UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Sem Examination, May 2021

Course: Python Programming CSIB 1002 **Semester:** II
Programme: B.Tech CSLLB
Time: 03 hrs. **Max. Marks: 100**

SECTION A

1. **Each Question will carry 5 Marks.**
2. **Instruction: Select the correct answer(s)**

S. No.		Marks	CO

Q 1	(a) Consider the following sequence of statements:
	      $n = 10$
	      $m = n$
	Following the execution of these statements, Python has created how many objects and how many references?
	  A. 2 objects , 2 references
	  B. 1 object , 2 references
	  C. 2 objects , 1 references
	  D. It will lead to compiler error
	
	(b) In how many test cases given in the choices, the regular expression Aa?? will be matched-
	  A. A
	  B. Aa
	  C. BaA
	  D. aaa
		2.5+2.5	CO1

Q 2	Predict the correct output for the code given below-		
	``
class Employee:
    raise_amount = 1.04

    def apply_raise(self):
        self.pay = self.pay * self.raise_amount

    def __init__(self,name,pay):
        self.name = name
        self.pay = pay

emp_1 = Employee('Corey',50000)
emp_2 = Employee('John',40000)
emp_1.raise_amount = 1.03   #statement 1
Employee.raise_amount = 1.02   #statement 2
print(emp_1.raise_amount)   #statement 3
print(emp_2.raise_amount)   #statement 4
```

A.  #statement3 will print 1.02, #statement4 will print 1.03
B.  #statement3 will print 1.03, #statement4 will print 1.03
C.  #statement3 will print 1.02, #statement4 will print 1.02
D.  #statement3 will print 1.03, #statement4 will print 1.02 | 5 | CO2 |
| Q 3 | a)  Serialization or marshalling is the process to convert a data structure into a linear form that can be stored or transmitted over a network.
b)  The terms pickling and unpickling used to refer to serializing and deserializing with the Python pickle module.
c)  The process of taking a stream of bytes and converting it back into a data structure, is called deserialization or unmarshalling.
d)  Python offers the below marshal, json, pickle that allow you to serialize and deserialize objects

A.  All are true
B.  a,b,c
C.  a,b
D.  a,c,d | 5 | CO3 |
| Q 4 | Choose correct **statement/statements-**
A.  If the object passed to a function is of immutable type, the passing acts like pass by value
B.  If the object passed to a function is of mutable type, the passing acts like pass by reference.
C.  If the object passed to a function is of mutable or immutable type, it acts like pass by reference
D.  If the object passed to a function is of mutable or immutable type, it acts like pass by value | 5 | CO1 |
| Q 5 | Choose correct output- | 5 | CO1 |

| | | | |
|---|---|---|---|
| | ```python
try:
    print("Hello world!", end=" ")
except:
    print('Error occurend', end= " ")
except(TypeError):
    print("Invalid Datatype", end=" ")
except(ValueError):
    print("Invalid Value", end= " ")
finally:
    print("Last block")
```<br><br>A.  Hello world! Last block<br>B.  Last block<br>C.  Compiler error<br>D.  Hello world! | | |
| Q 6 | Choose the correct output-<br><br>```python
x = [12,34]
l1=(list(map(str, x)))
new= (" ".join(l1))
print(len(new))
```<br><br>A.  4<br>B.  5<br>C.  6<br>D.  7 | 5 | CO2 |

<div align="center">SECTION B</div>

1. Each Question will carry 10 Marks.
2. Write short / brief notes. Write code wherever needed.

Q 7	Write a program to accept following details using GUI (tkinter library)- 1. Name of the student (using Textbox) 2. Gender (Using RadioButton) 3. Marks of three subjects (using Textbox) Compute the percentage of the student based on the marks obtained and display it in a Textbox	10	CO3
Q 8	a) Write the code to read the text file and then count the lines in the file. b) Consider the file with records of roll no, student name and marks in the order given below: 1 Rahul 23 2 Suraj 45 ... 10 Krishna 61 write a function to print the name of the student with highest marks.	3+7	CO1
Q 9	a) "Python does not support method overloading". Justify the statement. b) Create a class Computer with parameterized constructor to initialize the data members; Company_name, RAM (RAM capacity), HDD (Hard_Disk_capacity), and Price. Also, Implement methods for the below functionalities- - To Increase the price of computers by 2%.	3+7	CO2

	- To display the count of the total number of Computers created.		
Q 10	Write a guessing game program - Input an integer number from the user. If the number is odd and lies between 10 and 20 then display the user - "You won the game!" and don't ask for the number again. Users should get a maximum of 3 chances to win. If in all three attempts, the user fails, display the user - "You lost the game!" **Don't use exit(), break, continue keyword in the program.**	**10**	**CO1**
Q 11	Discuss the use of Lambda function in Python. Write a Python program to sort a list = [['java', 1995], ['c++', 1983], ['python', 1989]] by **year** using lambda function.	**3+7**	**CO1**

<div align="center">SECTION-C</div>

1. Each Question carries 20 Marks.

Q 12	Refer the given excel file and perform various operations using pandas library:		

0	GOOGL	27.82	87	845	larry page
1	WMT	4.61	484	65	n.a.
2	MSFT	-1	85	64	bill gates
3	RIL	not available	50	1023	mukesh ambani
4	TATA	5.6	-1	n.a.	ratan tata

	a) Read the above excel file in python.
	 b) How do I write this file to a new file "new.csv"?
	 c) Include column names in this file. Use 'ticker', 'eps', 'revenue', 'price', 'people' as column names.
	 d) Fill NAN values using a suitable approach.
	
	 OR
	
	 a) Convert numbers =[1, 2.0, 3] to numpy array and convert all elements to string type
	 b) Which method is used to perform matrix multiplication using numpy?
	        If a= [[0, 1, 2, 3],
	             [4, 5, 6, 7],
	             [8, 9, 10, 11]
	       Find a.min(axis=1)
	 c) Find output of a<35, if a= [61, 22, 32, 45]
	 d) Write a NumPy program to generate an array of 15 random numbers from a standard normal distribution
		4*5	**CO4**