Enrollment No.....................................

Faculty of Engineering

End Sem (Even) Examination May-2019

OE00018 Python Essentials

Programme: B.Tech.   Branch/Specialisation: All

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1   i.   What will be the output of the following expression? **4**1**2**   **1**
           (a) 16   (b) 4   (c) 8   (d) 1

  ii.   What is the result of the expression if x=15 and y=12: **x & y**   **1**
           (a) b1101   (b) 0b1101   (c) 12   (d) 1101

  iii.   What will be the output of the following program?   **1**

```
if (20 < 1) and (1 < -1):
    print("Hello")
elif (20 > 10) or False:
    print('Hii)
else:
    print('Bye')
```

           (a) Hello   (b) Hii   (c) Bye   (d) Error

  iv.   If a function does not return any value, then by default which type   **1**
       of value is returned by the function?
           (a) int   (b) double   (c) str   (d) None of these

  v.   The inbuilt method readlines() is used to: **1**
           (a) Read an entire file as a string
           (b) Read one line at a time
           (c) Read each line in a file as an item in a list
           (d) None of these

  vi.   The close ( ) method is used to conserve memory because: **1**
           (a) It closes all unused memory created by Python
           (b) It deletes all the text related to a file
           (c) It compresses a file
           (d) It removes the reference created by files open( ) function.

vii. Which method should be used to create default values in a class **1** constructor?

(a) _doc_   (b) _new_   (c) _init_   (d) _del_

viii. If Ob1 is an instance of a class A, which statement can be used to **1** check whether the object Ob1 is an instance of Class A?

(a) Ob1.isinstance(A)   (b) A.isinstance(Ob1)

(c) isinstance(Ob1,A)   (d) isinstance(A,Ob1)

ix. Which of the following is not a standard exception in Python? **1**

(a) NameError   (b) IOError

(c) AssignmentError   (d) ValueError

x. Which of these is not true about Tuple? **1**

(a) Mutable Data Type

(b) Allow duplicate value

(c) Ordered collection of elements

(d) Immutable data type

Q.2 i. What is numeric literal? Give an example. **2**

ii. Explain the arithmetic operators in Python with an example. **3**

iii. What are the different data types supported by Python, explain with **5** examples.

OR iv. Write a program to read a four-digit number through the keyboard **5** and calculate the sum of its digits.

Q.3 i. What is Lambda function? How it useful in python programming, **4** Explain with example.

ii. Write a Python program to find the factorial of a given number **6** without recursion and with recursion.

OR iii. Write a Python program to generate first 'N' Fibonacci numbers. **6**

Q.4 i. State the syntax to open, write text and close a file. **3**

ii. What is binary file? List its applications. **7**

OR iii. Tabulate the different modes for opening a file and explain the **7** same.

Q.5 i. State the syntax to define a class and add method in a class. **4**

ii. Explain three feature of OOP's using Python program. **6**

OR iii. Write a program to create a class **Circle.** Perform the following **6** operations on it.

(a) Define the attributes **radius**.

(b) Define the constructor with one argument containing radius.

(c) Define the method named **get_radius ()** which returns the radius of the circle.

(d) Define the method named **calc_area()** which return the area of the circle.

Q.6 Attempt any two:

i. How Python handles exception? Explain with an example. **5**

ii. Differentiate between tuples and sets based on their mutability, **5** orderedness and uses.

iii. How can all keys and values of a dictionary be traversed? Explain **5** with an example.

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Marking Scheme
OE00018 Python Essentials

Q.1 i. What will be the output of the following expression? **4**1**2** **1**
(b) 4

ii. What is the result of the expression if x=15 and y=12: **x & y** **1**
(c) 12

iii. What will be the output of the following program? **1**
```
if (20 < 1) and (1 < -1):
    print("Hello")
elif (20 > 10) or False:
    print('Hii)
else:
    print('Bye')
```
(b) Hii

iv. If a function does not return any value, then by default which type of value is returned by the function? **1**
(d) None of these

v. The inbuilt method readlines() is used to: **1**
(c) Read each line in a file as an item in a list

vi. The close ( ) method is used to conserve memory because: **1**
(d) It removes the reference created by files open( ) function.

vii. Which method should be used to create default values in a class constructor? **1**
(c) _init_

viii. If Ob1 is an instance of a class A, which statement can be used to check whether the object Ob1 is an instance of Class A? **1**
(c) isinstance(Ob1,A)

ix. Which of the following is not a standard exception in Python? **1**
(c) AssignmentError

x. Which of these is not true about Tuple? **1**
(a) Mutable Data Type

Q.2 i. Numeric literal   1 mark   **2**
An example   1 mark

ii. Arithmetic operators in Python   2 marks   **3**
Example.   1 mark

iii. Data types supported by Python with examples **5**
1 mark for each type   (1 mark * 5)

OR iv. Program to read a four-digit number through the keyboard and calculate the sum of its digits. **5**

Q.3 i. Lambda function   1 mark   **4**
Useful in python programming 1 mark
Example.   2 marks

ii. Python program to find the factorial of a given number **6**
without recursion   3 marks
with recursion.   3 marks

OR iii. Python program to generate first 'N' Fibonacci numbers. **6**
User input   2 marks
Remaining program   4 marks

Q.4 i. Syntax to open   1 mark   **3**
Write text   1 mark
Close a file.   1 mark

ii. Binary file   3 marks   **7**
Its applications.
1 mark for each application (1 mark * 4) 4 marks

OR iii. For writing modes name   2 marks   **7**
Explanation of each   5 marks

Q.5 i. State the syntax to define a class 2 marks **4**
Add method in a class.   2 marks

ii. Three feature of OOP's using Python program **6**
2 marks for each   (2 marks * 3)

OR iii. Write a program to create a class **Circle.** Perform the following operations on it. **6**
(a) Define the attributes **radius**.   1 mark
(b) Define the constructor with one argument containing radius
                             1 mark
(c) Define the method named **get_radius** () which returns the radius of the circle. 2 marks
(d) Define the method named **calc_area**() which return the area of the circle. 2 marks

Q.6 Attempt any two:
i. Python handles exception   2 marks   **5**
Example.   3 marks

ii.	Differences based on their mutability, orderedness and uses.		**5**
	Tuples	2.5 marks	
	Sets	2.5 marks	
iii.	All keys and values of a dictionary be traversed		**5**
		3 marks	
	Example.	2 marks	

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