Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination-April/May-2017

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| **Code :** | **15CS3005** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PYTHON PROGRAMMING FOR BIOINFORMATICS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | The following code defines the start of a class to represent bank accounts:  classBankAccount(object):  interest\_rate = 0.3  def \_\_init\_\_(self, name, number, balance):  self.name = name  self.number = number  self.balance = balance  return | | CO1 |  |
|  | a. | Name the class variables and the instance variables in the given code. | 5 |
|  | b. | Add instance methods called deposit() and withdraw() which increase and decrease the balance of the account. Make sure the withdraw() method doesn't allow the account to go into overdraft. Add a third method called add\_interest() which adds interest to the balance (the interest should be the interest rate multiplied by the current balance). | 15 |
| (OR) | | | | |
| 2. | The following code implements two mutually recursive functions-functions which call each other:  defise(n):  if n==0:  return True  else:  returniso(n-1)  defiso(n):  if n==0:  return False  else:  return ise(n-1) | | CO1 |  |
| a. | What will the following function calls return:   1. iso (3) 2. iso (2) 3. ise (3) 4. ise (2) | 8 |
| b. | What do the functions iso and ise do? | 12 |
| 3. | count = 0  finished = False  total = 0  while finished:  number = int(input("Enter a number: ’))  total = total + number  print("Current average is ", total / count);  if total > 500  finished = True  count = count + 1;  The above program should read a sequence of integers from the keyboard and terminate when the total of the numbers that have been read is greater than 500, outputting the average value so far after the each input. However, there are two errors that will be detected by the IDLE syntax-checker and one that will cause failure at runtime and another that will cause the program to behave incorrectly. For each of the four errors, give | |  |  |
|  | a. | The number of the line of code where it occurs. | CO2 | 6 |
|  | b. | The kind of error in that line of code | 6 |
|  | c. | The way in which the error should be corrected | 7 |
| (OR) | | | | |
| 4. | Write a full definition for a Python function called compare, which takes as arguments two strings s1 and s2 and an integer n, and returns the value True if the first n characters in the string s1 are the same as the first n characters in the string s2 and return the value False otherwise. You may assume that both strings have at least n characters. | | CO2 | 20 |
| 5. | Briefly, explain about network programming and related modules in python | | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Explain lists, tuples and dictionaries in python with an example. |  | 10 |
|  | b. | Write the list manipulation functions in python. | 10 |
| 7. | a. | In a class, create a method called reverse () which takes a string argument. The method should return the reverse of the argument as a string. | 15 |
|  | b. | Create a second method in the class called isPalindrome () which takes a string argument. This method should return True if the argument is a palindrome and False otherwise. | 5 |
| (OR) | | | | |
| 8. | Translate the following while loop into a for loop (which does the same thing as the while loop):  i = 20  while (i> 0):  print "i = ", i  i =- 1 | | CO3 | 20 |
| **Compulsory**: | | |  |  |
| 9. | a. | What are features of Python which make it a unique language? |  | 10 |
|  | b. | Explain various control and loop statements in Python with an example. | 10 |

ALL THE BEST