BRAC UNIVERSITY
Department of Computer Science and Engineering

Examination: Midterm
Duration: 60 Minutes
No. of Questions: 3

CSE 111: Programming Language II

Semester: Summer 2022
Full Marks: 20
No. of Pages: 2

Name: (Please write in CAPITAL LETTERS)	ID:	Section:

B

✓ Use the back **part** of the answer script for rough work. **No washroom breaks.**
✓ At the end of the exam, put the question **paper** inside the answer script and **return both**.

Question 1: CO2, CO4 [4 Points]

Design the **Exam** class with necessary properties so that the given output is produced:

#Write your code here	**Output:**
e1 = Exam('Midterm', 2, 10) print(e1.detail()) print("==========") e2 = Exam('Final', 3, 10) print(e2.detail())	Exam Type: Midterm Number of questions: 2 Marks per questions: 10 Total Marks: 20 ========== Exam Type: Final Number of questions: 3 Marks per questions: 10 Total Marks: 30

Question 2: CO4 [6 Points]

```
1  class MidA:
2      def __init__(self):
3          self.x = 5
4          self.y = 3
5          self.sum = 0
6      def methodA(self, x):
7          self.y = x + self.sum + self.x
8          self.sum = x + self.y
9          z = MidA()
10         z.sum = self.sum + self.y
11         self.methodB(z)
12         print(self.x, self.y, self.sum)
13     def methodB(self, a):
14         y = 4
15         a.x = self.x + self.sum;
16         self.sum = a.x + a.y + y
17         print(a.x, a.y, a.sum)
```

Illustrate the output of the following statements:

```
a = MidA()
a.methodA(6)
```

Output [Answer on question paper]		

Question 3: CO2, CO4 [10 Points]

Suppose you are making a program for a Television remote control named “RickMote”. The TV channel provider has **provided only 6 channels** where the corresponding channel numbers are **0,2,3,6,7,9**. This is a vital information as you might need to store the list of channel numbers in an instance variable. Now your task is to **design** the “**RickMote**” class in such a way that the expected output is produced for the given code below: [Hint:

- The channel numbers are not circular. So, channel number 0 is the first channel while 9 is the last. You cannot go below channel number 0 and beyond channel number 9.
- If power is turned off, there is no point in changing channel and volume.
- Increasing channel number means going to the next channel in the channel list and decreasing it means going to the previous channel in the channel list.]

#Write your code here

```
oTV = RickMote()
oTV.power()
print("1.##############################")
oTV.showInfo()
print("2.##############################")
oTV.changeChannel()
oTV.changeVolumeLevel()
oTV.showInfo()
print("3.##############################")
oTV.power()
oTV.showInfo()
print("4.##############################")
oTV.power()
oTV.changeVolumeLevel(4)
oTV.changeChannel(3)
oTV.showInfo()
print("5.##############################")
oTV.changeVolumeLevel(-2)
oTV.showInfo()
print("6.##############################")
oTV.power()
oTV.changeChannel(9)
oTV.changeVolumeLevel(-1)
oTV.showInfo()
print("7.##############################")
oTV.power()
oTV.changeChannel(11)
oTV.showInfo()
```

Output:

```
1.##############################
ID Cable Box Status:
Cable Box is: ON
Channel:0
Volume:3
2.##############################
ID Cable Box Status:
Cable Box is: ON
Channel:2
Volume:4
3.##############################
ID Cable Box Status:
Cable Box is: OFF
4.##############################
ID Cable Box Status:
Cable Box is: ON
Channel:3
Volume:8
5.##############################
ID Cable Box Status:
Cable Box is: ON
Channel:3
Volume:6
6.##############################
Power is turned off. Cannot change channel.
Power is turned off. Cannot change volume.
ID Cable Box Status:
Cable Box is: OFF
7.##############################
TV channel does not exist.
ID Cable Box Status:
Cable Box is: ON
Channel:3
Volume:6
```