



JK Lakshmipat University Jaipur

BCA - I Semester
Computer Science and Engineering
Programming - I (Python) CS1139
Final Exam

Time: 2 hours

11 Dec 2023

Max Marks: 35

Instructions

- *There are a total of 8 questions consisting multiple parts. Attempt all questions.*
- *Read the questions and the codes provided with them very carefully.*
- *In case of any doubt, make your assumption, write it clearly and continue.*
- *When writing your programs, provide indentation correctly and clearly.*

1) Write three differences between lists and sets in Python.

3 marks [CO2,3,4]

2) Suppose we have a list in python called `x` which contains only numbers. Using list comprehension write a Python statement that:

- Creates a list containing the squares of all numbers of `x`.
- Creates a list containing the cubes of all the odd numbers in `x`.

1 + 1 = 2 marks [CO2,3,4]

3) Answer the following: questions about dictionaries:

- Can strings be used as keys in dictionaries?
- Can lists be used as keys in dictionaries?
- Can lists be used as values in dictionaries?
- Can sets be used as values in dictionaries?

0.5 × 4 = 2 marks [CO2,3,4]

4) Answer the following

- In Python, does "10">"2" evaluate to True or False?
- If x='python', what happens when I try to do x[0]='P'?
- If l=[10,20,30,40] write a Python statement that inserts 35 after 30 in the list. (So finally the list should become l=[10,20,30,35,40])

1 × 3 = 3 marks [CO2,3,4]

5) What are the values of a and b after running the code snippets shown below:

<pre>(a) a=10 b=20 if not a>50 and b<50: a=a+b else: b=a+b</pre>	<pre>(b) a=10 b=100 while a<b: a=a+5 b=b-10</pre>	<pre>(c) l=[10,20,30,40] a=l[-3] m=1 m[1]=1000 b=l[1]</pre>	<pre>(d) d=dict() d['abc']=10 d['xyz']=200 if 200 in d: a='john' else: a='peter' if 'abc' in d: b=d['abc'] else: b=d['xyz']</pre>
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2 + 2 + 2 + 2 = 8 marks [CO1,2,3]

6) What are outputs of the code snippets shown below

```
(a)
s="mississippi"
x=set()
i=0
for c in s:
    if c not in x:
        print(i)
        x.add(c)
    i=i+1
```

```
(c)
sen="God helps those who help themselves"
l=sen.split()
i=0
for x in l:
    if i<len(x):
        print(x[i])
    i=i+1
print("i is", i)
```

```
(b)
s"please finish the exam on time"
l=s.split()
l=[x[-1] for x in l if len(x)<5]
print("length of l is", len(l))
print("".join(l))
```

```
(d)
def func(a,b):
    print("In the function:", a,b)
a=100
b=200
print("Outside the function:", a,b)
func(b,a)
```

2 + 2 + 2 + 2 = 8 marks [CO2,3,4]

7) I want to keep inputting words from the user till the user just presses enter to end. I want all the words ending in "e" to be saved in a list l. At the end I want to print the total number of words inputted by the user and the number of words saved in the list

An incomplete program to do this is shown below. Fill the blanks to complete the program. Write the completed program in your answer sheet and underline the parts that you filled up. There are total 7 blanks that you have to fill up in this question.

```
totalWords=0
l=[]
while _____:
    print("Enter a word or just press enter to end")
    x=input()
    if _____:
        print("I'll stop now because you just pressed enter without typing a word.")
        _____
    if _____:
        _____
    totalWords=_____
print("Total number of words inputted is: ", totalWords)
print("Number of words saved is: ", _____)
```

4 marks [CO1,2,3]

8) a) Write a Python function that takes a positive number as argument, and returns the sum of all multiples of 3 less than or equal to that number.

b) Write a Python program that prints all the three digit perfect squares.

2 + 3 = 5 marks [CO1,2,3,4]

