



pass

- (a) Multi-level inheritance
- (b) Multiple inheritance
- (c) Hierarchical inheritance
- (d) Single-level inheritance

1-d. What will be the output of the following Python code? (CO2)

1

```
class A:
    def one(self):
        return self.two()
    def two(self):
        return 'A'
class B(A):
    def two(self):
        return 'B'
obj2=B()
print(obj2.two())
```

- (a) A
- (b) An exception is thrown
- (c) A B
- (d) B

1-e. What will be the output of the following Python code? (CO3)

1

```
ls=[-2, 4]
m=map(lambda x:x*2, ls)
print(m)
```

- (a) [-4, 16]
- (b) Address of m
- (c) Error
- (d) [-4, 8]

1-f. What is the output of the code shown below? (CO3)

1

```
g = (i for i in range(5))
type(g)
```

- (a) class <'loop'>
- (b) class <'iteration'>

- (c) class <'range'>
- (d) class <'generator'>

- 1-g. To delete any widget from the screen which function we use ? (CO4) 1
- (a) stop()
  - (b) delete()
  - (c) destroy()
  - (d) break()
- 1-h. Which of the following is clickable in GUI programming ? (CO4) 1
- (a) Button
  - (b) Checkbutton
  - (c) Lable
  - (d) 1 and 2
- 1-i. Correct syntax of the reshape() function in Numpy array python is\_\_\_\_\_? (CO5) 1
- (a) array.reshape(shape)
  - (b) reshape(shape,array)
  - (c) reshape(array,shape)
  - (d) reshape(shape)
- 1-j. Which of the following is/are ways to create data frames? (CO5) 1
- (a) create by using list of dictionary
  - (b) create by using dictionary with list
  - (c) create by using series
  - (d) All of the mentioned

2. Attempt all parts:-

- 2.a. Discuss the use of isinstance() function with example. (CO1) 2
- 2.b. What is the use of \_\_init\_\_ () method in Python? (CO2) 2
- 2.c. Find all of the numbers from 1–1000 that are divisible by 8 using list comprehension. (CO3) 2
- 2.d. How to set the min and max height or width of a Frame in Tkinter? (CO4) 2
- 2.e. What is meaning of axis=0 and axis=1? (CO5) 2

## SECTION B

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3. Answer any five of the following:-

- 3-a. What are the object oriented programming concept ? Explain (CO1) 6
- 3-b. Write short note on dunder methods . (CO1) 6
- 3-c. What is instance method? Give syntax of instance method with and without parameters. (CO2) 6
- 3-d. What is function polymorphism in python? Explain it with example. (CO2) 6
- 3.e. What is iterator ?Also write a program that generate an iterator to print odd numbers from 1-20. (CO3) 6
- 3.f. Write a Python GUI program to create a button Remove and a label Hello using tkinter module. Remove button should delete the label on click. (CO4) 6
- 3.g. Create a dictionary with keys: Name, Department, City. Convert this dictionary into DataFrame. Rename column City as District ? (CO5) 6

### SECTION C

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4. Answer any one of the following:-

- 4-a. Explain `__lt__()` , `__eq__()`,`__ne__()`,`__ge__()` and `__gt__()` by implementing a class. (CO1) 10
- 4-b. Create a Python class named Rectangle constructed by a length and width. Also. Define a method called area which will compute the area of a rectangle. (CO1) 10

5. Answer any one of the following:-

- 5-a. What is Inheritance? How code reusability is achieved using inheritance? Explain with the help of a program. (CO2) 10
- 5-b. What is use of abstract class? Explain rules of abstract class. (CO2) 10

6. Answer any one of the following:-

- 6-a. What do decorators do in Python? Where are Python decorators used? How do you decorate a class in Python? (CO3) 10
- 6-b. Describe the role of generators with its advantages. Write a program to illustrate the use of generator by creating a generator that reverses a string. (CO3) 10

7. Answer any one of the following:-

- 7-a. Write a program to display a menu on the menu bar. Write a program to display a pop-up dialog box. (CO4) 10
- 7-b. Write a Python GUI program to create a Text widget using tkinter module. Insert a string at the beginning then insert a string into the current text. Delete the first and last character of the text. (CO4) 10

8. Answer any one of the following:-

- |      |   |    |
|------|---|----|
| 8-a. | Explain any five sub-modules of scipy. (CO5)                          | 10 |
| 8-b. | Why should one use NumPy arrays instead of nested Python lists? (CO5) | 10 |