

Course Details

Course Title: Programming Fundamentals Module: 02 \_\_\_\_\_  
Instructor: \_\_\_\_\_ Total Marks: 30 \_\_\_\_\_

Student Details

Name: Student ID: Adnan khan 16208

Q1. (a) Write a program in python where you input two integer values from user and Marks 5  
determine if the first integer is the multiple of the second integer.

\_\_\_\_\_ CLO 1

(b) Write a program in python for a shopping mall to determine if the customer has Marks 5  
exceeded the credit limit on a charge account.

Program should input the following facts in five variables

1. Account number
2. Balance at the beginning of month (Beginning balance)
3. total of all items charged by customer this month (charges)
4. total of all credits (credits)
5. allowed credit limit

Calculate the new balance

New balance = Beginning balance + charges – credits

Your program must determine if the new balance exceeds the allowed credit  
limit. If credit

limit is exceeded then program should display the message "Credit Limit  
exceeded."

\_\_\_\_\_ CLO 1

Q2. (a) 1. Steps that involve precise sequence to solve a problem is called

\_\_\_\_\_ Marks  
14

- a. Statement      b. Program  
c. Utility          d. Routine

2. In an if structure statements are executed only,

- a. When the condition is false      b. When it contain arithmetic  
operators  
c. When it contain logical operators      d. When the condition is true

3. Which of the following can not be a variable name?

- a. area      b. \_area  
c. 10area      d. area2

4. Which loop process is best when the number of iterations is known?

- a. for      b. while  
c. again      d. all looping processes require that  
the iterations be known

5. Which special character is in the end of a string to indicate the end?

- a. new line      b. tab  
c. null      d. carriage return

6. A total of \_\_\_\_\_ bytes are occupied by the following variable.

txt = "programming fundamentals"

7. Commenting the code \_\_\_\_\_

- a. Makes a program easy to      b. Make programs heavy, i.e. more  
understand for others.      space is needed for executable.  
c. Makes it difficult to compile      d. All of the given options

\_\_\_\_\_ CLO 1

Q3. (a) Write a program in python that will create and display the following series in  
the output using the formula  $2x^2 - 3x$ :

\_\_\_\_\_ Marks 2

65, 44, 27, 14, 5, 0, -1, 2, 9, 20

\_\_\_\_\_ CLO 1

(b) You have the following python code, draw the flow chart of the whole code

\_\_\_\_\_ Marks 3

```
numbers = range(10,20)
```

```
sum = 0
```

```
for i in numbers:
```

```
    sum = sum + i
```

```
print("Total Sum = ", sum)
```

\_\_\_\_\_ CLO 1

①

Q 1:-

a)

Answer:-

```
Number = input("Type your first number:")  
checkomundo = input("Type your second number:")
```

```
first = int(number) % int(checkomundo)  
last = int(checkomundo) % int(number)
```

```
if first == 0 : print("your first number is  
a multiple of the second")
```

```
if last == 0 : print("your second number  
is multiple of the first")
```

```
Print ("")
```

```
if first > 0 : print("your first number is  
not NOT a multiple of the second")
```

```
if last > 0 : print("your second number is  
NOT a multiple of the first")
```

```
Print ("")
```

Q 1:-)

b)

Answer:-

1. Read the problem Statement.
2. Formulate the algorithm using pseudocode and top down, stepwise refinement.

(2)

11.3. write a C program.

11.4. Test, debug and execute the C program.

//

// Exercise 3.18

// (Credit Limit Calculator) Develop a C program that will determine if a department store customer has exceeded the credit limit on a charge account.

// For each customer the following facts are available:

// a) Account number

// b) Balance at the beginning of the month.

// c) Total of all items charged by this customer this month

// d) Total of all credits applied to this customer's account this month

// e) Allowed credit limit

// The program should input each of these facts, calculate the new balance

// (= beginning balance + charges - credits), and determine if the new balance exceeds the customer's credit limit.

(3)

For those whose credit limit is exceeded, the program should display the customer's account number, credit limits, new balance, and the message "credit limit exceeded."

## 11.2. Pseudocode

11 Determine if a customer has exceeded their credit limit

11 while the user has not entered the sentinel

11 input the customer's account number

11 input the customer's balance at the beginning of the month.

11 input the customer's total charges for this month

11 input the customer's total credit for this month

11 input the customer's credit limit

11 Add the beginning balance to the charges this month and subtract any credits

11 if the new balance is greater than the customer's credit limit 11 print the customer's account number, credit limit, new balance, and the message (credit limit exceeded.)

11 end while

```
# include <stdio.h>
```

```
# include <stdbool.h>
```

(4)

```
int main () {  
int accountNumber;  
float beginningBalance, totalCharges,  
totalCredits, creditLimits, accountBalance;
```

```
while (true) {  
printf ("Enter account number (-1 to end): ");  
scanf ("%d", &accountNumber);
```

```
if (accountNumber == -1) {  
return 0;
```

```
}  
printf ("Enter beginning balance:");  
scanf ("%f", &beginningBalance);
```

```
printf ("Enter total charges:");  
scanf ("%f", &totalCharges);
```

```
printf ("Enter total credits:");  
scanf ("%f", &totalCredits);
```

```
printf ("Enter credit limit:");  
scanf ("%f", &creditLimits);
```

```
accountBalance = beginningBalance +  
totalCharges - totalCredits;
```

```
if (accountBalance > creditLimit) {  
printf ("Account: \t %d \n", accountNumber);  
printf ("Credit limit: \t %.2f \n", creditLimit);  
printf ("Balance: \t %.2f \n", accountBalance);
```

(5)

```
printf ("Credit limit exceeded.\n");  
}  
}
```

```
return 0;  
}
```

Q2 :->

(a)

1: Steps that involve precise sequence to solve a problem is called

(b) Program

2: In an if structure statement are executed only,

d) when the condition is true

3: Which of the following can not be a variable name?

c) 10 area

4: Which loop process is best when the number of iterations is known?

a) for

5: Which special character is in the end of a string to include the end?

c: null

6: A total of 22 bytes are occupied by the following variable  
Ext = "programming fundamentals"

(6)

7: Commenting the code Make a program easy to understand for other.

Q 3:->

a)  
Answer

```
Coading ground Excoure Python
1 Hello world program in pythos
2
3 Sum = 0
4
5 For i in range (-5 40,
6 Formula = (2 * (i ** 2)) - (3 * i)
7 Print ("series:", formula)
```

we can write a program in python that will creat and display the following series in the output using the formula  $2x^2 - 3x$ :  
65, 44, 27, 14, 5, 0, -1, 2, 9, 20

Q 3:->

b)

Answer:->

1) Number has range of number from 10 to 20

2) A variable name Sum is set to 0

(7)

③ For loop is use to Sum from previous values Sum currently it is zero while, I, Has value 10 for the first pointer.

4) This addition goes on till reaches 20 and at the end result is shown which is 145 in this case

As shown in the following figure.

1	
2	
3	
4	Code,
5	write a code in this,
6	
7	...
8	
9	numbers = range (10, 20)
0	Sum = 0
1	for i in numbers:
2	Sum = Sum + i
3	print ("Total sum = ",)
4	
5	