

Python Basics

HW # 0 Solutions

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This exam is multiple choice. Circle the correct answer. Do not make any other marks.

Name: _____

1. What does the following code do?

```
1 def a(b, c, d):  
2     pass
```

- A. defines a list and initializes it
- B. defines a function, which does nothing**
- C. defines a function, which passes its parameters through
- D. defines an empty class

2. What is printed by the following code?

```
1 print(type([1,2]))
```

- A. <class 'tuple'>
- B. <class 'int'>
- C. <class 'set'>
- D. <class 'list'>**

3. What is printed by the following code?

```
1 def f():  
2     pass  
3  
4 print(type(f()))
```

- A. <class 'function'>**
- B. <class 'tuple'>
- C. <class 'NoneType'>
- D. <class 'type'>

4. What is printed by the following code?

```
1 print(type(1j))
```

- A. <class 'complex'> B. <class 'unicode'> C. <class 'int'>
D. <class 'float'>

5. What is printed by the following code?

```
1 print(type(lambda:None))
```

- A. <class 'NoneType'> B. <class 'tuple'> C. <class 'type'>
D. <class 'function'>

6. What is printed by the following code?

```
1 a = [1,2,3,None,(),[],]  
2 print(len(a))
```

- A. syntax error B. 4 **C. 6** D. 7

7. What is printed by the following code (in Python 3)?

```
1 print(type(1/2))
```

- A. <class 'int'> B. <class 'number'> C. <class 'float'>
D. <class 'double'>

8. What is printed by the following code?

```
1 d = lambda p: p * 2  
2 t = lambda p: p * 3  
3 x = 2  
4 x = d(x)  
5 x = t(x)  
6 x = d(x)  
7 print(x)
```

- A. 7 B. 12 **C. 24** D. 36

9. What is printed by the following code?

```
1 x = 4.5  
2 y = 2  
3 print(x//y)
```

- A. 2.0** B. 2.25 C. 9.0 D. ValueError

10. What is printed by the following code?

```
1  nums = set([1,1,2,3,3,3,4])
2  print(len(nums))
```

A. 1 B. 2 C. 4 D. 7

11. What is printed by the following code?

```
1  x = True
2  y = False
3  z = False
4
5  if x or y and z:
6      print("yes")
7  else:
8      print("no")
```

A. yes B. no C. ValueError

12. What is printed by the following code?

```
1  x = True
2  y = False
3  z = False
4
5  if not x or y:
6      print(1)
7  elif not x or not y and z:
8      print(2)
9  elif not x or y or not y and x:
10     print(3)
11 else:
12     print(4)
```

A. 1 B. 2 C. 3 D. 4

13. What is printed by the following code?

```
1  print(r"\nwoow")
```

- A. new line then the string: woow
- B. the text exactly like this: r"\nwoow"**
- C. the text like exactly like this: \nwoow
- D. Code results in an error.

14. What is printed by the following code?

```
1 class parent:
2     def __init__(self, param):
3         self.v1 = param
4
5 class child(parent):
6     def __init__(self, param):
7         self.v2 = param
8
9 obj = child(11)
10 print(obj.v1 + " " + obj.v2)
```

A. None None B. None 11 C. 11 11 **D. Code results in an error.**

15. What is printed by the following code?

```
1 class Account:
2     def __init__(self, id):
3         self.id = id
4         id = 999
5
6 acc = Account(123)
7 print(acc.id)
```

A. None **B. 123** C. 999 D. Code results in an error.

16. What is printed by the following code?

```
1 name = "snow storm"
2
3 print(name[6:8])
```

A. st B. sto **C. to** D. tor E. Code results in an error.

17. What is printed by the following code?

```
1 name = "snow storm"
2 name[5] = 'X'
3 print(name)
```

A. snow storm B. snowXstorm **C. snow Xtorm** D. Code results in an error.

18. What is printed by the following code?

```
1 for i in range(2):  
2     print(i)  
3  
4 for i in range(4,6):  
5     print(i)
```

- A. 0, 1, 4, 5
- B. 0, 1, 2, 4, 5, 6
- C. 2, 4, 6
- D. 1, 2, 4, 5, 6

19. What is printed by the following code?

```
1 values = [2, 3, 2, 4]  
2  
3 def my_transformation(num):  
4     return num ** 2  
5  
6 for i in map(my_transformation, values):  
7     print(i)
```

- A. 2 3 2 4
- B. 4 6 4 8
- C. 1 1 1 2
- D. 4 9 4 16
- E. Code results in an error.

