NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL

DEPARTMENT OF ELECTRICAL ENGINEERING

1 B.Tech., I Semester

Exam-1, December 2022

Sub : Problem Solving and Computer Programming (CS131) Date: 15-12-2022

Time : 1 Hr. Max. Marks: 10

1. Write the output for the following code: (8×½=4M)

Note that, write the answers in the ANSWER SHEET ONLY.

(a)
```
#include<iostream>
using namespace std;
int main()
{
  int a=024,b=045,c=0x42,d=20;
  int e;
  e=a+b*c/d;
  cout<<e<<endl;
}
```
OUTPUT 142

(b)
```
#include<iostream>
using namespace std;
int main()
{
 int a=100;
  if(a>10)
     cout<<"NIT Trichy";
  else if(a>20)
     cout<<"NIT Warangal";
  else if(a>30)
     cout<<"NIT AP";
 return 0;
}
```
OUTPUT NIT Trichy

(c)
```
#include<iostream>
using namespace std;
int main()
{
 int main=5;
 cout<<main;
 return 0;
}
```
OUTPUT 5

(d)
```
#include<iostream>
using namespace std;
int main()
{
  int a=5,b=7,c=5,d;
 d=--a+b+++c--;
  cout<<d;
  return 0;
}
```
OUTPUT 16

(e)
```
#include<iostream>
using namespace std;
int main()
{
  int a=5,b=7,c=5,d;
 d=a+a/b+b/c%2;
 cout<<d;
  return 0;
}
```
OUTPUT 6

(f)
```
#include<iostream>
using namespace std;
int main()
{
 int a=100;
  if(a>10)
     cout<<"NIT Trichy\n";
  if(a>20)
     cout<<"NIT Warangal\n";
  else
     cout<<"NIT AP\n";
 return 0;
}
```
OUTPUT NIT Trichy NIT Wrng

(g)
```
#include<iostream>
using namespace std;
int main()
{
 int a=45,b=65,c;
 c=a>>3&b<<2;
 cout<<c;
 return 0;
}
```
OUTPUT 4

(h)
```
#include<iostream>
using namespace std;
int main()
{
 int a=2,b=3,c;
 c=a^3+b>>3/b^3;
 cout<<c;
 return 0;
}
```
OUTPUT 2

Answer all questions: Each question carries 2 marks.

Note that don't use loops or arrays for any question, if you write the program using arrays you won't get any marks for that.

2 Reliance Trends announced Shopping festival Season-1 on a date and Shopping festival Season-2 from another Date. They announced that the next festival season-3 will be on a date which is the date obtained by adding to the season-2 date with the difference of Season-1 and Season-2 dates. The input to your program is season-1 date as three integers and Season-2 date also as three integers. Assume that all the 12 months contain 30 days each.

Example: Input: Enter date of Festival Season-1 : 25 12 2021
Enter date of Festival Season-2 : 15 9 2022
Output: Date of Festival season-3 is : 5 6 2023

3 An organization wants to transmit data securely over telephone, but they are concerned that their phone may be tapped. All the data are transmitted as five digit integers (numbers). The organization wants to encrypt (hide the actual five digit number by encoding) the actual five digit number so that it can be transmitted more securely. The encryption or encoding method is as follows. Each digit in the encoded form will be obtained by taking modulo 10 of sum of the corresponding digits of the original number with that of another number of same length (known as key). Write a program to encrypt the given five digit number and display the resultant number (Note that the result need to be displayed as a number; not as individual digits).

Example: Enter a five digit number :45672
Enter the key :95294
Output: The encoded number is:30866

4 If you want to goto your house at Hyderabad, there are three options for you: Train(t), Bus(b), Car(c).

- If you go by bus, you need to get down at 'Uppal' and from there you can take either auto(a) or MotorBike(m) to reach your house.
- If you go by car, you will directly reach your house.
- If you go by train, you need to go by ShareTaxi(s)/MotorBike(m) /auto(a). But if you use ShareTaxi(s), after getting down once again you need to go by MotorBike(m).

Write a program to cover all the options.

Example-1: Enter your first choice: t
Enter your second choice: m
Output: I reached my house by train and then by MotorBike.

Example-2: Enter your first choice: c
Output: I reached my house by car.