1) Exceptions are nothing but errors when the code written cannot handle the conditions the exceptions arises.

a) Zero Division Error :-

CODE :-

```
try:
    15/0
except ZeroDivisionError as Zd:
    print(zd)
```

#OUTPUT:

division by zero.

b) Index out of range exception

CODE :

```
l= 10,20
try:
    l[20]
except IndexError as IE:
    print(IE)
```

#OUTPUT:

tuple index out of range.

c) Invalid datatype:-

CODE:-

```
try:
    inp = int(input("Enter a number: "))

except ValueError as VE:
    print(VE)
```

OUTPUT:-

Enter a Number: Arjun

Invalid literal for int() with base 10:

'Arjun'.

2)
```
Class Triangle:
    def __init__(self, length, width):
        self.length = length
        self.width = width

    def Perimeter(self):
        return (self.length + self.width)

    def Area(self):
        return 0.5 * self.length * self.width

    def display(self):
        print("The height of the triangle is:",
              self.length)
        print("The width of the triangle is:",
              self.perimeter())
        print("The area of the triangle is:",
              self.Area())

Class Cuboid(Triangle):
    def __init__(self, length, width, height):
        Triangle.__init__(self, width, height)
        self.height = height
```

```
    def Volume(self):
        return self.length * self.width * self.height

Tri_Class = Triangle(12, 8)
Tri_Class.display()
print("\n")
Cub_Class = Cuboid(12, 8, 4)
print("The volume of Cuboid is:", Cub_Class.Volume())
```

```
The height of the triangle is: 12
The width of the triangle is: 8
The perimeter of the triangle is: 20
The area of the triangle is: 48.0

The volume of Cuboid is: 128
```

e) import re

```
try:
    file = open("one.txt")

    for data in file:
        data = data.strip()
        emails_found = re.findall
                       ("[0-9a-zA-Z]+@[0-9a-zA-Z]
                       +\.[0-9a-zA-Z]+", line)

    print(emails)

except FileNotFoundError as e:
    print(e)
```

3)

a) # Importing Packages

```
import re

text = "The following example creates an ArrayList
with a capacity of 50 elements. Four elements
are then added to the ArrayList and
ArrayList is trimmed Accordingly"
new_words = re.findall(r'\b[cCeE]\wt',
                       text)

print(new_words)
```

OUTPUT:-

['example', 'creates', 'capacity', 'elements',
'elements']

b)

```
import re
text = "I am studying cyber security"
print(re.sub('cyber', 'Cy.', text))
```

OUTPUT:-

I am studying Cy. security

c) ~~Input~~

```
import re

text = 'Hello everyone, this is an example'
words = re.findall(r'\b e\S+e\b', text)
print(words)
```

OUTPUT:-

[~~example~~ everyone, example]

D)

```
import re

def pluralize(noun):
    if re.search('[n]$', noun):
        return re.sub('$', 's', noun)

val = "cap"
print( val, "-", pluralize(val))
```

OUTPUT:-

cap - Caps.