

**BRAC UNIVERSITY**

**Department of Computer Science and Engineering**

**Examination**: Final **Duration**: 90 Minutes **No. of Questions**: 3

CSE 111: Programming Language II**Semester**: Summer 2022

**Full Marks**: 30

**No. of Pages**: 3

| Name:  (Please write in CAPITAL LETTERS) | ID: | Section: |
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**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: CO4 [10 Points]**

**Design** the **Monster** class with necessary properties so that the given output is produced. [**Hint:**

**1. Let's say there are 2 monsters: A and B.**

**-A can attack B if A is alive.**

**-If A is alive, it can only attack B if B is alive.**

**-If A's power is greater than that of B, only then A can defeat B; Otherwise, A will be defeated by B.**

**- Once a monster gets defeated, it is considered to be dead. 2. The variable "monsterCount" keeps track of the number of monsters alive. So, update it accordingly.]**

| **#Write your code here**  monster1 = Monster('Godzilla', 40)  monster2 = Monster('Hydra', 30)  monster3 = Monster('KingKong', 50)  print(f"Number of monsters  alive:{Monster.monsterCount}")  print('1--------------------------------') print(monster1.get\_details())  print('2--------------------------------') print(monster2.get\_details())  print('3--------------------------------') print(monster3.get\_details())  print('4--------------------------------') monster1.attack()  print('5--------------------------------') monster1.attack(monster2)  print('6--------------------------------') monster1.attack(monster2, monster3) print('7--------------------------------') print(f"Number of monsters  alive:{Monster.monsterCount}")  print('8--------------------------------') print(monster2.get\_details())  print('9--------------------------------') monster2.attack(monster1) | **Output:**  Number of monsters alive:3  1-------------------------------- Name:Godzilla  Power:40  Alive:True  2-------------------------------- Name:Hydra  Power:30  Alive:True  3-------------------------------- Name:KingKong  Power:50  Alive:True  4-------------------------------- No monsters to attack  5-------------------------------- Attack successful.Godzilla defeated Hydra.  6-------------------------------- Cannot attack Hydra. It's not alive. Attack unsuccessful. Godzilla was defeated by KingKong.  7-------------------------------- Number of monsters alive:1  8-------------------------------- Name:Hydra  Power:30  Alive:False  9-------------------------------- Hydra is not alive to attack. |
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**Question 2: CO5 [10 Points]**

**Implement** the **BracbookUser** class that is derived from the **User** class with necessary properties so that the given output is produced.

[**You are not allowed to change the given code under any circumstances.]**

| class User:  activities = ["Post", "Like", "Comment"] def \_\_init\_\_(self, name,email):  self.name = name  self.email = email  def UserActivity(self, activityType): if activityType in User.activities: return True  else:  return False  def userDetail(self):  return f"User Detail:\nName:{self.name} \nEmail: {self.email}"  #Write your code here  user1 = BracbookUser("Rakait","xyz@gmail.com") print("1===========================") print(user1.userDetail())  print("2===========================") user2 = BracbookUser("Sazzad","abc@gmail.com", "01727xxxxxx")  print("3===========================") print(user2.userDetail())  print("4===========================") user1.UserActivity("Like")  print("5===========================") user1.UserActivity("Comment")  print("6===========================") print(user1.userDetail())  print("7===========================") user2.UserActivity("Share")  print("8===========================") user2.UserActivity("Comment")  print("9===========================") print(user2.userDetail()) | **Output:**  1===========================  User Detail:  Name: Rakait  Email: xyz@gmail.com  Phone: Not set  Activity Log: No recent activity. 2===========================  3===========================  User Detail:  Name: Sazzad  Email: abc@gmail.com  Phone: 01727xxxxxx  Activity Log: No recent activity. 4===========================  Rakait has Like(d/ed) successfully. 5===========================  Rakait has Comment(d/ed) successfully. 6===========================  User Detail:  Name: Rakait  Email: xyz@gmail.com  Phone: Not set  Activity Log: Like,Comment  7===========================  No activities found like Share 8===========================  Sazzad has Comment(d/ed) successfully. 9===========================  User Detail:  Name: Sazzad  Email: abc@gmail.com  Phone: 01727xxxxxx  Activity Log: Comment |
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**Question – 3: CO4 [10 Points]**

| **1** | **class A:** |
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| **2** | **temp = 5** |
| **3** | **def \_\_init\_\_(self):** |
| **4** | **self.y = A.temp - 2** |
| **5** | **self.sum = A.temp + 1** |
| **6** | **A.temp += 3** |
| **7** | **def methodA(self, m, n):** |
| **8** | **x = 0** |
| **9** | **self.y = self.y + m + (A.temp)** |
| **10** | **x = x + 2 + n** |
| **11** | **print(x, self.y, self.sum)** |
| **12** | **self.methodB(-2, 6)** |
| **13** | **self.sum = self.sum + x + A.temp** |
| **14** | **self.methodB(-4, self.sum, 3)** |
| **15** | **def methodB(self, m, n):** |
| **16** | **y = 5** |
| **17** | **y = y + self.y** |
| **18** | **self.sum = B.x + y + n** |
| **19** | **print(B.x, y, self.sum)** |
| **20** | **class B(A):** |
| **21** | **x = 1** |
| **22** | **def \_\_init\_\_(self, obj=None):** |
| **23** | **super().\_\_init\_\_()** |
| **24** | **if obj != None:** |
| **25** | **obj.sum = 11** |
| **26** | **self.y = A.temp + 4** |
| **27** | **self.sum = 3 + A.temp + B.x** |
| **28** | **def methodB(self, m, n, y=0):** |
| **29** | **y = y + self.y + n** |
| **30** | **B.x = m + self.y + n** |
| **31** | **self.sum = B.x + y + A.temp** |
| **32** | **print(B.x, y, self.sum)** |

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

**b1 = B()**

**b2 = B(b1)**

**b1.methodA(-3, -7)**

**Output:**

| **X** | **y** | **sum** |
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