

CLA - 1

Q. 1 Explain different computer components with block diagram?

⇒ CPU (Central Processing Unit): Executes instructions and performs calculations.

Memory (RAM): Temporarily stores data and instruction for the CPU

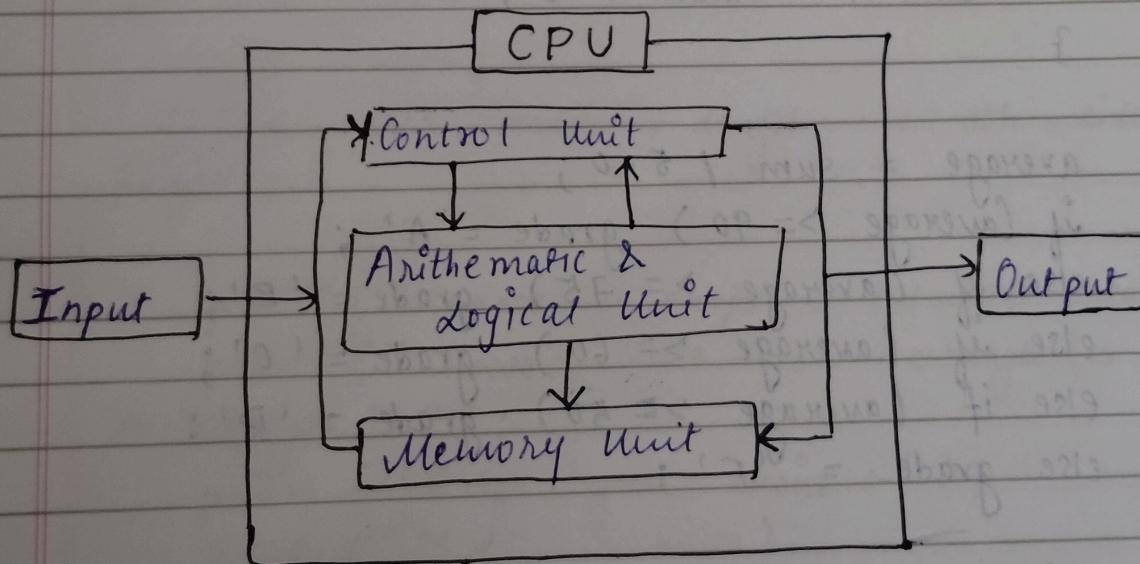
Storage Unit: Hard drives or SSDs for long-term data storage.

Input devices: Such as keyboards, mouse, etc.

Output devices: Monitors, printers, etc.

Motherboard: Connects all components together

Power supply: Provides power to all components.



Q:2

Write a C program that reads marks in 5 subjects, calculate average marks and assign a grade as per following.

⇒ #include <stdio.h>
int main () {
 int marks [5];
 int sum = 0;
 float average;
 char grade;

 for (int i=0; i<5; i++) {
 printf ("Enter marks for subject %d: ", i+1);
 scanf ("%d", &marks [i]);
 sum += marks [i];
 }
}

average = sum / 5.0;
if (average >= 90) grade = 'A';
else if (average >= 75) grade = 'B';
else if (average >= 60) grade = 'C';
else if (average >= 50) grade = 'D';
else grade = 'F';

printf ("Average marks : %.2f\n", average);
printf ("Grade: %c\n", grade);

return 0;

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Output :

Enter marks for subject 1 : 85

" " " : 92

" " " : 91

" " " : 78

" " " : 88

Average Marks : 86.80

Grade : A

Q.3

Write a program in C which is menu driven program to compute area of the various geometrical shapes like circle, rectangle, square, triangle using switch statements.

→ #include <stdio.h>

int main () {

int choice;

float area, radius, length, breadth, side, base, height;

printf ("Choose a shape to calculate area : \n");

printf ("Choose 1. Circle \n 2. Rectangle \n 3. Square \n

4. Triangle \n");

printf ("Enter your choice : ");

scanf ("%d", &choice);

switch (choice) {

case 1:

printf ("Enter radius : ");

scanf ("%f", &radius);

~~area = length * breadth;~~

area = 3.14159 * radius * radius;

Enter your choice : 2
 Enter length and breadth : 13 18
 Area of rectangle : 234.00

Q.4

Write a program in C to display the pattern like this !

```
*
** 
*** 
**** 
*****
```

⇒ #include <stdio.h>

```
int main () {
    for (int i = 1 ; i <= 5 ; i++) {
        for (int j = 1 ; j <= i ; j++) {
            printf("*");
        }
        printf("\n");
    }
    return 0;
}
```

Q.5 Write a program in do-while loop to print the table of a given no.

⇒ #include <stdio.h>

```
int main () {
    int num , i = 1 ;
    printf ("Enter a number : ");
    scanf ("%d" , &num) ;
```

```

printf ("Table of %d \n", num);
do {
    printf ("%d * %d = %d \n", num, i, num * i);
    i++;
} while (i <= 10);
return 0;
}

```

OUTPUT

Enter a number :- 5

Table of 5 :-

$$5 \times 1 = 5$$

$$5 \times 2 = 10$$

$$5 \times 3 = 15$$

$$5 \times 4 = 20$$

$$5 \times 5 = 25$$

$$5 \times 6 = 30$$

$$5 \times 7 = 35$$

$$5 \times 8 = 40$$

$$5 \times 9 = 45$$

$$5 \times 10 = 50$$