National University of Computer and Emerging Sciences, Lahore Campus

Course:	Programming Fundamentals	Course Code:	CS-1002
Program:	BS (Data Science)	Semester:	Spring 2022
Duration:	60 Minutes	Total Marks:	30
Exam Date:	24-March-22	Weightage	15%
Section(s):	All	Page(s)	
Exam:	Midterm-I		

Name: **Roll Number:** **Section:**

Instructions:

Attempt all the questions in the provided space.

Your Exam will be marked as Zero, if involved in any kind of cheating.

Problem understanding is the part of exam so no query will be entertained during the exam.

In Question#1, there are 5 marks for each part.

Question#1: Output/Error Correction Marks: /15

Part(a): Predict the output

Assume that all necessary header files are included

```
int main(){
  int x = 4, y = 6, z = 9;
  if (x % 2 == 0 && y++ * --z > 50)
  {
    if(x/y != z/y)
      z += ++x % y;
    else
      z *= ++x % y;
  }
  else
    y -= z / ++x;
  if (x > y && y > z)
  {
    cout << "x is largest\n";
    cout << "x="<< x << "y=" << y << "z=" << z;
  }
  else if (y>x && x > z)
  {
    cout << "y is largest\n";
    cout << "y=" << y << "x=" << x << "z=" << z;
  }
  else if (z > y && y > x)
  {
    cout << "z is largest\n";
    cout << "z=" << z << "y=" << y << "x=" << x;
  }
  return 0;
}
```

Output:

Part(b): Predict the output	**Output**

Assume that all necessary header files are included
int main(){
int myNum = 10;
int yourNum = 30;
if (!(yourNum % myNum == 0))
{
cout << "if block\n";
myNum += 2;
yourNum -= 5;
}
else if (!(myNum % yourNum == 0))
{
cout << "else-if block\n";
myNum -= 2;
yourNum += 5;
}
else
{
cout << "else block\n";
myNum = yourNum;
yourNum += myNum;
}
cout << myNum << " " << yourNum << endl;
return 0;
}	

Q#3: Rewrite the statement/s causing error in the following piece of code

void mian	
int a = 7; b == 5,	
floot res = '3.4';	
double Float = 3.9;	
Res == a + b X 100;	
If{res ≥ b +100 }	
cout >> res is greater ;	
]	

Question#2: Marks: /15

An insurance company follows following rules to calculate premium.

- If a person's health is excellent and the person is between 25 and 35 years of age with marital status should not be single and is a male, then the premium is $4 per thousand and his policy amount should be in the range $(10K to 90K).
- If a person satisfies all the above conditions except that the gender is female, then the premium is $2 per thousand and her policy amount should be in the range $(5K to 50K).
- If a person's health is poor and the person is between 25 and 35 years of age with marital status should not be single and is a male, then the premium is $6 per thousand and his policy amount should be in the range $(5K to 40K).
- In all other cases the person is not insured.

Write a program that prompts the user to enter policy amount and remaining necessary data required for the process. Your task is to calculate and display the premium for the provided policy amount if the person is insured otherwise display a message "Not Insured".