

MCQ
CHAPTER - REVISION TOUR
CLASS TEST - I

Class XII
Time: 40 Min

Sub : CS (083)
Max Marks: 20

1. Which of these is not a core data type?
 - a) Lists
 - b) Dictionary
 - c) Tuples
 - d) Class
2. Given a function that does not return any value, What value is thrown by default when executed in shell.
 - a) int
 - b) bool
 - c) void
 - d) None
3. Following set of commands are executed in shell, what will be the output?

```
>>>str="hello"
>>>str[:2]
>>>
```

 - a) he
 - b) lo
 - c) olleh
 - d) hello
4. Which of the following will run without errors?
 - a) round(45.8)
 - b) round(6352.898,2,5)
 - c) round()
 - d) round(7463.123,2,1)
5. What is the return type of function id ?
 - a) int
 - b) float
 - c) bool
 - d) dict
6. In python we do not specify types, it is directly interpreted by the compiler, so consider the following operation to be performed.

```
>>>x = 13 / 2
```

objective is to make sure x has an integer value, select all that apply (python 3.xx)
 - a) x = 13 // 2
 - b) x = int(13 / 2)
 - c) x = 13 % 2
 - d) All of the mentioned
7. What error occurs when you execute?

```
apple = mango
```

 - a) SyntaxError
 - b) NameError
 - c) ValueError
 - d) TypeError

8. Carefully observe the code and give the answer.

```
def example(a):
```

```
    a = a + '2'
```

```
    a = a*2
```

```
    return a
```

```
>>>example("hello")
```

a) indentation Error

b) cannot perform mathematical operation on strings

c) hello2

d) hello2hello2

9. What data type is the object below ?

```
L = [1, 23, 'hello', 1].
```

a) list

b) dictionary

c) array

d) tuple

10. In order to store values in terms of key and value we use what core data type.

a) list

b) tuple

c) class

d) dictionary

11. Which of the following results in a SyntaxError ?

a) "Once upon a time...", she said.'

b) "He said, 'Yes!'"

c) '3\'

d) "'That's okay'"

12. What is the average value of the code that is executed below ?

```
>>>grade1 = 80
```

```
>>>grade2 = 90
```

```
>>>average = (grade1 + grade2) / 2
```

a) 85

b) 85.1

c) 95

d) 95.1

13. Select all options that print

```
hello-how-are-you
```

a) print('hello', 'how', 'are', 'you')

b) print('hello', 'how', 'are', 'you' + '-' * 4)

c) print('hello-' + 'how-are-you')

d) print('hello' + '-' + 'how' + '-' + 'are' + 'you')

14. What is the return value of trunc() ?

a) int

b) bool

- c) float
- d) None

15. What is the output of `print 0.1 + 0.2 == 0.3`?

- a) True
- b) False
- c) Machine dependent
- d) Error

16. Which of the following is not a complex number?

- a) `k = 2 + 3j`
- b) `k = complex(2, 3)`
- c) `k = 2 + 3I`
- d) `k = 2 + 3J`

17. What is the type of `inf`?

- a) Boolean
- b) Integer
- c) Float
- d) Complex

18. What does `~4` evaluate to?

- a) -5
- b) -4
- c) -3
- d) +3

19. What does `~~~~~5` evaluate to?

- a) +5
- b) -11
- c) +11
- d) -5

20. Which of the following is incorrect?

- a) `x = 0b101`
- b) `x = 0x4f5`
- c) `x = 19023`
- d) `x = 03964`

MCQ
CHAPTER - REVISION TOUR
CLASS TEST – II

Class XII
Time: 40 Min

Sub : CS (083)
Max Marks: 20

1. What is the output of the following?

```
x = ['ab', 'cd']
```

```
for i in x:
```

```
    i.upper()
```

```
print(x)
```

a) ['ab', 'cd'].

b) ['AB', 'CD'].

c) [None, None].

d) none of the mentioned

2. What is the output of the following?

```
x = ['ab', 'cd']
```

```
for i in x:
```

```
    x.append(i.upper())
```

```
print(x)
```

a) ['AB', 'CD'].

b) ['ab', 'cd', 'AB', 'CD'].

c) ['ab', 'cd'].

d) none of the mentioned

3. What is the output of the following?

```
i = 1
```

```
while True:
```

```
    if i%3 == 0:
```

```
        break
```

```
    print(i)
```

```
    i += 1
```

a) 1 2

b) 1 2 3

c) error

d) none of the mentioned

4. What is the output of the following?

```
i = 1
```

```
while True:
```

```
    if i%007 == 0:
```

```
        break
```

```
    print(i)
```

```
    i += 1
```

a) 1 2 3 4 5 6

b) 1 2 3 4 5 6 7

c) error

d) none of the mentioned

5. What is the output of the following?

```
i = 5
while True:
    if i%11 == 0:
        break
    print(i)
    i += 1
```

- a) 5 6 7 8 9 10
- b) 5 6 7 8
- c) 5 6
- d) error

6. What is the output of the following?

```
i = 5
while True:
    if i%9 == 0:
        break
    print(i)
    i += 1
```

- a) 5 6 7 8
- b) 5 6 7 8 9
- c) 5 6 7 8 9 10 11 12 13 14 15
- d) error

7. What is the output of the following?

```
i = 1
while True:
    if i%2 == 0:
        break
    print(i)
    i += 2
```

- a) 1
- b) 1 2
- c) 1 2 3 4 5 6 ...
- d) 1 3 5 7 9 11 ...

