

STANDARD 10

COMPUTER SCIENCE

UNIT 01

CHAPTER 04

CONTROL STRUCTURES IN C

1. What are conditional statements?

A: Conditional statements are statements that are used to execute/transfer the control from one part of the program to another depending on a condition. There are two types of control/conditional statements used in C language. (a). if-else statement (b). switch statement.

2. Explain the if else statement.

A: **if-else statement:**

if-else statement is a conditional statement used to execute a statement block or a single statement depending on the value of the condition.

Syntax:

```
if (condition)
{
    <true block>
}
else
{
    <false block>
}
```

3. What is nested if-else statement?

A: If an if-else statement have another if-else statement inside it, it is called nested if-else statement.

4. Write a short note on switch statement.

A: **switch Statement**

switch statement is a conditional statement which is used to execute a block of statements depending on the value of a variable or an expression.

Syntax:

```
switch(<expression>)
{
    case <label 1>:
    {
        <statement 1>
        break;
    }
    case <label 2>:
    {
        <statement 2>
        break;
    }
    ---
    case <label n>:
    {
        <statement n>
        break;
    }
    default:
    {
        <statement default>
        break;
    }
}
```

5. Write a C program to find the smallest of given three numbers.

A:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    int a, b, c, small;
    printf("Enter three numbers\n");
    scanf("%d %d %d", &a, &b, &c);
    small = a;
    if (b < small)
        small = b;
    if (c < small)
        small = c;
    printf("\nSmallest number is %d", small);
    getch();
}
```

6. Write a C program to find the average of best three marks from the given four test marks.

A:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    float t1, t2, t3, t4, smallest, average;
    printf("Enter the four marks\n");
    scanf("%f %f %f %f", &t1, &t2, &t3, &t4);
    smallest = t1;
    if (t2 < smallest)
        smallest = t2;
    if (t3 < smallest)
        smallest = t3;
    if (t4 < smallest)
        smallest = t4;
    average = {(t1+t2+t3+t4) - smallest}/3;
    printf("\nAverage of the best three marks = %d", average);
    getch();
}
```

7. Write a C program to read the marks scored by a student in an examination and print the percentage of marks along with the grade obtained using the following conditions.
- (a) percentage ≥ 75 and percentage ≤ 100 , "DISTINCTION"
 - (b) percentage ≥ 60 and percentage < 75 , "FIRST CLASS"
 - (c) percentage ≥ 50 and percentage < 60 , "SECOND CLASS"
 - (d) if the marks obtained by the student in any subject is < 50 , "FAIL".

A:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    float mark, total, percen;
    printf("Enter secured mark\n");
    scanf("%f", &mark);
    printf("Enter total mark\n");
```

```
scanf("%f", &total);
percen = (mark / total) * 100;
if (percen  $\geq 75$  && percen  $\leq 100$ )
{
    printf("\nDISTINCTION");
}
else if (percen  $\geq 60$  && percen  $< 75$ )
{
    printf("\nFIRST CLASS");
}
else if (percen  $\geq 50$  && percen  $< 60$ )
{
    printf("\nSECOND CLASS");
}
else
{
    printf("\nFAIL");
}
getch();
}
```

8. A company gives festival dis of their products in the following percentages.
- (i) if pur amount < 1000 then 5% dis
 - (ii) if pur amount ≥ 1000 but < 3000 then 10% dis
 - (iii) if pur amount ≥ 3000 but < 5000 then 12% dis
 - (iv) if pur amount > 5000 then 15% dis.
- Write a C program using nested if statement to compute the amount to be paid by the customer after discount.

A:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    float pur, dis, amount;
    printf("Enter purchase amount\n");
    scanf("%f", &pur);
    if (pur  $< 1000$ )
    {
        dis = (5 / 100) * pur;
    }
    else
```



```
{
    if(pur < 3000)
    {
        dis=(10/100)*pur;
    }
    else
    {
        if(pur < 5000)
        {
            dis=(12/100)*pur;
        }
        else
        {
            dis = (15/100)*pur;
        }
    }
}
amount = pur - dis;
printf("\nAmount to be paid by the
user after dis = %f", amount);
getch();
}
```

KANGLON

