

LOCATION: LONDON

LEVEL 4

LEFEL 4

EXAMINATION PERIOD
OCTOBER 2021

CYFNOD ARHOLIADAU
MEDI 2021

MODULE CODE: ACCA4017
SOFTWARE DEVELOPMENT

TIME: 2 HOURS

ANSWER ALL QUESTION/S IN PART ONE
ANSWER ANY TWO QUESTIONS IN PART TWO

Equipment or materials required – Computers with Python installed or Google Colab

Submission details for Software Development in-class test on 13th January at 2pm

Create a folder and name it with as Exam your studentID.

Answer your PART ONE in a document and save it as a MSWord or PDF file. Save this document in your Exam folder.

Use your Pycharm or similar editor to answer your PART TWO. Save all your Pycharm files in your folder created for exams.

Zip your Exam folder and upload it on the advance upload link provided on Moodle. Make sure your exam folder contains a MSWord or PDF document answering Part one and Part Two of Python files correctly.

PART ONE: ANSWER ALL QUESTIONS

1. a) What variable type would Python infer for the following values:

1.32

124

Hello

-34.62

[-562]

[1 mark each - 5 marks total]

1. b) Spot the errors in the following program to calculate the area of a circle and write the error-free program in the empty box.

Program with errors	Error-free program
<pre>print("Enter the radius) radius = input() area = 3.14*radius*radius PRINT(" The area of the circle is : " area)</pre>	

[1 mark each mistake identified - 5 marks total]

1. c) How many iterations do the following loops have?

i) for i in range(50):
 print(i)

ii) for i in range(1,10,2):
 print(i)

[2 marks each - 4 marks total]

1.d) What is the value of the integer variable *total* after the following code is executed?

```
total=0
for x in range(10):
    total=total+x
    if(x == 5):
        total=0
```

..... [4 marks total]

1.e) Given the following program:

Temp = [23,24,25,29,40,56]

i) Write the code you would use to print the value stored in the third element of the array on the screen

.....

ii) Write the code you would use to sum up the first and last elements of the array

.....

[1 mark each - 2 marks total]

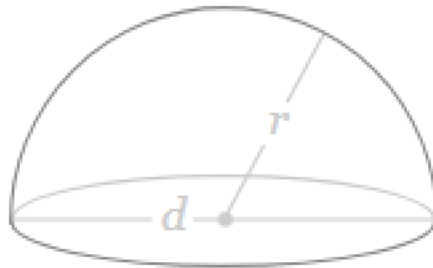
[20 marks total for Question 1]

Part TWO (Answer any two questions)

1. Calculating the volume of a hemisphere

The volume of a hemisphere (half-sphere) is calculated using the formula:

$$V = \frac{2}{3} \pi r^3$$



Task:

Write a program to calculate the volume using the above formula.

Allow the user to enter the measurement for r . You may set π as 3.142

[20 marks total]

2. Using List

Task:

Define a list called height and enter the following values:

height= [122,145,163,122,121,141,170,180].

Use the list functions available to do the following:

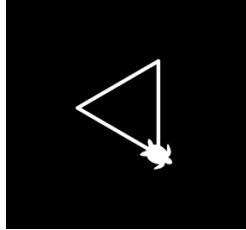
1. Display the created list.
2. Append 190 to the list.
3. Display total number of elements in the list.
4. Sort the list in ascending order and display the modified list.
5. Display the list in reverse order.

[4 marks each - 20 marks total]

3. Using Turtle

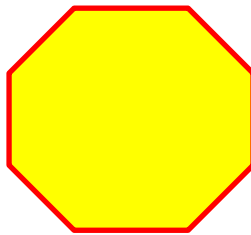
Using Python with Turtle, draw the following shapes:

- a. A triangle with black background



[5 marks total]

- b. An octagon filled with yellow colour and sides in red colour.



[15 marks total]

[20 marks total for Question 3]

Diwedd/End