8. What is the output of the following?

```
i = 2
while True:
    if i%3 == 0:
        break
    print(i)
    i += 2
```

- a) 2 4 6 8 10 ...
- b) 2 4
- c) 2 3
- d) error

9. What is the output of the following?

```
i = 1
```

```
while False:
    if i%2 == 0:
        break
    print(i)
    i += 2
```

- a) 1
- b) 1 3 5 7 ...
- c) 1 2 3 4 ...
- d) none of the mentioned

10. What is the output of the following?

```
True = False
while True:
    print(True)
    break
```

- a) True
- b) False
- c) None
- d) none of the mentioned

11. What is the output of the following?

```
i = 0
while i < 5:
    print(i)
    i += 1
    if i == 3:
        break
```

- ```
else:
 print(0)
```
- a) 0 1 2 0
  - b) 0 1 2
  - c) error
  - d) none of the mentioned

12. What is the output of the following?

```
i = 0
while i < 3:
 print(i)
 i += 1
else:
 print(0)
```

- a) 0 1 2 3 0
- b) 0 1 2 0
- c) 0 1 2
- d) error

13. What is the output of the following?

```
x = "abcdef"
while i in x:
 print(i, end=" ")
```

- a) a b c d e f
- b) abcdef
- c) i i i i i ...
- d) error

14. What is the output of the following?

```
x = "abcdef"
i = "i"
while i in x:
 print(i, end=" ")
a) no output
b) i i i i i ...
c) a b c d e f
d) abcdef
```

15. What is the output of the following?

```
x = 'abcd'
for i in x:
 print(i.upper())
a) a b c d
b) A B C D
c) a B C D
d) error
```

16. What is the output of the following?

```
x = 'abcd'
for i in range(len(x)):
 i.upper()
print (x)
a) a b c d
b) 0 1 2 3
c) error
d) none of the mentioned
```

17. What is the output of the following?

```
x = 'abcd'
for i in range(len(x)):
 x = 'a'
 print(x)
a) a
b) abcd abcd abcd
c) a a a a
d) none of the mentioned
```

18. What is the output of the following?

```
x = 'abcd'
for i in range(len(x)):
 print(x)
 x = 'a'
a) a
b) abcd abcd abcd abcd
c) a a a a
d) none of the mentioned
```

19. What is the output of the following?

```
x = 123
for i in x:
 print(i)
```

- a) 1 2 3
- b) 123
- c) error
- d) none of the mentioned

20 . What is the output of the following?

```
d = {0: 'a', 1: 'b', 2: 'c'}
```

```
for i in d:
 print(i)
```

- a) 0 1 2
- b) a b c
- c) 0 a 1 b 2 c
- d) none of the mentioned

Answer 1: a

Explanation: The function upper() does not modify a string in place, it returns a new string which isn't being stored anywhere

Answer 2: d

Explanation: The loop does not terminate as new elements are being added to the list in each iteration.

Answer 3: c

Explanation: SyntaxError, there shouldn't be a space between + and = in +=.

Answer 4: a

Explanation: Control exits the loop when i become

Answer 5: b

Explanation: 0011 is an octal number.

Answer6: d

Explanation: 9 isn't allowed in an octal number.

Answer 7: d

Explanation: The loop does not terminate since i is never an even number.

Answer 8: b

Explanation: The numbers 2 and 4 are printed. The next value of i is 6 which is divisible by 3 and hence control exits the loop

Answer 9: d

Explanation: Control does not enter the loop because of False..

Answer 10 : d

Explanation: SyntaxError, True is a keyword and it's value cannot be changed.

Answer 11: b

Explanation: The else part is not executed if control breaks out of the loop.

Answer 12: b

Explanation: The else part is executed when the condition in the while statement is false.

Answer 13: d

Explanation: NameError, i is not defined.

Answer 14: a

Explanation: "i" is not in "abcdef".

Answer 15: b

Explanation: The instance of the string returned by upper() is being printed.

Answer 16 : c

Explanation: Objects of type int have no attribute upper().

Answer 17: c

Explanation: range() is computed only at the time of entering the loop.

Answer 18 : d

Explanation: abcd a a a is the output as x is modified only after 'abcd' has been printed once.

Answer 19: c

Explanation: Objects of type int are not iterable.

Answer 20: a

Explanation: Loops over the keys of the dictionary.

