

# 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:
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**A**

✓ 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:

<b>#Write your code here</b>  e1 = Exam('Midterm', 2, 10) print(e1.detail()) print("===== e2 = Exam('Final', 3, 10) print(e2.detail())	<b>Output:</b> 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
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### Question 2: CO4 [6 Points]

1	<b>class</b> MidA:
2	<b>def</b> <u>__init__</u> (self):
3	self.x = 3
4	self.y = 7
5	self.sum = 0
6	<b>def</b> 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	<b>print</b> (self.x, self.y, self.sum)
13	<b>def</b> methodB(self, a):
14	y = 3
15	a.x = self.x + self.sum;
16	self.sum = a.x + a.y + y
17	<b>print</b> (a.x, a.y, a.sum)

**Illustrate** the output of the following statements:

```
a = MidA()  
a.methodA(5)
```

**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
```