Model Question Paper-1 with effect from 2018-19 (CBCS Scheme)

USN

Fifth Semester B.E. Degree Examination

Application Development using Python

TIME: 03 Hours   **Max. Marks: 100**

Note: Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

		Module – 1	
Q.1	**(a)**	Explain the math operators in Python from highest to lowest Precedence with an example for each. Write the steps how Python is evaluating the expression (5 - 1) * ((7 + 1) / (3 - 1)) and reduces it to a single value.	(6 Marks)
	(b)	Define a Python function with suitable parameters to generate prime numbers between two integer values. Write a Python program which accepts two integer values m and n (note: m>0, n>0 and m < n) as inputs and passthesevalues to the function. Suitable error messages should be displayed if the conditions for input values are not followed.	(8 Marks)
	(c)	Explain Local and Global Scope in Python programs. What are local and global variables? How can you force a variable in a function to refer to the global variable?	(6 Marks)
		OR	
Q.2	**(a)**	What are Comparison and Boolean operators? List all the Comparison and Boolean operators in Python and explain the use of these operators with suitable examples.	(6 Marks)
	(b)	Define a Python function with suitable parameters to generate first N Fibonacci numbers. The first two Fibonacci numbers are 0 and 1 and the Fibonacci sequence is defined as a function F as $F_n = F_{n-1} + F_{n-2}$. Write a Python program which accepts a value for N (where N >0) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed.	(8 Marks)
	(c)	What is Exception Handling? How exceptions are handled in Python? Write a Python programwith exception handling code to solve **divide-by-zero** error situation.	(6 Marks)
		Module – 2	
Q.3	**(a)**	What is Dictionary in Python? How is it different from List data type? Explain how a forloop can be used to traverse the keys of the Dictionary with an example.	(6 Marks)
	(b)	Explain the methods of List data type in Python for the following operations with suitable code snippets for each. (i) Adding values to a list ii) Removing values from a list (iii) Finding a value in a list iv) Sorting the values in a list	(8 Marks)
	(c)	Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.	(6 Marks)
		OR	
Q.4	**(a)**	What is the difference between **copy.copy( )** and **copy.deepcopy( )** functions applicable to a List or Dictionary in Python? Give suitable examples for each.	(6 Marks)
	(b)	Discuss the following Dictionary methods in Python with examples. (i) get() (ii) items() (iii) keys() (iv) values()	(8 Marks)
	(c)	Explain the various string methods for the following operations with examples. (i) Removing whitespace characters from the beginning, end or both sides of a string. (ii) To right-justify, left-justify, and center a string.	(6 Marks)

		Module – 3	
Q.5	**(a)**	Write a Python Program to find an American phone number (example: 415-555-4242) in a given string using Regular Expressions.	(6 Marks)
	(b)	Describe the difference between Python **os** and **os.path** modules. Also, discuss the following methods of **os** module a) chdir() b) rmdir() c) walk() d) listdir() e) getcwd()	(7 Marks)
	(c)	Demonstrate the copy, move, rename and delete functions ofshutil module with Python code snippet.	(7 Marks)
		OR	
Q.6	**(a)**	Describe the following with suitable Python code snippet. (i) Greedy and Non Greedy Pattern Matching (ii) findall() method of Regex object.	(7 Marks)
	(b)	Explain the file Reading/Writing process with suitable Python Program.	(6 Marks)
	(c)	Define assertions. What does an assert statement in python consists of? Explain how assertions can be used in traffic light simulation with Python code snippet.	(7 Marks)
		Module – 4	
Q.7	**(a)**	Define classes and objects in Python. Create a class called Employee and initialize it with employee id and name. Design methods to: (i) setAge_to assign age to employee. (ii) setSalary_to assign salary to the employee. (iii) Display_to display all information of the employee.	(8marks)
	(b)	Illustrate the concept of **modifier** with Python code.	(5 Marks)
	(c)	Explain **init** and **__str__** method with an example Python Program.	(7 Marks)
		OR	
Q.8	**(a)**	Define polymorphism? Demonstrate polymorphism with function to find histogram to count the number of times each letter appears in a word and in a sentence.	(7 Marks)
	(b)	Illustrate the concept of **pure** function with Python code.	(6 Marks)
	(c)	Define Class Diagram. Discuss the need for representing class relationships using Class Diagram with suitable example.	(7 Marks)
		Module – 5	
Q.9	**(a)**	Explain the process of downloading files from the Web with the **requests** module and also saving downloaded files to the hard drive with suitable example program.	(8 Marks)
	(b)	Write a note on the following by demonstrating with code snippet. (i) Opening Excel documents with **openpyxl**. (ii) Getting Sheets from the Workbook. (iii)Getting Cells, Rows and Columns from the Sheets.	(7 Marks)
	(c)	Describe the getText() function used for getting full text from a .docx file with example code.	(5 Marks)
		OR	
Q.10	**(a)**	Explain how to retrieve a web page element from a **BeautifulSoup** Object by calling the **select** method and passing a string of a CSS selector for the element you are looking for with an example program.	(8 Marks)
	(b)	What is JSON? Briefly explain the **json** module of Python. Demonstrate with a Python program.	(6 Marks)
	(c)	Discuss the Creation, Encryption and Decryption of a PDF.	(6 Marks)