**MCQ**  
**CHAPTER - REVISION TOUR**  
**CLASS TEST – III**

Class XII  
Time: 40 Min

Sub : CS (083)  
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1. What is the output when following statement is executed ?

```
>>>"a"+"bc"
```

- a) a
- b) bc
- c) bca
- d) abc

2. What is the output when following statement is executed ?

```
>>>"abcd"[2:]
```

- a) a
- b) ab
- c) cd
- d) dc

3. The output of executing string.ascii\_letters can also be achieved by:

- a) string.ascii\_lowercase\_string.digits
- b) string.ascii\_lowercase+string.ascii\_uppercase
- c) string.letters
- d) string.lowercase\_string.uppercase

4. What is the output when following code is executed ?

```
>>> str1 = 'hello'
>>> str2 = ','
>>> str3 = 'world'
>>> str1[-1:]
```

- a) olleh
- b) hello
- c) h
- d) o

5. What arithmetic operators cannot be used with strings ?

- a) +
- b) \*
- c) -
- d) All of the mentioned

6. What is the output when following code is executed ?

```
>>>print r"\nhello"
```

The output is

- a) a new line and hello
- b) \nhello
- c) the letter r and then hello
- d) error

7. What is the output when following statement is executed ?

>>>print('new' 'line')

- a) Error
- b) Output equivalent to print 'new\nline'
- c) newline
- d) new line

8. What is the output when following statement is executed ?

>>> print('x\97\x98')

- a) Error
- b) 97  
98
- c) x\97
- d) \x97\x98

9. What is the output when following code is executed ?

>>>str1="helloworld"

>>>str1[::-1]

- a) dlrowolleh
- b) hello
- c) world
- d) helloworld

10. print(0xA + 0xB + 0xC) :

- a) 0xA0xB0xC
- b) Error
- c) 0x22
- d) 33

11. What is the output of the following?

print("xyzxyzxzyy".count('yy'))

- a) 2
- b) 0
- c) error
- d) none of the mentioned

12. What is the output of the following?

print("xyzxyzxzyy".count('yy', 1))

- a) 2
- b) 0
- c) 1
- d) none of the mentioned

13. What is the output of the following?

print("xyzxyzxzyy".count('yy', 2))

- a) 2
- b) 0
- c) 1
- d) none of the mentioned

14. What is the output of the following?

print("xyzxyzxzyy".count('xy', 0, 100))

- a) 2
- b) 0
- c) 1
- d) error

15. What is the output of the following?

```
print("xyyzxyzxzyy".count('xyy', 2, 11))
```

- a) 2
- b) 0
- c) 1
- d) error

16. What is the output of the following?

```
print("xyyzxyzxzyy".count('xyy', -10, -1))
```

- a) 2
- b) 0
- c) 1
- d) error

- 1 Answer: d
- 2 Answer: c
- 3 Answer: b
- 4 Answer: d
- 5 Answer: c
- 6 Answer: b
- 7 Answer: c
- 8 Answer: c
- 9 Answer: a
- 10 Answer: d
- 11 Answer: a
- 12 Answer: a
- 13 Answer: c
- 14 Answer: a
- 15 Answer: b
- 16 Answer: b

**MCQ**  
**CHAPTER - REVISION TOUR**  
**CLASS TEST – IV**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

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1. Process of removing errors called
  - a) Error Free
  - b) Debug
  - c) Syntax Error
  - d) Exception
2. Which of the following commands will create a list?
  - a) list1 = list()
  - b) list1 = [].
  - c) list1 = list([1, 2, 3])
  - d) all of the mentioned
3. What is the output when we execute list("hello")?
  - a) ['h', 'e', 'l', 'l', 'o'].
  - b) ['hello'].
  - c) ['llo'].
  - d) ['olleh'].
4. Suppose list Example is ['h','e','l','l','o'], what is len(list Example)?
  - a) 5
  - b) 4
  - c) None
  - d) Error
5. Suppose list1 is [2445, 133, 12454, 123], what is max(list1) ?
  - a) 2445
  - b) 133
  - c) 12454
  - d) 123
6. Suppose list1 is [3, 5, 25, 1, 3], what is min(list1) ?
  - a) 3
  - b) 5
  - c) 25
  - d) 1
7. Suppose list1 is [1, 5, 9], what is sum(list1) ?
  - a) 1
  - b) 9
  - c) 15
  - d) Error
8. To shuffle the list(say list1) what function do we use ?
  - a) list1.shuffle ()
  - b) shuffle(list1)
  - c) random.shuffle(list1)
  - d) random.shuffleList(list1)
9. Suppose list1 is [4, 2, 2, 4, 5, 2, 1, 0], which of the following is correct syntax for slicing operation?
  - a) print(list1[0])
  - b) print(list1[:2])

- c) `print(list1[:-2])`  
d) all of the mentioned
10. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1] ?  
a) Error  
b) None  
c) 25  
d) 2
11. Suppose list1 is [2, 33, 222, 14, 25], What is list1[:-1] ?  
a) [2, 33, 222, 14].  
b) Error  
c) 25  
d) [25, 14, 222, 33, 2].
12. What is the output when following code is executed ?  
`>>>names = ['Amir', 'Bear', 'Charlton', 'Daman']`  
`>>>print(names[-1][-1])`  
a) A  
b) Daman  
c) Error  
d) n
13. What is the output when following code is executed ?  
`names1 = ['Amir', 'Bear', 'Charlton', 'Daman']`  
`names2 = names1`  
`names3 = names1[:]`  
`names2[0] = 'Alice'`  
`names3[1] = 'Bob'`  
`sum = 0`  
for ls in (names1, names2, names3):  
    if ls[0] == 'Alice':  
        sum += 1  
    if ls[1] == 'Bob':  
        sum += 10  
print sum  
a) 11  
b) 12  
c) 21  
d) 22
14. Suppose list1 is [1, 3, 2], What is list1 \* 2 ?  
a) [2, 6, 4].  
b) [1, 3, 2, 1, 3].  
c) [1, 3, 2, 1, 3, 2] .  
D) [1, 3, 2, 3, 2, 1].
15. Suppose list1 = [0.5 \* x for x in range(0, 4)], list1 is :  
a) [0, 1, 2, 3].  
b) [0, 1, 2, 3, 4].  
c) [0.0, 0.5, 1.0, 1.5].  
d) [0.0, 0.5, 1.0, 1.5, 2.0].
16. What is the output when following code is executed ?

```
>>>list1 = [11, 2, 23]
```

```
>>>list2 = [11, 2, 2]
```

```
>>>list1 < list2 is
```

