

Course Code: CS-118	Course Name: Programming Fundamentals
Instructor Name / Names: Ms. Atiya Jokhio	

Instructions:

- Attempt all the questions
- Don't share your work, if your submission is matched to any member of your class, both will be marked 0 straight without asking who shared or who magically copied.
- You have to submit (Q#2 to Q#5) in soft copy on a Google Classroom till Monday i.e. 9th November, 2020 up to 11:59 pm.
- Also, you have to submit all questions (Q#1 to Q#5) in Hardcopy in your theory class timing on Tuesday i.e. 10th November, 2020.
- V.va will be conducted from submitted assignment.
- No late submissions will be accepted.

Max Marks: 40 Points

Question: 1 Observe and try to understand the following programs. Write errors if there are any available or write outputs if the programs are fine.

a) <pre>#include<stdio.h> int main () { int x; for(x=-1; x<=20; x++)int i; { if(x < 10) continue; else break; printf("Never give up!!!"); } }</pre>	b) <pre>#include<stdio.h> main() { int x = 5; if(x=5) { if(x=5) break; printf("Hello"); } printf("Hi"); }</pre>
c) <pre>#include<stdio.h> #include<conio.h> main() { int a=5,b=3; ans=(a++)+b; printf("Answer is %d\n",ans); printf("A is %d",a); getch(); }</pre>	d) <pre>Let a=5 and b=4 #include<stdio.h> #include<conio.h> main() { int a=0,b=0; printf("Enter value of A: "); scanf("%d",a); printf("Enter value of B: "); scanf("%d",b); a=(a++)+b; b=2b/2; printf("A is %d and B is %d\n",a,b); a==(a++)+ (--b); printf("A is %d and B is %d\n",a,b); }</pre>

e)	<pre>#include <stdio.h> void main() { int a=10; switch(a){ case 5+5: printf("Hello\n"); default: printf("OK\n"); } }</pre>	f)	<pre>#include<stdio.h> void f() { printf("Hello\n"); } main() { ; }</pre>
----	--	----	--

Question: 2

Write a C program to calculate the Euclidean distance between the three points A, B and C using functions. The program declares A(x1,y1) and inputs the x and y coordinates of points B and C from user. The distance between A and the two points is calculated using function call to function Euclidean(x1,y1,x2,y2,x3,y3) where x1,y1 are the coordinates of point A and x2 ,y2 ,x3 and y3 are the coordinates of the other points. Based on the return value of the function , program displays the output as:

'A is closer to B' or 'A is closer to C'

Note:

1. x1, y1, x2, y2, x3 and y3 are all double values.
2. You should include the Math library #include <math.h> and square root and power function syntax are sqrt(num); pow(double(base),double(power)).

The distance formula to calculate distance between any two points is given as under:

Formula:

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Question: 3

Ali wants to go from sukkhar to karachi. He does not know about driving, so he decided to hire a driver for a day. His driver charged him on the basis of total kilometers covered per day. Write a C program to input distance covered by car in kilometers and calculate the total distance covered in a day according to the given condition:

For first 50 km, Rs. 50.5/km

For next 100 km, Rs. 90.9/km

For next 100 units Rs. 110/km

For unit above 250 Rs. 150.5/km

An additional toll tax of 10% is added to the bill.

Question: 4

Write a program that displays water bill. Your program should prompt the user to enter an integer account number, a character user code, and a real number representing the gallons of water used. The output from your program should include the account number, message indicating the type of usage, and the amount of money due from the user. The water rates vary depending on the type of usage. A code of H means home

use, a code of C means commercial use, and a code of I means industrial use. Any other code value should be treated as an error.

Water rates are computed as follows:

Code H: Rs. 500 per gallon

Code C: Rs.1000 for the first 1000 gallons used plus Rs. 250 for each additional gallon used

Code I: Rs. 1000.00 if usage does not exceed 500 gallons Rs. 2000.00 if usage is between 500 gallons to 2500 gallons Rs. 3000.00 if 2500 or above gallons are used.

Question: 5

Write a c code for the following output using nested loops.

i)

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

ii)

```
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1
```

iii)