20. What is printed by the following code?

```
1 import math  
2 print(math.floor(5.5))
```

- A. 0 **B. 5** C. 5.0 D. 6

21. What is printed by the following code?

```
1 x = "foo "  
2 y = 2  
3 print(x + y)
```

- A. foo B. foo foo C. foo 2 D. 2 **E. Code results in an error.**

22. Which piece of code will print all of the names in the list on a new, separate line?

```
1 names = ['Ramesh', 'Rajesh', 'Roger', 'Ivan', 'Nico']
```

- A. `print("\n".join(names))`
- B. `print(names.join("\n"))`
- C. `print(names.concatenate("\n"))`
- D. `print(names.append("\n"))`
- E. `print(names.join("%s\n", names))`

23. Assuming the filename for the code below is `/usr/lib/python/person.py` and the program is run as:

`python /usr/lib/python/person.py`

What gets printed?

```
1 class Person:
2     def __init__(self):
3         pass
4
5     def getAge(self):
6         print(__name__)
7
8 p = Person()
9 p.getAge()
```

- A. `Person` B. `getAge` C. `usr.lib.python.person` D. `__main__` E. An exception is thrown.

24. What is printed by the following code?

```
1 foo = {}
2 print(type(foo))
```

- A. `<class 'set'>` B. `<class 'dict'>` C. `<class 'list'>` D. `<class 'tuple'>`
E. `<class 'object'>`

25. What is printed by the following code?

```
1 foo = (3, 4, 5)
2 print(type(foo))
```

- A. `<class 'set'>` B. `<class 'dict'>` C. `<class 'list'>` D. `<class 'tuple'>`
E. `<class 'object'>`

26. What is printed by the following code?

```
1 country_counter = {}
2
3 def addone(country):
4     if country in country_counter:
5         country_counter[country] += 1
6     else:
7         country_counter[country] = 1
8
9 addone('China')
10 addone('Japan')
11 addone('china')
12
13 print(len(country_counter))
```

A. 0 B. 1 C. 2 **D. 3** E. Code results in an error.

27. What is printed by the following code?

```
1 confusion = {}
2 confusion[1] = 1
3 confusion['1'] = 2
4 confusion[1] += 1
5
6 total = 0
7 for k in confusion:
8     total += confusion[k]
9
10 print(total)
```

A. 1 B. 2 C. 3 **D. 4** E. Code results in an error.

28. What is printed by the following code?

```
1 confusion = {}
2 confusion[1] = 1
3 confusion['1'] = 2
4 confusion[1.0] = 4
5
6 total = 0
7 for k in confusion:
8     total += confusion[k]
9
10 print(total)
```

A. 2 B. 4 **C. 6** D. 7 E. Code results in an error.

29. What is printed by the following code?

```
1 boxes = {}
2 jars = {}
3 crates = {}
4
5 boxes['cereal'] = 1
6 boxes['candy'] = 2
7 jars['honey'] = 4
8 crates['boxes'] = boxes
9 crates['jars'] = jars
10
11 print(len(crates[boxes]))
```

A. 1 B. 2 C. 4 D. 7 E. Code results in an error.

30. What is printed by the following code?

```
1 numberGames = {}
2 numberGames[(1,2,4)] = 8
3 numberGames[(4,2,1)] = 10
4 numberGames[(1,2)] = 12
5
6 total = 0
7 for k in numberGames:
8     total += numberGames[k]
9
10 print(len(numberGames) + total)
```