- a) True
- b) False
- c) Error
- d) None

17. To add a new element to a list we use which command ?

- a) list1.add(5)
- b) list1.append(5)
- c) list1.addLast(5)
- d) list1.addEnd(5)

18. To insert 5 to the third position in list1, we use which command ?

- a) list1.insert(3, 5)
- b) list1.insert(2, 5)
- c) list1.add(3, 5)
- d) list1.append(3, 5)

19. To remove string "hello" from list1, we use which command ?

- a) list1.remove("hello")
- b) list1.remove(hello)
- c) list1.removeAll("hello")
- d) list1.removeOne("hello")

20. Suppose list1 is [3, 4, 5, 20, 5], what is list1.index(5) ?

- a) 0
- b) 1
- c) 4
- d) 2

Answers

1 – b 2 – d, 3-a,4-a,5-c,6-d,7-c,8c,9-d,10-c,11-a,12-d,13-b,14-c,15-c,16-b,17-b,18-a,19-a,20-d

**MCQ**  
**CHAPTER - REVISION TOUR**  
**CLASS TEST -V**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

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1. Which of the following is a Python tuple?

- a) [1, 2, 3].
- b) (1, 2, 3)
- c) {1, 2, 3}
- d) {}

2. Suppose t = (1, 2, 4, 3), which of the following is incorrect?

- a) print(t[3])
- b) t[3] = 45
- c) print(max(t))
- d) print(len(t))

3. What will be the output?

```
>>>t=(1,2,4,3)
>>>t[1:3]
a) (1, 2)
b) (1, 2, 4)
c) (2, 4)
d) (2, 4, 3)
```

4. What will be the output?

```
>>>t=(1,2,4,3)
>>>t[1:-1]
a) (1, 2)
b) (1, 2, 4)
c) (2, 4)
d) (2, 4, 3)
```

5. What will be the output?

```
>>>t = (1, 2, 4, 3, 8, 9)
>>>[t[i] for i in range(0, len(t), 2)]
a) [2, 3, 9].
b) [1, 2, 4, 3, 8, 9].
c) [1, 4, 8].
d) (1, 4, 8)
```

6. What will be the output?

```
d = {"john":40, "peter":45}
d["john"]
a) 40
b) 45
c) "john"
d) "peter"
```

7. What will be the output?

```
>>>t = (1, 2)
>>>2 * t
a) (1, 2, 1, 2)
b) [1, 2, 1, 2].
c) (1, 1, 2, 2)
d) [1, 1, 2, 2].
```

8. What will be the output?

```
>>>t1 = (1, 2, 4, 3)
>>>t2 = (1, 2, 3, 4)
>>>t1 < t2
a) True
b) False
c) Error
d) None
```

9. What will be the output?

```
>>>my_tuple = (1, 2, 3, 4)
>>>my_tuple.append((5, 6, 7))
>>>print len(my_tuple)
a) 1
b) 2
c) 5
d) Error
```

10. What will be the output?

```
numberGames = {}
numberGames[(1,2,4)] = 8
numberGames[(4,2,1)] = 10
numberGames[(1,2)] = 12
sum = 0
for k in numberGames:
 sum += numberGames[k]
print len(numberGames) + sum
a) 30
b) 24
c) 33
d) 12
```

11. What is the data type of (1)?

a) Tuple  
b) Integer  
c) List  
d) Both tuple and integer

12. If a=(1,2,3,4), a[1:-1] is

a) Error, tuple slicing doesn't exist  
b) [2,3].  
c) (2,3,4)  
d) (2,3)

13. What is the output of the following code?

```
>>> a=(1,2,(4,5))
```

```
>>> b=(1,2,(3,4))
```

```
>>> a<b
```

- a) False
- b) True
- c) Error, < operator is not valid for tuples
- d) Error, < operator is valid for tuples but not if there are sub-tuples

14. What is the output of the following piece of code when executed in Python shell?

```
>>> a=("Check")*3
```

```
>>> a
```

- a) ('Check','Check','Check')
- b) \* Operator not valid for tuples
- c) ('CheckCheckCheck')
- d) Syntax error

15. What is the output of the following code?

```
>>> a=(1,2,3,4)
```

```
>>> del(a[2])
```

- a) Now, a=(1,2,4)
- b) Now, a=(1,3,4)
- c) Now a=(3,4)
- d) Error as tuple is immutable

16. What is the output of the following code?

```
>>> a=(2,3,4)
```

```
>>> sum(a,3)
```

- a) Too many arguments for sum() method
- b) The method sum() doesn't exist for tuples
- c) 12
- d) 9

