FACULTY OF LIBERAL ARTS & SCIENCES

Campus	Maritime Greenwich
School	Computing & Mathematical Sciences
Level	4
Academic Stage	Undergraduate
TITLE OF PAPER	Programming Foundations – MOCK PAPER 2
COURSE CODE	COMP1753
Time	1 hour 30 minutes

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 enter your solutions in the "mock exam 2" submission link.

Answer all questions

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

   A. `more`
   B. `else`
   C. `do`
   D. `or`
   E. `but`

   [5 marks]

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

   A. `2a_list`
   B. `a_list2`
   C. `to_a_list`
   D. `#a_list`
   E. `a list`

   [5 marks]

3. How many times will `____` appear if `lines` is called with the parameter `arg` being set to 7 (choose 1)?

```
def lines(arg):
    while arg <= 10:
        print("____")
        arg += 1
```

   A. `____` will not appear
   B. `____` will appear 2 times
   C. `____` will appear 3 times
   D. `____` will appear 4 times
   E. `____` will go on printing forever

   [5 marks]

4. The function below is designed to print a list of items. Optionally the programmer can pass a header string as a second parameter which will get printed out before the list. Which lines need to be corrected to fix any syntax errors make the code work correctly (choose 2)?

```
01  def print_items(items, header=None):
02      """ print out a list of items """
03      if headr != None:
04          print(header)
05      for i in list:
06          print(i)
07      print()
```

A. Line 02
B. Line 03
C. Line 04
D. Line 05
E. Line 06

[5 marks]

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

```
number = [10, 20, 30, 40]
print(number[1] + number[2])
```

A. 30
B. 1020
C. 50
D. 2030
E. There will be a run-time error

[5 marks]

6. Assuming `bool1` is set to `True` , `bool2` is set to `False`, and `bool3` is set to `False`, which of the following expressions evaluate to `True` (choose 2):

A. `bool1 and bool2`
B. `bool2 or not bool3`
C. `bool2 and not bool3`
D. `bool1 and bool2 and bool3`
E. `bool1 or bool2 or bool3`

[5 marks]

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

```
def print_calc():
  an_int = calculate(5)
  print(an_int)

def calculate(arg):
  if arg >= 4:
    return arg * 2
  elif arg <= 5:
    return arg * 3
  else:
    return arg * 4
```

A. 5
B. 10
C. 15
D. 20
E. There will be a run-time error

[5 marks]

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

A. `=!`
B. `*=`
C. `-`
D. `$`
E. `£`

[5 marks]

9. Identify all correct list declarations (choose 2).

A. `symbols = []`
B. `symbols = "Alpha", "Beta", "Gamma"`
C. `symbols = ("Alpha", "Beta", "Gamma")`
D. `symbols = ["Alpha", "Beta", "Gamma"]`
E. `symbols = ["Alpha"],["Beta"],["Gamma"]`

[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. What will be printed out if this code is run (choose 1)?

```
fruit = ["apple", "banana", "onion"]
print(fruit[1])
```

A. `apple`
B. `"apple"`
C. `banana`
D. `"banana"`
E. There will be a run-time error because onion is not a fruit

[5 marks]

The following code is used for questions 12 and 13.

```
01      n = 5
02      output = ""
03      for i in range(n):
04        for j in range(i+1):
05          output += "*"
06          output += "="
07        output += "\n"
08      print(output)
```

12. What will be output when the code is run (choose 1)?

A.
```
*=
**==
***===
****====
*****=====
```

B.
```
*=
*=*=
*=*=*=
*=*=*=*=
*=*=*=*=*=
```

C.
```
*=*=*=*=*=
*=*=*=*=*=
*=*=*=*=*=
*=*=*=*=*=
*=*=*=*=*=
```

D.
```
          *=
        *=*=
      *=*=*=
    *=*=*=*=
  *=*=*=*=*=
```

E. There will be a run-time error

[5 marks]

13. If line `07` is deleted and `n` is set to `2`, what will be output when the code is run (choose 1)?

A.
```
**==
```

B.
```
***===
```

C.
```
*=*=*=
```

D.
```
*=*=
*=*=
```

E. There will be a run-time error

[5 marks]

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

```
an_int = 1
for i in range(5):
    an_int = an_int * i
print(f"an_int = {an_int}")
```

A. There will be a run-time error
B. `an_int = 0`
C. `an_int = 1`
D. `an_int = 6`
E. `an_int = 24`

[5 marks]

The following code is used for questions 15 and 16. It is part of a program which calculates the cost of pairs of shoes.

