EXAMINATION PAPER: ACADEMIC SESSION 2022/2023

Campus	Collaborations
Faculty	Engineering and Science
Department	School of Computing & Mathematical Sciences
Level	4
TITLE OF PAPER	Programming Foundations
COURSE CODE	COMP1753
Date	18th April 2023
Duration	1 hour 30 minutes
Time	Vietnam :18:30

Answer ALL questions

You may use your log book and a text book during the exam. You may also use a computer and online Python documentation as reference material.

To submit your answers, go to the COMP1753 Moodle page and download an Answer Sheet (Word document). Type your answers into the document and submit it on Moodle.

Failure to follow any of these instructions may result in you failing the exam.

Answer all questions.

1. Which of the following are keywords in Python (choose 2)?

   A. `break`
   B. `yes`
   C. `def`
   D. `Def`
   E. `why`

   [5 marks]

2. Which of the following are legal variable names (choose 2)?

   A. `1_world`
   B. `one_world`
   C. `_oneworld`
   D. `#one_world`
   E. `one world`

   [5 marks]

3. How many times will `!!!!` appear if `aFunction` is called with the parameter `arg` being set to 5 (choose 1)?

```
def aFunction(arg):
    while arg < 7:
        print("!!!!")
        arg += 1
```

   A. `!!!!` will not appear
   B. `!!!!` will appear 1 times
   C. `!!!!` will appear 2 times
   D. `!!!!` will appear 3 times
   E. `!!!!` will go on printing forever

   [5 marks]

4. Examine the following function which is designed to be passed two String variables, convert them into Numbers, add them together and return the result. Which lines need to be changed to make the code work (choose 2)?

```
1: def add(string1, string2): """ start add """
2:     num1 = int(string1)
3:     num2 = int(string1)
4:     return num1 and num2
5: # end add
```

   A. Line 1
   B. Line 2
   C. Line 3
   D. Line 4
   E. Line 5

[5 marks]

5. What will be printed out when you run the following code (choose 1)?

```
count = ["1", "2", "3", "4", "5"]
print(count[2] + count[4])
```

   A. `count[2] + count[4]`
   B. `8`
   C. `24`
   D. `35`
   E. There will be a run-time error.

[5 marks]

6. Which of the following are true (choose 2):
   A. Every `if` statement must include an `else` statement
   B. Every `else` statement must accompany an `if` statement
   C. Every `elif` statement must accompany an `if` statement
   D. Every function must include a `return` statement
   E. Every function must include at least one parameter

[5 marks]

7. What value will be printed if `aFunction` is called (choose 1)?

```
def aFunction():
    anInt = aFunction2(5)
    print(anInt)

def aFunction2(arg):
    if arg < 4:
        return 1
    elif  arg > 4:
        return arg * 3
    else:
        return arg * 4
```

A. 1
B. 5
C. 15
D. 20
E. The code will not run because of a syntax error

[5 marks]

8. Identify all legal Python operators (choose 2).

A. `=-`
B. `!`
C. `when`
D. `-=`
E. `<>`

[5 marks]

9. Assuming `boolean1` is set to `False` and `boolean2` is set to `False`, in which of the following expressions is `boolean3` assigned the value `True` (choose 2):

A. `boolean3 = boolean1`
B. `boolean3 = not boolean2`
C. `boolean3 = boolean1 and boolean2`
D. `boolean3 = not boolean1 and boolean2`
E. `boolean3 = not (boolean1 and not boolean2)`

[5 marks]

10. Identify the lines containing a legal Python comment (choose 2)

A. `## is this a comment? ##`
B. `"# is this a comment? #/"`
C. `<!-- is this a comment? -->`
D. `"""""is this a comment?"""""`
E. `/ *  is this a comment? * /`

[5 marks]

11. Identify the correct statements (choose 2):

A. Every function must have at least one parameter
B. The variable names of arguments passed to a function do not need to match the variable names of the parameters declared for the function
C. A function may not call another function
D. The keyword `def` is used to declare a function
E. The keyword `def` is used to call (invoke) a function

[5 marks]

12. Identify all correct list declarations (choose 2)

A. `letters = "x", "y", "z"`
B. `letters = {"x", "y", "z"}`
C. `letters = ("x", "y", "z")`
D. `letters = ["x", "y", "z"]`
E. `letters = []`

[5 marks]

13. Assuming `count` is a variable assigned the value of 0, which of the following expressions evaluate to `True` (choose 2):

A. `count > 0`
B. `count >= 0`
C. `count < 1`
D. `count != 0`
E. `count == "0"`

[5 marks]

The code below is used for questions 14 and 15. Here `n` is a number between 1 and 10 set by the user:

```
01  for i in range(n):
02      s = ""
03      for j in range(n+1):
04          s += ">"
05      for j in range(n+1):
06          s += "<"
07      print(s)
```

14. Identify a possible output display for this application (choose 1):

A. The code has an error and will not run

B.
```
<<<>>>
<<<>>>
```

C.
```
>>><<<
>>><<<
```

D.
```
>>><<<
>>><<<
>>><<<
```

E.
```
><><><
```

[5 marks]

15. If line 05 is changed from "`range(n+1)`" to "`range(n+1,0)`" what will happen (choose1)?

A. The code still has an error will not run
B. Only a line of > symbols are output
C. Only a square of > symbols are output
D. Only a rectangle of > symbols are output
E. Only a rectangle of < symbols are output

[5 marks]

16. What will be printed out when you run the following code (choose 1)?

```
anInt = 0
for i in range(3):
    anInt = anInt + 1
print("anInt = " + str(anInt))
```

A. `anInt = 0`
B. `anInt = 1`
C. `anInt = 2`
D. `anInt = 3`
E. There will be a run-time error

[5 marks]

17. What will be printed out when you run the following code (choose 1)?

```
n = 3
i = 0
while i >= 2:
   n = n + n
   i += 1
print("The value of n = " + str(n))
```

A. There will be a run-time error
B. `The value of n = 3`
C. `The value of n = 6`
D. `The value of n = 12`
E. The loop will never finish running and nothing will be printed

[5 marks]

The following code is used for questions 18, 19 and 20.

It is part of a program which interacts with files.

```
def my_function(dirname, search):
  files = os.listdir(dirname)
  for file in files:
    path = dirname + "\\" + file
    if os.path.isdir(path):
      print(path)
      my_function(path, search)
    elif path.endswith(".py"):
      if search in file.lower():
        print("FOUND: " + path)

try:
  root_path = os.curdir
  search = input("Filename? ").lower()
  if os.path.isdir(root_path):
    my_function(root_path, search)
except OSError as err:
  print(err)
  print("Stopping, can't access files.")
```

18. What does this code do (choose 2)?

A. It searches for Python files
B. It lists any files it finds
C. It deletes any files that it finds
D. It searches for files with names that match the search string
E. It searches for files with names that contain the search string

[5 marks]

19. What programming techniques are used in this code (choose 2)?

A. Debugging
B. Exceptions
C. Boolean variables
D. Sets
E. Recursion

[5 marks]

20. What would happen if the line

```
elif path.endswith(".py"):
```

in the middle of the program, was changed to

```
else:
```

(choose 1)?

A. The code would not run because of a syntax error
B. The code would still work but there would be a run-time error
C. The code would still work because this line does nothing
D. The code would still work but but for any files, rather than a specific type of file
E. The code would still work but only for files in the current folder

[5 marks]