17. Is the following piece of code valid?

```
>>> a=(1,2,3,4)
```

```
>>> del a
```

- a) No because tuple is immutable
- b) Yes, first element in the tuple is deleted
- c) Yes, the entire tuple is deleted
- d) No, invalid syntax for del method

18. What type of data is: a=[(1,1),(2,4),(3,9)]?

- a) Array of tuples
- b) List of tuples
- c) Tuples of lists
- d) Invalid type

19. What is the output of the following piece of code?

```
>>> a=(0,1,2,3,4)
```

```
>>> b=slice(0,2)
```

```
>>> a[b]
```

- a) Invalid syntax for slicing
- b) [0,2].
- c) (0,1)

d) (0,2)

20. Is the following piece of code valid?

```
>>> a=(1,2,3)
```

```
>>> b=('A','B','C')
```

```
>>> c=zip(a,b)
```

a) Yes, c will be ((1,2,3),('A','B','C'))

b) Yes, c will be ((1,2,3),('A','B','C'))

c) No because tuples are immutable

d) No because the syntax for zip function isn't valid

**Answers**

1 – b 2 – b, 3-c,4-c,5-c,6-a,7-a,8-b,9-d,10-c,11-b,12-d,13-a,14-c,15-d,16-c,17-c,18-b,19-c,20-a

**MCQ**  
**CHAPTER - FUNCTIONS**  
**CLASS TEST -VI**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

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1. Which of the following is the use of function in python?  
a) Functions are reusable pieces of programs  
b) Functions don't provide better modularity for your application  
c) you can't also create your own functions  
d) All of the mentioned

Answer: a

Explanation: Functions are reusable pieces of programs. They allow you to give a name to a block of statements, allowing you to run that block using the specified name anywhere in your program and any number of times.

2. Which keyword is use for function?

- a) Fun  
b) Define  
c) Def  
d) Function

Answer: c

3. What is the output of the below program?

```
def sayHello():
 print('Hello World!')
sayHello()
sayHello()
```

- a) Hello World!  
Hello World!  
b) 'Hello World!'  
'Hello World!'  
c) Hello  
Hello  
d) None of the mentioned

Answer: a

Explanation: Functions are defined using the def keyword. After this keyword comes an identifier name for the function, followed by a pair of parentheses which may enclose some names of variables, and by the final colon that ends the line. Next follows the block of statements that are part of this function.

```
def sayHello():
 print('Hello World!') # block belonging to the function
End of function
```

```
sayHello() # call the function
sayHello() # call the function again
```

4. What is the output of the below program?

```
def printMax(a, b):
 if a > b:
 print(a, 'is maximum')
 elif a == b:
 print(a, 'is equal to', b)
 else:
```

```
print(b, 'is maximum')
printMax(3, 4)
a) 3
b) 4
c) 4 is maximum
d) None of the mentioned
```

Answer: c

Explanation: Here, we define a function called printMax that uses two parameters called a and b. We find out the greater number using a simple if..else statement and then print the bigger number.

5. What is the output of the below program ?

```
x = 50
def func(x):
 print('x is', x)
 x = 2
 print('Changed local x to', x)
func(x)
print('x is now', x)
a) x is now 50
b) x is now 2
c) x is now 100
d) None of the mentioned
```

Answer: a

Explanation: The first time that we print the value of the name x with the first line in the function's body, Python uses the value of the parameter declared in the main block, above the function definition.

Next, we assign the value 2 to x. The name x is local to our function. So, when we change the value of x in the function, the x defined in the main block remains unaffected.

With the last print function call, we display the value of x as defined in the main block, thereby confirming that it is actually unaffected by the local assignment within the previously called function.

6. What is the output of the below program?

```
x = 50
def func():
 global x
 print('x is', x)
 x = 2
 print('Changed global x to', x)
func()
print('Value of x is', x)
a) x is 50
Changed global x to 2
Value of x is 50
b) x is 50
Changed global x to 2
Value of x is 2
c) x is 50
Changed global x to 50
Value of x is 50
d) None of the mentioned
```

Answer: b

Explanation: The global statement is used to declare that x is a global variable – hence, when we assign a value to x inside the function, that change is reflected when we use the value of x in the main block.

7. What is the output of below program?

```
def say(message, times = 1):
 print(message * times)
```

```
say('Hello')
```

```
say('World', 5)
```

a) Hello

WorldWorldWorldWorldWorld

b) Hello

World 5

c) Hello

World,World,World,World,World

d) Hello

HelloHelloHelloHelloHello

Answer: a

Explanation: For some functions, you may want to make some parameters optional and use default values in case the user does not want to provide values for them. This is done with the help of default argument values. You can specify default argument values for parameters by appending to the parameter name in the function definition the assignment operator (=) followed by the default value.

The function named say is used to print a string as many times as specified. If we don't supply a value, then by default, the string is printed just once. We achieve this by specifying a default argument value of 1 to the parameter times.

In the first usage of say, we supply only the string and it prints the string once. In the second usage of say, we supply both the string and an argument 5 stating that we want to say the string message 5 times.

