N-1) times.
Step 5: Repeat step 6 until the second last element of the list.
Step 6: Starting from the first position, compare two adjacent elements in the list. If they are not in proper order, swap the elements.
Step 7: Revise the list by excluding the last element in the current list.
Step 8: print the sorted array AR
Step 9: Stop.

26. cin >> Str; statement cannot accept the String with white spaces. It treat white spaces as a termination. This problem can be overcome using the function getline() function defined in the header file iostream. This function can accept a string with white spaces.

27. abs() - math.h
isalpha() - ctype.h
Strcmp() - String.h.

## PART - D (2×5=10)

28. Primary memory is a semiconductor memory that is accessed directly by the cpu. It is capable of sending and receiving data at high speed. It hold data, intermediate results and results of ongoing process. It is classified into 3 types.
i. RAM ii. ROM iii. Cache.

i. RAM.

It stands for Random Access Memory because data can be stored and write operation. So it is called Read and Write Memory. The contents of RAM are lost when power is switched off. So it is called Volatile memory. The speed of RAM is measured in Mega Hertz (MHz). When a Computer is in use, RAM store
1. Operating System.
2. Application Software currently being used.
3. Data that is being processed.

ROM

It stands for Read Only Memory because it can perform only read operation. It is permanent in nature so it is called non-volatile memory. It store BIOS (Basic Input Output System) for booting or start up of a Computer.

Cache.

Small and fast memory between the processor and RAM (main memory) is called Cache memory. It advantage the speed of a Computer System.

29. (a). It should begin with the instructions to accept inputs.
2. Use variables for refer the data.
3. Each instructions should be precise and unambiguous.
4. Each instructions should be carried out in a finite time.
5. After performing the desired output must be obtained.

b) Step 1: Start
Step 2: read n.
Step 3: fact = 1, i = 1;
Step 4: Repeat Step 5 and Step 6 while i <= n
Step 5: fact = fact * i
Step 6: i = i + 1
Step 7: Print fact.

④ 30

```
#include <iostream>
using namespace std;
int main ()
{
   int num, copy, digit, rev=0;
  cout << " Enter the number:";
  cin >> num;
  copy = num;
  while (num != 0)
  {
     digit = num % 10;
     rev  = (rev * 10) + digit;
     num = num/10 ;
  }
cout << " Reverse of the number
          is:" << rev;
if (rev == copy)
    cout << "\n The given number
  is palindrome" ;
else
   cout << "\n The given number
     is not palindrome";
return 0;
}
```

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