

End-Term Examination
(CBCS)(SUBJECTIVE TYPE)(Offline)
Course Name:<BTECH>, Semester:<I>
(December, 2024)

Subject Code: BAI 101	Subject: PROGRAMMING WITH PYTHON
Time :3 Hours	Maximum Marks :60

Note: Q1 is compulsory. Attempt one question each from the Units I, II, III & IV.

Q1		(2.5*8 =20)	CO Mapping
	a) Write a Python program to print the prime numbers of up to a given number, accept the number from the user.		CO1
	b) Write a Python program that accepts a string and calculates the number of digits and letters.		CO1
	c) Write a program to check if the word 'open' is present in the "This is open source software".		CO2
	d) Write a program that reads in numbers separated by a space in one line and display distinct numbers. For example: Input: 1 1 1 1 1 2 2 2 Output: 1 2		CO2
	e) Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.		CO3
	f) Write a Python program to handle the exception that occurs when accessing an index out of range in a list.		CO3
	g) Given a numpy array, write a function to sort it in descending order.		CO4
	h) Use regular expression to check if the string ends with "World!". If a match is found, it prints "Match found!" otherwise, it prints "Match not found".		CO4
UNIT I			CO Mapping
Q2	(a) Explain the difference between break and continue with suitable examples. (b) Write a program to print all prime numbers that fall between two numbers. (Accept two numbers from the user)	(10)	CO1
Q3	(a) Write the python program the print the given series: 53,53,40,40,27,27..... (from 53 to 100) (b) Print the following pattern using a for loop – <div style="text-align: center;"> <pre> 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5 </pre> </div>	(10)	CO1

UNIT II			CO Mapping
Q4	(a) State the difference between lists and dictionary with examples. (b) Write a python script to merge two python dictionaries.	(10)	CO2
Q5	(a) Define Tuple and show it is immutable with an example. (b) Write a program to find maximum and minimum of tuple.	(10)	CO2
UNIT III			CO Mapping
Q6	(a) Define scope of a variable in a function. Differentiate between local and global variable with examples. (b) Write a Python program to reverse a string Sample String : "1234abcd" Expected Output : "dcba4321"	(10)	CO3
Q7	(a) Write a Python function to check whether a string is a pangram or not. (b) Write a Python function that takes a list as an argument and returns the sum of all the elements in the list.	(10)	CO3
UNIT IV			CO Mapping
Q8	(a) Differentiate between class attributes and instance attributes with examples. (b) Create a base class Animal with a method sound. Create a derived class Dog that overrides the sound method to print "BARK".	(10)	CO4
Q9	Write a Python programming to create a pie chart with a title of the popularity of programming Languages. Sample data: Programming languages: Java, Python, PHP, JavaScript, C#, C++ Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7 The code snippet gives the output shown in the following screenshot: Popularity of Programming Language Worldwide, Oct 2017 compared to a year ago	(10)	CO4