8. What is the output of the below program?

```
def func(a, b=5, c=10):
```

```
 print('a is', a, 'and b is', b, 'and c is', c)
```

```
func(3, 7)
```

```
func(25, c = 24)
```

```
func(c = 50, a = 100)
```

a) a is 7 and b is 3 and c is 10

a is 25 and b is 5 and c is 24

a is 5 and b is 100 and c is 50

b) a is 3 and b is 7 and c is 10

a is 5 and b is 25 and c is 24

a is 50 and b is 100 and c is 5

c) a is 3 and b is 7 and c is 10

a is 25 and b is 5 and c is 24

a is 100 and b is 5 and c is 50

d) None of the mentioned

Answer: c

Explanation: If you have some functions with many parameters and you want to specify only some of them, then you can give values for such parameters by naming them – this is called keyword arguments – we use the name (keyword) instead of the position (which we have been using all along) to specify the arguments to the function.

The function named func has one parameter without a default argument value, followed by two parameters with default argument values.

In the first usage, func(3, 7), the parameter a gets the value 3, the parameter b gets the value 7 and c gets the default value of 10.

In the second usage func(25, c=24), the variable a gets the value of 25 due to the position of the argument. Then, the parameter c gets the value of 24 due to naming i.e. keyword arguments. The variable b gets the default value of 5.

In the third usage func(c=50, a=100), we use keyword arguments for all specified values. Notice that we are specifying the value for parameter c before that for a even though a is defined before c in the function definition.

9. What is the output of below program?

```
def maximum(x, y):
 if x > y:
 return x
 elif x == y:
 return 'The numbers are equal'
 else:
 return y
print(maximum(2, 3))
```

- a) 2
- b) 3
- c) The numbers are equal
- d) None of the mentioned

Answer: b

Explanation: The maximum function returns the maximum of the parameters, in this case the numbers supplied to the function. It uses a simple if..else statement to find the greater value and then returns that value.

10. Which of the following is a features of DocString?

- a) Provide a convenient way of associating documentation with Python modules, functions, classes, and methods
- b) All functions should have a docstring
- c) Docstrings can be accessed by the `__doc__` attribute on objects
- d) All of the mentioned

Answer: d

Explanation: Python has a nifty feature called documentation strings, usually referred to by its shorter name docstrings. DocStrings are an important tool that you should make use of since it helps to document the program better and makes it easier to understand

11. Which are the advantages of functions in python?

- a) Reducing duplication of code
- b) Decomposing complex problems into simpler pieces
- c) Improving clarity of the code
- d) All of the mentioned

Answer: d

12. What are the two main types of functions?

- a) Custom function
- b) Built-in function & User defined function

- c) User function
- d) System function

Answer: b

Explanation: Built-in functions and user defined ones. The built-in functions are part of the Python language. Examples are: dir(), len() or abs(). The user defined functions are functions created with the def keyword.

13. Where is function defined?

- a) Module
- b) Class
- c) Another function
- d) All of the mentioned

Answer: d

Explanation: Functions can be defined inside a module, a class or another function.

14. What is called when a function is defined inside a class?

- a) Module
- b) Class
- c) Another function
- d) Method

Answer: d

Explanation: None.

15. Which of the following is the use of id() function in python?

- a) Id returns the identity of the object
- b) Every object doesn't have a unique id
- c) All of the mentioned
- d) None of the mentioned

Answer: a

Explanation: Each object in Python has a unique id. The id() function returns the object's id.

16. Which of the following refers to mathematical function?

- a) sqrt
- b) rhombus
- c) add
- d) rhombus

Answer: a

Explanation: Functions that are always available for usage, functions that are contained within external modules, which must be imported and functions defined by a programmer with the def keyword.

Eg: math import sqrt

A sqrt() function is imported from the math module.

17. What is the output of below program?

```
def cube(x):
 return x * x * x
```

```
x = cube(3)
```

```
print x
```

- a) 9
- b) 3
- c) 27

d) 30

Answer: c

Explanation: A function is created to do a specific task. Often there is a result from such a task. The return keyword is used to return values from a function. A function may or may not return a value. If a function does not have a return keyword, it will send a none value.

18. What is the output of the below program?

```
def C2F(c):
 return c * 9/5 + 32
print C2F(100)
print C2F(0)
```

a) 212

32

b) 314

24

c) 567

98

d) None of the mentioned

Answer: a

Explanation: The code shown above is used to convert a temperature in degree celsius to fahrenheit.

19. What is the output of the below program?

```
def power(x, y=2):
 r = 1
 for i in range(y):
 r = r * x
 return r
```

```
print power(3)
```

```
print power(3, 3)
```

a) 212

32

b) 9

27

c) 567

98

d) None of the mentioned

Answer: b

Explanation: The arguments in Python functions may have implicit values. An implicit value is used, if no value is provided. Here we created a power function. The function has one argument with an implicit value. We can call the function with one or two arguments.

20. What is the output of the below program?

```
def sum(*args):
 """Function returns the sum
 of all values"""
 r = 0
 for i in args:
 r += i
 return r
```

```
print sum.__doc__
```

```
print sum(1, 2, 3)
```

```
print sum(1, 2, 3, 4, 5)
```

a) 6

15

b) 6

100

c) 123

12345

d) None of the mentioned

Answer: a

Explanation: We use the \* operator to indicate, that the function will accept arbitrary number of arguments. The sum() function will return the sum of all arguments. The first string in the function body is called the function documentation string. It is used to document the function. The string must be in triple quotes.

