**Mid-Term Examination, Odd Semester 2021-22**
**B. Tech (IOT/AIML/DA/CCV/CSF), 1st Year, 1st Sem.**
**BCSG1001: Python Programming**

**Time: 2 Hours**                                      **Maximum Marks: 30**

# Section- A

*Note: Attempt All Three Questions.*                    3 x 2 = 6 Marks

Q1. What is type conversion in Python? Explain any four built-in functions that is used for type conversion. Write the name of the built-in function which can convert the string '0xf7' to number decimal directly.

Q2. Discuss the function id(), str(), ord() and chr() in python with suitable examples

Q3. Name any three list methods that returns any values other than None and explain each with suitable example.

# Section- B

*Note: Attempt All Three Questions.*                    3 x 3 = 9 Marks

Q1. Polycarp has n coins, the value of the i-th coin is ai. Polycarp wants to distribute all the coins between his pockets, but he cannot put two coins with the same value into the same pocket.

For example, if Polycarp has got six coins represented as an array a=[1,2,4,3,3,2], he can distribute the coins into two pockets as follows: [1,2,3],[2,3,4].

Polycarp wants to distribute all the coins with the minimum number of used pockets. Help him to do that.

**Input**
The single line of the input contains n integers space separated a1 a2. (1≤ai≤100) values of coins.

**Output**
Print only one integer — the minimum number of pockets Polycarp needs to distribute all the coins so no two coins with the same value are put into the same pocket.

Examples

| Input0 | Input1 |
|--------|--------|
| 1 2 4 3 3 2 | 64 100 |
| Output0 | Output1 |
| 2 | 1 |

Q2. What is tuple in Python? Explain the difference between the tuple and list with example. Write the output of the following lines below.

```
lst = ['vehicle', 'objects', 'human', 'water']
slc = lst[10:0:-2]
print(slc, type(slc))
```

Q3. Write a Python program to print following pattern using * where the number of rows entered by the user. Examples

row=4                                              row=3

```
*       *                                          *       *
**     **                                          **    **
***   ***                                          ******
*******
```

# Section – C

## Note: Attempt Any Three Questions.                         3 x 5 = 15 Marks

Q1. Explain the different string formats available in Python with suitable examples. What is f-string in Python and its uses? WAP program to find the number of vowels, consonants, digits and white space in a user given string.

Q2. Illustrate the different types of control flow statements and control flow structures available in Python and also discuss the break and continue keywords with examples. What is the output of the following lines? Brief the error if code having error

```
y = '10%d0'%True
print (int(y, 2))
```

Q3. Write any five string methods in Python that return integer only and explain each method with example. Write a python program to check if all characters in string are same or not. Print 'all characters are same' if all characters are same otherwise print None.

sample input:                                       sample output:

'aaaAa'                                             'all characters are same'

Q4. Define any four operators in Python which work with list or tuple. Write a Program to check whether given number is prime or not. (In Python-looping use while loop only)

Write the output of the code below?

```
input = 'hello'
hello = None
out = hello or input
out = eval(out)
print(out, type(out))
```