Table showing the Bloom's Taxonomy Level, Course Outcome and Programme Outcome			
Question		**Bloom's Taxonomy Level attached**	**Course Outcome**	**Programme Outcome**
Q.1	(a)	L2	CO1	PO1, PO2, PO3, PO12
	(b)	L3	CO1	PO1, PO2, PO3, PO12
	(c)	L2	CO1	PO1, PO2, PO3, PO12
Q.2	(a)	L2	CO1	PO1, PO2, PO3, PO12
	(b)	L3	CO1	PO1, PO2, PO3, PO12
	(c)	L2	CO1	PO1, PO2, PO3, PO12
Q.3	(a)	L1, L2	CO2	PO1, PO2, PO3, PO12
	(b)	L1, L2	CO2	PO1, PO2, PO3, PO12
	(c)	L3	CO2	PO1, PO2, PO3, PO12
Q.4	(a)	L1, L2	CO2	PO1, PO2, PO3, PO12
	(b)	L1, L2	CO2	PO1, PO2, PO3, PO12
	(c)	L2, L3	CO2	PO1, PO2, PO3, PO12
Q.5	(a)	L3	CO3	PO1, PO2, PO3, PO12
	(b)	L2	CO3	PO1, PO2, PO3, PO12
	(c)	L1, L2	CO3	PO1, PO2, PO3, PO12
Q.6	(a)	L2	CO3	PO1, PO2, PO3, PO12
	(b)	L3	CO3	PO1, PO2, PO3, PO12
	(c)	L1, L2	CO3	PO1, PO2, PO3, PO12
Q.7	(a)	L1,L3	CO4	PO1, PO2, PO3, PO12
	(b)	L2	CO4	PO1, PO2, PO3, PO12
	(c)	L1,L2	CO4	PO1, PO2, PO3, PO12
Q.8	(a)	L1,L3	CO4	PO1, PO2, PO3, PO12
	(b)	L2	CO4	PO1, PO2, PO3, PO12
	(c)	L1,L2	CO4	PO1, PO2, PO3, PO12
Q.9	(a)	L3	CO5	PO1, PO2, PO3, PO12
	(b)	L1,L2	CO5	PO1, PO2, PO3, PO12
	(c)	L2	CO5	PO1, PO2, PO3, PO12
Q.10	(a)	L3	CO5	PO1, PO2, PO3, PO12
	(b)	L1,L2	CO5	PO1, PO2, PO3, PO12
	(c)	L2	CO5	PO1, PO2, PO3, PO12

Bloom's Taxonomy Levels	**Lower order thinking skills**		
	Remembering(knowledge):L_1	Understanding Comprehension): L_2	Applying (Application): L_3
	Higher order thinking skills		
	Analyzing (Analysis): L_4	Valuating (Evaluation): L_5	Creating (Synthesis): L_6

Model Question Paper-1 with effect from 2020-21 (CBCS Scheme)

USN

Fifth Semester B.E. Degree Examination
APPLICATION DEVELOPMENT USING PYTHON

TIME: 03 Hours   **Max. Marks: 100**

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
        02.
        03.