**MCQ**  
**CHAPTER - FILE HANDLING:**  
**CLASS TEST -VII**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. To open a file c:\scores.txt for reading, we use

- a) infile = open("c:\scores.txt", "r")
- b) infile = open("c:\\scores.txt", "r")
- c) infile = open(file = "c:\scores.txt", "r")
- d) infile = open(file = "c:\\scores.txt", "r")

Answer: b

Explanation: Execute help(open) to get more details.

2. To open a file c:\scores.txt for writing, we use

- a) outfile = open("c:\scores.txt", "w")
- b) outfile = open("c:\\scores.txt", "w")
- c) outfile = open(file = "c:\scores.txt", "w")
- d) outfile = open(file = "c:\\scores.txt", "w")

Answer: b

Explanation: w is used to indicate that file is to be written to.

3. To open a file c:\scores.txt for appending data, we use

- a) outfile = open("c:\\scores.txt", "a")
- b) outfile = open("c:\scores.txt", "rw")
- c) outfile = open(file = "c:\scores.txt", "w")
- d) outfile = open(file = "c:\\scores.txt", "w")

4. Which of the following statements are true?

- a) When you open a file for reading, if the file does not exist, an error occurs
- b) When you open a file for writing, if the file does not exist, a new file is created
- c) When you open a file for writing, if the file exists, the existing file is overwritten with the new file
- d) All of the mentioned

Answer: d

Explanation: The program will throw an error.

5. To read two characters from a file object infile, we use

- a) infile.read(2)
- b) infile.read()
- c) infile.readline()
- d) infile.readlines()

Answer: a

Explanation: Execute in the shell to verify.

6. To read the entire remaining contents of the file as a string from a file object infile, we use

- a) infile.read(2)
- b) infile.read()
- c) infile.readline()
- d) infile.readlines()

Answer: b

Explanation: read function is used to read all the lines in a file.

7. What is the output?

```
f = None
```

```
for i in range (5):
```

```
 with open("data.txt", "w") as f:
```

```
 if i > 2:
```

```
 break
```

```
print(f.closed)
```

a) True

b) False

c) None

d) Error

Answer: a

Explanation: The WITH statement when used with open file guarantees that the file object is closed when the with block exits.

8. To read the next line of the file from a file object infile, we use

a) infile.read(2)

b) infile.read()

c) infile.readline()

d) infile.readlines()

Answer: c

Explanation: Execute in the shell to verify.

9. To read the remaining lines of the file from a file object infile, we use

a) infile.read(2)

b) infile.read()

C) infile.readline()

d) infile.readlines()

Answer: d

Explanation: Execute in the shell to verify.

10. The readlines() method returns

a) str

b) a list of lines

c) a list of single characters

d) a list of integers

Answer: b

Explanation: Every line is stored in a list and returned.

**MCQ**  
**CHAPTER PYTHON LIBRARIES – SYS MODULE**  
**CLASS TEST – VIII**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. Which of the following functions can help us to find the version of python that we are currently working on?

- a) sys.version
- b) sys.version()
- c) sys.version(0)
- d) sys.version(1)

Answer: a

Explanation: The function sys.version can help us to find the version of python that we are currently working on. For example, 3.5.2, 2.7.3 etc. this function also returns the current date, time, bits etc along with the version.

2. Which of the following functions is not defined under the sys module?

- a) sys.platform
- b) sys.path
- c) sys.readline
- d) sys.argv

Answer: c

Explanation: The functions sys.platform, sys.path and sys.argv are defined under the sys module. The function sys.readline is not defined. However, sys.stdin.readline is defined.

3. The output of the functions len("abc") and sys.getsizeof("abc") will be the same.

State whether true or false.

- a) True
- b) False

Answer: b

Explanation: The function len returns the length of the string passed, and hence it's output will be 3. The function getsizeof, present under the sys module returns the size of the object passed. It's output will be a value much larger than 3. Hence the above statement is false.

4. What is the output of the code shown below, if the code is run on Windows operating system?

```
import sys
if sys.platform[:2]== 'wi':
 print("Hello")
```

- a) Error
- b) Hello
- c) No output
- d) Junk value

Answer: b

Explanation: The output of the function `sys.platform[:2]` is equal to 'wi', when this code is run on windows operating system. Hence the output printed is 'hello'.

5. What is the output of the following line of code, if the `sys` module has already been imported?

```
sys.stdout.write("hello world")
```

- a) helloworld
- b) hello world10
- c) hello world11
- d) error

Answer: c

Explanation: The function shown above prints the given string along with the length of the string. Hence the output of the function shown above will be hello world11.

6. What is the output of the code shown below?

```
import sys
sys.stdin.readline()
Sanfoundry
```

- a) 'Sanfoundry\n'
- b) 'Sanfoundry'
- c) 'Sanfoundry10'
- d) Error

Answer: a

Explanation: The function shown above works just like `raw_input`. Hence it automatically adds a '\n' character to the input string. Therefore, the output of the function shown above will be: Sanfoundry\n.

7. What is the output of this code?

```
import sys
eval(sys.stdin.readline())
"India"
```

- a) India5
- b) India
- c) 'India\n'
- d) 'India'

Answer: d

Explanation: The function shown above evaluates the input into a string. Hence if the input entered is enclosed in double quotes, the output will be enclosed in single quotes. Therefore, the output of this code is 'India'.