A. 8 B. 12 C. 24 D. 30 E. 33

31. What is printed by the following code?

```
1 foo = {1:'1', 2:'2', 3:'3'}
2 foo = {}
3 print(len(foo))
```

A. 0 B. 1 C. 2 D. 3 E. Code results in an error.

32. What is printed by the following code?

```
1 foo = {1:'1', 2:'2', 3:'3'}
2 del foo[1]
3 foo[1] = '10'
4 del foo[2]
5 print(len(foo))
```

A. 1 B. 2 C. 3 D. 4 E. Code results in an error.

33. What is printed by the following code?

```
1 names = ['Amir', 'Barry', 'Chales', 'Dao']
2 print(names[-1][-1])
```

A. A B. r C. Amir D. Dao **E. o** F. Code results in an error.

34. What is printed by the following code?

```
1 names1 = ['Amir', 'Barry', 'Chales', 'Dao']
2
3 if 'amir' in names1:
4     print(1)
5 else:
6     print(2)
```

A. 1 **B. 2** C. Code results in an error.

35. What is printed by the following code?

```
1 names1 = ['Amir', 'Barry', 'Chales', 'Dao']
2 names2 = [name.lower() for name in names1]
3
4 print(names2[2][0])
```

A. i B. a **C. c** D. C E. Code results in an error.

36. What is printed by the following code?

```
1 numbers = [1, 2, 3, 4]
2
3 numbers.append([5,6,7,8])
4
5 print(len(numbers))
```

A. 4 **B. 5** C. 8 D. 12 E. Code results in an error.

37. What is printed by the following code?

```
1 list1 = [1, 2, 3, 4]
2 list2 = [5, 6, 7, 8]
3
4 print(len(list1 + list2))
```

A. 2 B. 4 C. 5 **D. 8** E. Code results in an error.

38. What is printed by the following code?

```
1 a = 1
2 b = 2
3 a,b = b,a
4
5 output = "{} {}".format(a, b)
6 print(output)
```

A. 1 2 **B. 2 1** C. Code results in an error.

39. What is printed by the following code?

```
1 def myfunc(x, y, z, a):
2     print(x + y)
3
4 nums = [1, 2, 3, 4]
5
6 myfunc(*nums)
```

A. 1 **B. 3** C. 6 D. 10 E. Code results in an error.

40. What is printed by the following code?

```
1 import numpy as np
2 ary = np.array([1,2,3,5,8])
3 ary = ary + 1
4 print (ary[1])
```

A. 1 B. 2 **C. 3** D. 4 E. 5

41. What is printed by the following code?

```
1 import numpy as np
2
3 a = np.array([1,2,3,5,8])
4 b = np.array([0,3,4,2,1])
5 c = a + b
6 c = c*a
7
8 print (c[2])
```

A. 7 B. 10 **C. 21** D. 28 E. Code results in an error.

42. What is printed by the following code?

```
1 import numpy as np
2 a = np.array([1,2,3,5,8])
3 print (a.ndim)
```

A. 0 **B. 1** C. 2 D. 3 E. Code results in an error.

43. What is printed by the following code?

```
1 import numpy as np
2 a = np.array([[1,2,3],[0,1,4]])
3 print (a.size)
```

A. 0 B. 1 C. 2 D. 5 **E. 6** F. None of the above.

44. What is printed by the following code?

```
1 import numpy as np
2
3 a = np.array([[0, 1, 2], [3, 4, 5]])
4 b = a.sum(axis=1)
5 print (b)
```

A. [3 12] B. [3 5 7] C. 3 D. 12 E. None of the above.

45. What is printed by the following code?

```
1 import numpy as np
2
3 a = np.array([[1, 2, 3], [4, 5, 6]])
4 a += 3
5 print(a[1,2])
```

A. 2 B. 4 **C. 9** D. Code results in an error. E. None of the above.