		Module – 1	
Q.1	**(a)**	Write a python program to find the area of square, rectangle and circle. Print the results. Take input from user	6
	(b)	List and explain the syntax of all flow control statements with example.	8
	(c)	Illustrate the use of break and continue with a code snippet.	6
		OR	
Q.2	**(a)**	What are userdefined functions? How can we pass parameters in user defined functions? Explain with suitable example.	7
	(b)	Explain global statement with example.	8
	(c)	Write a function that computes and returns addition ,subtraction, multiplication , division of two integers.Take input from user.	5
		Module – 2	
Q.3	**(a)**	What is list?Explain the concept of list slicing with example.	6
	(b)	Explain references with example.	7
	(c)	What is dictionary?How it is different from list?Write a program to count the number of occurances of character in a string.	7
		OR	
Q.4	**(a)**	You are creating a fantasy video game. The data structure to model the player's inventory will be a dictionary where the keys are string values describing the item in the inventory and the value is an integer value detailing how many of that item the player has. For example, the dictionary value {'rope': 1, 'torch': 6, 'gold coin': 42, 'dagger': 1, 'arrow': 12} means the player has 1 rope, 6 torches, 42 gold coins, and so on.Write a function named displayInventory() that would take any possible "inventory" and display it like the following: Inventory: 12 arrow 42 gold coin 1 rope 6 torch 1 dagger Total number of items: 63	7
	(b)	List any six methods associated with string and explain each of them with example.	8

	(c)	Write a Python program to swap cases of a given string. Input: Java Output: jAVA	5
Module – 3			
Q.5	(a)	List and explain Shorthand code for common character classes .Illustrate how do you define your own character class?	7
	(b)	Explain the usage of Caret and dollar sign characters in regular expression.	6
	(c)	Write a python program to extract phone numbers and email addresses using regex	7
OR			
Q.6	(a)	How do we specify and handle absolute ,relative paths?	10
	(b)	Explain saving of variables using shelve module.	4
	(c)	With code snippet, explain reading, extracting and creating ZIP files	6
Module – 4			
Q.7	(a)	What is class? How do we define a class in python? How to instantiate the class and how class members are accessed?	8
	(b)	Write a python program that uses datetime module within a class , takes a birthday as input and prints user's age and the number of days, hours ,minutes and seconds until their next birthday.	7
	(c)	Explain __init__ and __str__ methods.	5
OR			
Q.8	(a)	Explain operator overloading with example.	7
	(b)	What are polymorphic functions? Explain with code snippet	7
	(c)	Illustrate the concept of inheritance with example	6
Module – 5			
Q.9	(a)	How do we download a file and save it to harddrive using request module?	6
	(b)	Write a python program to give search keyword from command line arguments and open the browser tab for each result page.	6
	(c)	Explain selenium's webdrive methods for finding elements	8
OR			
Q.10	(a)	Write a program that takes a number N from command line and creates an NxN multiplication table in excel spread sheet.	8
	(b)	Write short notes on i)Creating,copying and rotating pages with respect to pdf	6
	(c)	Write a program that find all the CSV files in the current working directory,read in the full contents of each file,write out the contents, skipping the first line, to a new CSV file.	6

Table showing the Bloom's Taxonomy Level, Course Outcome and Programme Outcome				
Question		**Bloom's Taxonomy Level attached**	**Course Outcome**	**Programme Outcome**
Q.1	(a)	L3	1	1,3,5
	(b)	L2	1	1,3,5
	(c)	L2	1	1,3,5
Q.2	(a)	L2	1	1,3,5
	(b)	L2	1	1,3,5
	(c)	L2	1	1,3,5
Q.3	(a)	L2	2	1,3,5
	(b)	L2	2	1,3,5
	(c)	L2	2	1,3,5
Q.4	(a)	L3	2	1,3,5
	(b)	L2	2	1,3,5
	(c)	L2	2	1,3,5
Q.5	(a)	L2	3	1,3,5
	(b)	L2	3	1,3,5
	(c)	L3	3	1,3,5
Q.6	(a)	L2	3	1,3,5
	(b)	L2	3	1,3,5
	(c)	L2	3	1,3,5
Q.7	(a)	L2	4	1,3,5
	(b)	L3	4	1,3,5
	(c)	L2	4	1,3,5
Q.8	(a)	L2	4	1,3,5
	(b)	L2	4	1,3,5
	(c)	L2	4	1,3,5
Q.9	(a)	L2	5	1,3,5
	(b)	L3	5	1,3,5
	(c)	L2	5	1,3,5
Q.10	(a)	L3	5	1,3,5
	(b)	L2	5	1,3,5
	(c)	L2	5	1,3,5

Bloom's Taxonomy Levels	**Lower order thinking skills**		
	Remembering(knowledge):L_1	Understanding Comprehension): L_2	Applying (Application): L_3
	Higher order thinking skills		
	Analyzing (Analysis): L_4	Valuating (Evaluation): L_5	Creating (Synthesis): L_6