Object Orientation and Graphical User Interface quiz

TOTAL POINTS 10

1. Please decide whether the following statements are true or false. 1 point

Data encapsulation, inheritance and polymorphism are the three major characteristics of object orientation. Instances are specific “objects” created based on a class. The data owned by each instance is independent somehow.

- (•) T
- ( ) F

2. Please decide whether the following statements are true or false. 1 point

In Python, there is a very obvious difference between the methods in class and the ordinary functions, the former requiring transfer of one extra first argument. However, when this method in class is called, there is no need to assign a value to that argument. Generally speaking, this argument is recommended to be written with the name “myself”.

- (•) F
- ( ) T

3. Class “Dog” 1 point

Table 1 Class “Dog”

```
1: class Dog(object):
2:     def __init__(self, name, size):
3:         self.name = name
4:         self.__size = size
5:
6:     def getInfo(self):
7:         print("This dog's name: %s" % self.name)
8:         print("This dog’s size: %s" % self.  size)
```

Fill in the following codes.

```
>>> dog = Dog('Wangwang', '_____')
>>> dog.getInfo()
This dog's name: Wangwang
This dog's size: small
```

small

4. Please decide whether the following statements are true or false

1 point

In Question 3, the attribute “size” in the class “Dog” is added with two underlines before it when declaring; it means that the “size” is declared to be a private variable.

- (●) T
- ( ) F

5. Based on Question 3, we define the parent class “Animal” of the class “Dog”.

1 point

```
class Animal(object):
    def __init__(self, name):
        self.name = name
    def getInfo(self):
        print("This animal's name: %s" % self.name)
    def sound(self):
        print("The sound of this animal goes?")
```

For inheriting that class “Animal”, the first line in the class “Dog” in Table 1 in Question 4 shall be modified. The first line should be modified, changed into _____ (please write it down completely). For calling “dog.sound()”, is that method feasible? (If yes, please write down the output; if not, please write down “F”) _____. Please fill in the first space.

class Dog

6. Please fill in the second space with the answer to Question 5.

1 point

F

7. Please define the sub-class “Cat” and reload the “sound” method of parent class “Animal”. Fill in the blank at the following line. 1 point

```
1  class Cat(Animal):
2     def sound(self):
3       print("The sound of cat goes meow ~")
4  >>> cat = Cat('kawaii')
5  >>> cat. getInfo()
6  ____________________
7  >>> cat.sound()
8  The sound of cat goes meow ~
```

Enter answer here

8. Based on the previous questions, if the sub-classes “Dog” and “Cat” inherit the parent class “Animal”, which of the following answer in every line is correct? 1 point

```
1  dog = Dog('coco','small'); cat = Cat('kawaii')
2  >>> isinstance(dog, Animal)
3  _____________
4  >>> isinstance(cat, Animal)
5  _____________
6  >>> isinstance(dog, Dog)
7  _____________
8  >>> isinstance(dog, Cat)
9  _____________
```

- ○ True, True, False, False
- ◉ True, True, True, False
- ○ True, True, True, True
- ○ True, False, False, True

9. Which of the following descriptions about the GUI library is NOT correct? 1 point

- [x] A user's operation triggers an event in the GUI toolkit. In any application, the program will react to such an event. In wxPython, an event processing function is appended to a component with the Together method.
- [ ] In Python, many GUI platforms are available. Apart from wxPython, there are semi-standard Tkinter and inter-platform PyQt etc.
- [ ] By making geometric coordinates, we may directly put the component at the desired position. "wxPython" often adopts the flexible layout scheme "sizer", and "sizer" is an algorithm of screen layout.
- [ ] GUI may make a program friendlier. Although not all programs need it, GUI may be somewhat helpful when a program interacts with a user.

10. This file may be directly run to obtain a GUI window. Please choose the correct order filling in the blank after the following code notes with the description of event of that line. 1 point

Table 2 Run the Program File myWin.py in Python

```
1  import wx                                                    #____
2  class MyWindow(wx.App):                                      #____
3      def OnInit(self):                                        #____
4          frame = wx.Frame(None,title="Hello world",pos=(0,0))
5          frame.Show()
6          return True
7
8  if __name__=='__main__':
9      app = MyWindow()                                         #____
10     app.MainLoop()                                           #____
```

A. Enter the main event loop of this application program

B. Inherit wxPython application program classes

C. Import necessary wx modules

D. Define an initiation method of application program

E. Create an instance of application program

- [ ] CBEDA
- [ ] CDBEA
- [ ] CBDAE
- [x] CBDEA

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