


IV SEMESTER B.TECH. (COMPUTER AND COMMUNICATION ENGINEERING)
MAKEUP EXAMINATIONS, JUNE 2019
SUBJECT: ADVANCED PROGRAMMING TECHNOLOGIES [ICT 2252]
REVISED CREDIT SYSTEM
(11/06/2019)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer ALL the questions.
- ❖ Missing data, if any may be suitably assumed.

- 1A. Write a Python program to define a class named Employee. Include the instance variables id, name, salary and department. Each employee's id should be auto generated, in the order of creation, starting from 2912. Define constructor, destructor, display method and a class method to compute total salary of all the employees. Read the details of 'n' employees from user and store created 'n' objects in a list. Implement a search function which displays the details of an employee after reading his id from user. 5
- 1B. What is the output of the following Python code snippet? Justify. 3
- ```
s="ICT CCE"
d1={i:s[i] for i in range (0,len(s))}
print(d1)
d1={s.index(x):x for x in s}
print(d1)
```
- 1C. Write a Ruby program to check three numbers and return true if one or the other is small, but not both. A number is called "small" if it is in the range 1..10 inclusive. 2
- 2A. Explain with an example program the getter, setter and deleter methods in Python. 5
- 2B. List and explain the Ruby iterators. Give an example for each. 3
- 2C. Write the output of the following code. 2
- ```
XS=[1,1,1]
for k in range(1,7):
    XS.append(XS[k]-XS[k-1])
print XS[7]
my_list = ['p','r','o','g','r','a','m','i','z']
print(my_list[:-5])
print(my_list[:])
```
- 3A. Write a Python program to read two linear equations as strings, add them and display the result. 5
- Sample input: 3a+5b , 4a+3b Result is 7a+8b
- 3B. Write a generator function to generate the fibonacci numbers up to N 3

- 3C. Write a Python program to find the union, intersection and difference of two lists without using any of the type casting functions, built-in functions and built-in methods. Input lists contain only integer values. 2
- 4A. Write a Python program to do the following: 5
- Read a sentence
 - Print the words after removing all duplicate words
 - Sort the words alphanumerically
 - Calculate the number of letters and digits.
 - Create a dictionary which stores keys as vowels and value as number of times vowel is appearing in the sentence
- 4B. What are anonymous functions in Python? Explain with an example and syntax. 3
- 4C. Write the output of the following Ruby code snippet. 2
- ```
phone = "2004-959-559"
phone = phone.gsub!(/\D/, "")
puts "Phone Num : #{phone}"
```
- 5A. Explain the following "Function Parameter Options" in Python with an example for each. 5
- Positional parameters
  - Passing arguments by parameter name
  - Variable numbers of arguments
  - Indefinite number of arguments passed by keyword
  - Mutable objects as arguments
- 5B. Write a Ruby program to compute the sum of the first 2 elements of a given array of integers. If the array length is less than 2, just sum up the elements that exist, returning 0 if the length of the array is 0. 3
- 5C. What is the output of the following Python code? Justify your answer. 2
- ```
a = 3
c = 2
c **= a
print "Value of c is ", c
s1=[1,2,3]
s2=[1,2,3]
s3=s1
s4=[s2]
if s1==s3:
    print "List 1 and List 3 are same"
if s4==s2:
    print "List 4 and List 2 are equal"
print s4
```