



DECEMBER 2020: End Semester Assessment (ESA) B. Tech. 2nd SEMESTER
UE15/16/17/18/19CS101 - Introduction to Computing using Python

Time: 3 Hrs.

Answer All Questions

Max Marks: 100

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| 1 | a | Say True or False: i) Tuple is immutable type in python. ii) Output of, not(-1.5) is False. iii) True and not True, result is True. iv) x="python"*2, x is a valid string. v) Set can have duplicate elements. vi) String type can be a key of a dictionary data structure. | 6 |
| | b | Explain each of these words with an example i) Interpreter ii) Logical Error | 6 |
| | c | What is Module? And list 3 functions in random module. | 4 |
| | d | List the steps involved in the process of computational problem solving. | 4 |
| 2 | a | Write a program to transpose a given matrix and display the resultant matrix. Given matrix: matrix = [[1, 2], [3, 4], [5, 6]] | 5 |
| | b | What does range() return? Explain range() with an example program. | 5 |
| | c | Write a program to print the pattern as mentioned for given n is 4. * * * * * * | 5 |
| | d | i) What is tuple? and What will be the output when slicing is performed on tuple as shown below code snippet? t = (1, 2, 4, 3) t [1:-1] ii) What is the output of the following code? x = ['pq', 'rs'] for i in x: i.upper() print(x) | 3+2 |
| 3 | a | What is the output of the code mentioned below? i) Given n=4 n=int(input("Enter n val")) s=set() | 2+2 |

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| | | <pre> for i in range(2,n+1): s.add(i) print(s) ii) def word_count(s): wordlist = s.split() for word in wordlist: print(len(word), end = " ") print() word_count("Hey World") </pre> | |
| | b | How to create list? Write a program to remove duplicates in from the list. | 6 |
| | c | What is default parameter and keyword arguments? Give an example for each. | 4 |
| | d | What is recursion? Write a program to find the sum of digits using recursion. | 1+5 |
| 4 | a | <p>i) What is the output of below code?</p> <pre> def update(i, x=[]): x.append(x.append(i)) return x for i in range(2): y = update(i) print(y) </pre> <p>ii) What is the output of the below code and explain the output.</p> <pre> nums = {1,2,3,1,2,3} def update(nums): nums[1] = nums[1] + 1 update(nums) print(nums) </pre> | 3+3 |
| | b | Write a program to count number of 1s in binary representation of an integer. | 4 |
| | c | <p>Identify the error if any, if not What is the output of the code?</p> <p>i) def foo(x):</p> <pre> def f1(): print("f1 function") x() return f1 def f2(): print("f2 function") p = foo(f2) p() </pre> <p>ii) Find out the statements are valid/invalid wrt given dictionary?</p> <pre> d={"One":1,"two":2,"three":3} </pre> <p>Statements are:</p> <ol style="list-style-type: none"> 1. d["two"]="twenty" and 2. d[{11,22}]= {11,22} <p>iii) What is the output of the below code?</p> <pre> g = range(-5) </pre> | 2+2+2 |

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| | | res = list(map(lambda x : x % 2, g)) print(res) | |
| | d | Why and when to use lambda function? Write a program using lambda function to add two integers. | 4 |
| 5 | a | i) What is the output with and without the statement marked as question mark? <pre>def func(): try: print("In try\n") except NameError: #? print("In except block\n") print("Outside\n") func()</pre> ii) What is the output of below code? <pre>def display(): while True: yield False d= display() for i in range(2): print(next(d))</pre> | 2+2 |
| | b | i) What Are Python Iterators? Give an example. ii) What are Generators in Python? Mention one advantage of using generators in python. | 3+3 |
| | c | What is class? And list 3 fundamental features of object oriented programming. | 4 |
| | d | When to use file concept? Write a python program to read the contents of the file line by line and print on the standard output/terminal. | 6 |