

Name:	
Enrolment No:	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2019**

<b>Course: Interactive Programming through Python</b>	<b>Semester: V</b>
<b>Programme: B.Tech CSE (IOT,ECRA,OGI,MC)</b>	<b>Time: 03 hrs.</b>
<b>Course Code: CSEG 3017</b>	<b>Max. Marks: 100</b>
<b>Instructions: Attempt all questions</b>	

**SECTION A**

S. No.		Marks	CO
Q1.	Define tuple. How tuples are different from lists? [2+2]	4	CO1
Q2.	Explain use of regular expressions in python. Write a python code to check if string starts from either "A" or "a". [2+2]	4	CO5
Q3.	Define different types of constructors in python class with example.	4	CO3
Q4.	Define Lambda function. Write a Lambda function to find simple interest. [2+2]	4	CO2
Q5.	Discuss membership and identity operators in python with example.	4	CO1

**SECTION B**

Q6.	Create database connectivity with python. Write a python script to perform the queries given below in a single file. [2*5] a. Create database connection. b. Create a table named <b>book_info</b> with the following fields (b_name, author, price, Year_of_Publication) c. Insert records of three books into the <b>book_info</b> table d. Select books where price of book is less than 500 e. Display book details year wise.	10	CO3
Q7.	Assume a file movie.txt with movie details, separated by spaces, in given format (movie_name director_first_name production_cost(in crores) Year_of_release ): Example: Lagaan Ashutosh 98 2001 Dangal Nitesh 110 2016 ..... Open file movie.txt and write python script to: [2*5] a. Count number of movies in the file. b. Add a new movie detail (War Amit 180 2019) at the end of file. c. Display details of all movies where production cost is more than 80 Crores d. Display first five movie details.	10	CO2

	e. Display director name who has worked in more than two movies.		
Q8.	<p>a) Differentiate numpy arrays and Pandas Series object with example. [ 5 ]</p> <p>b) For the given index and data:</p> <p>a 10 b 90 c 75 d 45 e 67</p> <p>Write python script to: [1*5]</p> <p>i) Create a Series object, s1, to store the details as mentioned above. ii) display values where data is greater than 45. iii) Create new series which contains cube of each element from s1. iv) Update last three entries of series s1 with new value 95 v) Change all the indexes of s1 with new indexes (1,2,3,4,5).</p>	10	CO5
Q9.	<p>Create a dictionary with employee details (empid, empname, salary and experience). Write python script to: [2*5]</p> <p>a) Insert record of any 5 employees b) Display empid, employee name and salary of all employees. c) Update salary of each employee by 10%. d) Display employee details with maximum experience. e) Delete employee details from the dictionary where empid is 2513.</p> <p style="text-align: center;"><b>OR</b></p> <p>Create a dictionary whose keys are month names and whose values are number of days in the corresponding months. [2*5]</p> <p>a) Ask the user to enter a month name and use the dictionary to tell how many days are there in the month. b) Print out all keys in alphabetical order c) Print out all the months with 31 days. d) Update the number of days in month "Feb" from 28 to 29. e) Print out the (key-value) pairs sorted by the number of days in each month.</p>	10	CO1
<b>SECTION-C</b>			
Q10.	<p>a) i) Discuss any three ways of creating dataframe. [6+4] ii) Assume dataframe of students with details as rollno, name, age and cgpa and perform following operations:</p> <p>a. Display name and cgpa of all students b. Display last three student details.</p> <p>Write python script to call functions with suitable structure and implement following functions : [5+5]</p>	20	CO5, CO3

	<p>i) Which takes a list of integer values as argument and returns sum of cubes of all values.</p> <p>ii) Which takes a string as input and returns character with maximum frequency.</p>		
Q11.	<p>a) Discuss different types of inheritances in python with example. [10]</p> <p>b) Create a class <b>Computer</b> with: [2.5 * 4 = 10]</p> <p>i) parameterized constructor to initialize the data members:</p> <ul style="list-style-type: none"> <li>• Company_name</li> <li>• RAM (RAM capacity)</li> <li>• HDD (Hard_Disk_capacity)</li> <li>• Price</li> </ul> <p>Also implement following methods in the class:</p> <p>ii) To display all details of the computer.</p> <p>iii) Update price of computer by given percentage</p> <p>iv) To display count of number of Computers created.</p> <p style="text-align: center;"><b>OR</b></p> <p>a) Discuss different types of access specifiers in python class using suitable examples. [10]</p> <p>b) Assume a company TeleMart with some employees. Using <b>Class</b> and a <b>setter method</b>, initialize the employee details: (name, empid, experience in years, salary) of n number of employees and implement following methods: [2.5* 4=10]</p> <ol style="list-style-type: none"> <li>1) To Increment salary of an employee by given percentage</li> <li>2) To display all details of an employee</li> <li>3) To print count of all employees created</li> <li>4) To find average salary of all employees</li> </ol>	<b>20</b>	<b>CO4</b>