The user inputs the size and number of pairs that they want and the program calculates the cost and prints the result.

```
size = int(input("What size shoes? "))
if size < 4 or size > 8:
    print("Size " + str(size) + " not available")
    return
number = int(input("How many pairs? "))
if number <= 0:
    print("Please enter a positive number")
    return
cost = 0
if size == 4:
    cost = 20
elif size == 5:
    cost = 25
else:
    cost = 30
cost *= number
if number >= 2: # discount
    cost -= 5

print(f"That will be £{cost:.2f}")
```

15. What size shoes are available (choose 1)?

A. All sizes greater than and including 4
B. Sizes 20, 25 and 30
C. Sizes 4 and 5
D. Sizes 4, 5 and 6
E. Sizes 4, 5, 6, 7 and 8

[5 marks]

16. What is the output if the user chooses 2 pairs of size 5 (choose 1)?

A. `That will be £25.00`
B. `That will be £40.00`
C. `That will be £45.00`
D. `That will be £50.00`
E. `Size 5 not available`

[5 marks]

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

```
n = 2
for i in range(2):
   n = n * n
print(f"The value of n = {n}")
```

A. `The value of n = 2`
B. `The value of n = 4`
C. `The value of n = 8`
D. `The value of n = 16`
E. `The value of n = 32`

[5 marks]

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

It is part of a program which interacts with the user to generate passwords.

```
while True:
    strength = int(input("Strength [0 to terminate]? "))
    if strength == 0:
        break
    if strength > 10:
        length = 20
    else:
        length = strength*2
    letters = "abcdefghijklmnopqrstuvwxyz"
    characters = letters
    if strength >= 2:
        characters += letters.upper()
    if strength >= 5:
        characters += "0123456789"
    if strength >= 7:
        characters += punctuation
    password = ""
    for i in range(length):
        r = randint(0, len(characters)-1)
        password += characters[r]
    print(f"Your password is {password}")
```

18. What statements describe the program's functionality (choose 2)?

    A. It runs a loop which generates random passwords, each 10 or 20 characters long
    B. It prompts the user for password strength and uses the response to determine how long and how complex the password is
    C. It terminates when the user enters 0 for the password strength
    D. It terminates if the user enters a number above 10
    E. It uses a mixture of letters, numbers and punctuation for every password

[5 marks]

19. If the program generates the password "wgWKjk", what strength did the user choose (choose 1)?

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

[5 marks]

20. Suppose that

```
if strength >= 5:
```

near the middle of the program, is replaced by

```
elif strength >= 5:
```

Which of the following strength values would then generate passwords which include numbers (choose 1)?

    A. 5
    B. 7
    C. 9
    D. 11
    E. None of them

[5 marks]

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Answer Sheet

TITLE OF PAPER COMP1753 Programming Foundations

Your Full Name (please use Block Capitals) : _____

Your Student ID (e.g 000123456): _____

Please circle all correct answers

1. A B C D E
2. A B C D E
3. A B C D E
4. A B C D E
5. A B C D E
6. A B C D E
7. A B C D E
8. A B C D E
9. A B C D E
10. A B C D E
11. A B C D E
12. A B C D E
13. A B C D E
14. A B C D E
15. A B C D E
16. A B C D E
17. A B C D E
18. A B C D E
19. A B C D E
20. A B C D E

Make sure you submit your answers to the online system too, or you will FAIL THE EXAM. See the front page of the exam for details.