Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Science / Engineering

End Sem (Odd) Examination Dec-2022

CA3EL06 Python Programming

Programme: BCA / BCA-MCA Integrated | Branch/Specialisation: Computer Application

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. Standard python compiler is written in _____ language. **1**

(a) VC++ (b) C++ (c) C (d) PERL

ii. Python was created in the early_____ and designed by _____. **1**

(a) 1991 and Guido van Rossum

(b) 1995 and James Gosling

(c) 1972 and Alan Kay

(d) 2004 and Martin Odersky

iii. In order to store values in terms of key and value, which data type is used? **1**

(a) List (b) Tuple

(c) Class (d) Dictionary

iv. What type of data is: a=[(1,1),(2,4),(3,9)]? **1**

(a) Array of tuples (b) List of tuples

(c) Tuples of lists (c) Invalid type

v. What arithmetic operators cannot be used with strings? **1**

(a) + (b) * (c) – (d) All of these

vi. What is the output of the following for loop and range() function- **1**

```
for num in range(-2,-5,-1):
    print(num, end=", ")
```

(a) -2, -1, -3, -4

(b) -2, -1, 0, 1, 2, 3

(c) -2, -1, 0

(d) -2, -3, -4

P.T.O.

vii. In python a module is- **1**
(a) A file containing python definitions and statements intended for use in other python programs.
(b) A separate block of code within a program.
(c) One line of code in a program.
(d) A file that contains documentation about functions in python.

viii. Select which true for python function- **1**
(a) A function is a code block that only executes when it is called.
(b) Python function always returns a value.
(c) A function only executes when it is called and we can reuse it in a program
(d) All of these

ix. Which of the following is incorrect file handling mode in python- **1**
(a) r (b) x (c) t+ (d) b

x. In python3, which functions are used to accept input from the user- **1**
(a) input() (b) raw_input()
(c) rawinput() (d) string()

Q.2 i. What are the rules for local and global variables in python? **2**
ii. Write any three differences between python 2 and python 3. **3**
iii. List at least five features of python programming languages. **5**
OR iv. Write the steps to install and run python in windows or ubuntu operating system. Write a program to print an inverted star pattern. **5**

Q.3 i. What is the significant difference between list and dictionary? **2**
ii. Explain the types of methods available in python with a suitable example of each method. Write a program to add a key-value pair to the dictionary. **8**
OR iii. Explain any five basic operators in python with examples. Explain precedence and associativity of operators in python. **8**

Q.4 i. How do you traverse (iterate) through a dictionary object in python? **3**
ii. Explain the "while loop" in python. Write a program that asks the user how many Fibonacci numbers to generate and then generates them. **7**

OR iii. Explain break, continue and pass statements in python with an example. **7**

Q.5 i. What is module? What are the advantages of using module? **4**
ii. What is recursive function? Write a python program to calculate factorial of a number using recursive function. **6**
OR iii. Explain various functions of math, random and time module with suitable example. **6**

Q.6 Attempt any two:
i. What is exception handling? List and explain any five exceptions in python. **5**
ii. Explain open() and close () methods for openings and closing a file. Write a python program to count the number of lines in a text file. **5**
iii. Discuss the following methods associated with the file object: **5**
(a) read() (b) readline()
(c) readlines() (d) tell()
(e) seek() (f) write()

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Marking Scheme
CA3EL06 Python Programming

Q.1	i)	Answer: C	**1**
	ii)	Answer: A	**1**
	iii)	Answer: D	**1**
	iv)	Answer: B Explanation: The variable a has tuples enclosed in a list making it a list of tuples.	**1**
	v)	Answer: C	**1**
	vi)	Answer :D	**1**
	vii)	Answer: A	**1**
	viii)	Answer: D	**1**
	ix)	Answer: C	**1**
	x)	Answer: A	**1**
Q.2	i.	What are the rules for local and global variables in Python? Explain rules for both the variables- 2 Mark	**2**
	ii.	What are the Differences between Python 2 and Python 3 (Any 3 difference) ? Difference between Python 2 and Python 3 – 3 Mark	**3**
	iii.	List the features of Python programming languages (at least 5) Features of python programming with example (At least 5)- 5 Mark	**5**
OR	iv.	Write the steps to install and run python in windows or ubuntu operating system. Write a program to print an Inverted Star Pattern. Write the steps to install and run python in windows or ubuntu operating system. - 2 Mark Write a program to print an Inverted Star Pattern. – 3 Mark	**5**
Q.3	i.	What is the significant difference between list and dictionary? What is the significant difference between list and dictionary- 2 Mark	**2**
	ii.	Explain the types of methods available in python with a suitable example of each method. Write a program to add a Key-Value Pair to the Dictionary. Types of methods available in python with example - 5 Mark Syntax and variable declaration -1 Mark Dictionary Logic – 2 Mark	**8**
OR	iii.	Explain the Basic Operators in Python With Examples.(At least 5) Explanation of Operators and examples – 5 Mark (1 Mark each) Explanation of Precedence and Associativity of Operators in Python- 3 Mark	**8**
Q.4	i.	How do you traverse through a dictionary object in Python? Explanation of dictionary : 1 Mark Syntax: 2 Mark “for” and “in” loop for traversing the dictionary object. a_dict = {'color': 'blue', 'fruit': 'apple', 'pet': 'dog'} >>> for key in a_dict: print(key) output: color fruit pet	**3**
	ii.	Explain the “**while loop**” in python. Write a program that asks the user how many Fibonacci numbers to generate and then generates them Explain while loop – 2 Mark Declaration and syntax - 1 Mark Logic – 4 Mark nterms = int(input("How many terms? ")) # first two terms n1, n2 = 0, 1 count = 0 # check if the number of terms is valid if nterms <= 0:	**7**

		print("Please enter a positive integer")
		elif nterms == 1:
		print("Fibonacci sequence upto",nterms,":")
		print(n1)
		else:
		print("Fibonacci sequence:")
		while count < nterms:
		print(n1)
		nth = n1 + n2
		# update values
		n1 = n2
		n2 = nth
		count += 1	

OR	iii.	Explain break, continue and pass statements in Python with an example. Break statement and example – 3 Mark, Continue statement with example – 2 Mark Pass statement with example – 2 Mark	**7**
Q.5	i.	what is module? what are the advantages of using module? What is module – 2 Marks advantages– 2 Marks	**4**
	ii.	what is recursive function ? write a python program to calculate factorial of a number using recursive function? Recursive function – 2 Mark input and syntax – 2 Mark Logic – 2 Mark	**6**
OR	iii.	Explain various functions of math, random and time module with suitable example? Functions of math module with example – 2 Mark (without example – 1 Mark) Functions of random module with example – 2 Mark (without example – 1 Mark) Functions of time module with example – 2 Mark (without example – 1 Mark)	**6**

Q.6			
	i.	What is exception handling? List and explain any five exceptions in Python. Exception handling – 2 Mark List and explain any five exceptions in Python.- 3 Mark (without explanation- 1 mark)	**5**
	ii.	Explain open() and close () methods for openings and closing a file. Write a Python program to count the number of lines in a text file. Explain open() and close () methods- 2 Mark Syntax and variable define – 1 Mark Logic / output – 2 Mark	**5**
	iii.	Discuss the following methods associated with the file object a) read() b) readline() c) readlines() d) tell() e) seek() f) write() Explanation - 5 Mark (1 Mark each)	**5**

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