8. What is the output of the code shown below?

```
import sys
eval(sys.stdin.readline())
```

Computer

- a) Error
- b) 'Computer\n'
- c) Computer8
- d) Computer

Answer: a

Explanation: The code shown above will result in an error. This is because this particular function accepts only strings enclosed in single or double inverted quotes, or numbers. Since the string entered above is not enclosed in single or double inverted quotes, an error will be thrown.

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9. What is the output of the code shown below?

```
import sys
sys.argv[0]
```

- a) Junk value
- b) ' '
- c) No output
- d) Error

Answer: b

Explanation: The output of the function shown above will be a blank space enclosed in single quotes. Hence the output of the code shown above is ' '.

10. What is the output of the code shown below is:

```
import sys
sys.stderr.write("hello")
```

- a) 'hello'
- b) 'hello\n'
- c) hello
- d) hello5

Answer: d

Explanation: The code shown above returns the string, followed by the length of the string. Hence the output of the code shown above is hello5.

11. What is the output of the code shown below?

```
import sys
sys.argv
```

- a) ' '
- b) [ ]
- c) [ ' ]
- d) Error

Answer: c

Explanation: The output of the code shown above is a blank space inserted in single quotes, which is enclosed by square brackets. Hence the output will be [' '].

12. To obtain a list of all the functions defined under sys module, which of the following functions can be used?

- a) print(sys)
- b) print(dir.sys)
- c) print(dir[sys])
- d) print(dir(sys))

Answer: d

Explanation: The function print(dir(sys)) helps us to obtain a list of all the functions defined under the sys module. The function can be used to obtain the list of functions under any given module in Python.

13. The output of the function len(sys.argv) is \_\_\_\_\_

- a) Error
- b) 1
- c) 0
- d) Junk value

Answer: b

Explanation: The output of the function sys.argv is [' ']. When we execute the function len([' ']), the output is 1. Hence the output of the function len(sys.argv) is also 1.

**MCQ**  
**CHAPTER PYTHON LIBRARIES – RANDOM MODULE**  
**CLASS TEST – IX**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. What the does random.seed(3) return?
- a) True
  - b) None
  - c) 3
  - d) 1

Answer: b

Explanation: The function random.seed() always returns a None.

2. Which of the following cannot be returned by random.randrange(4)?
- a) 0
  - b) 3
  - c) 2.3
  - d) none of the mentioned

Answer: c

Explanation: Only integers can be returned.

3. Which of the following is equivalent to random.randrange(3)?
- a) range(3)
  - b) random.choice(range(0, 3))
  - c) random.shuffle(range(3))
  - d) random.select(range(3))

Answer: b

Explanation: It returns one number from the given range.

4. The function random.randint(4) can return only one of the following values. Which?
- a) 4
  - b) 3.4
  - c) error
  - d) 5

Answer: c

Explanation: Error, the function takes two arguments.

5. Which of the following is equivalent to random.randint(3, 6)?
- a) random.choice([3, 6])
  - b) random.randrange(3, 6)
  - c) 3 + random.randrange(3)
  - d) 3 + random.randrange(4)

Answer: d

Explanation: `random.randint(3, 6)` can return any one of 3, 4, 5 and 6.

6. Which of the following will not be returned by `random.choice("1 ,")`?

- a) 1
- b) (space)
- c) ,
- d) none of the mentioned

Answer: d

Explanation: Any of the characters present in the string may be returned.

7. Which of the following will never be displayed on executing

`print(random.choice({0: 1, 2: 3}))`?

- a) 0
- b) 1
- c) `KeyError: 1`
- d) none of the mentioned

Answer: a

Explanation: It will not print 0 but `dict[0]` i.e. 1 may be printed.

8. What does `random.shuffle(x)` do when `x = [1, 2, 3]`?

- a) error
- b) do nothing, it is a placeholder for a function that is yet to be implemented
- c) shuffle the elements of the list in-place
- d) none of the mentioned

Answer: c

Explanation: The elements of the list passed to it are shuffled in-place.

9. Which type of elements are accepted by `random.shuffle()`?

- a) strings
- b) lists
- c) tuples
- d) integers

Answer: b

Explanation: Strings and tuples are immutable and an integer has no `len()`.

10. What is the range of values that `random.random()` can return?

- a) `[0.0, 1.0]`.
- b) `(0.0, 1.0]`.
- c) `(0.0, 1.0)`
- d) `[0.0, 1.0)`

Answer: d

Explanation: Any number that is greater than or equal to 0.0 and lesser than 1.0 can be returned.

**MCQ**  
**CHAPTER - RECURSION**  
**CLASS TEST – X**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

This set of Python Multiple Choice Questions & Answers (MCQs) focuses on “Recursion”.

1. Which is the most appropriate definition for recursion?

- a) A function that calls itself
- b) A function execution instance that calls another execution instance of the same function
- c) A class method that calls another class method
- d) An in-built method that is automatically called

Answer: b

Explanation: The appropriate definition for a recursive function is a function execution instance that calls another execution instance of the same function either directly or indirectly.

2. Only problems that are recursively defined can be solved using recursion. True or False?

- a) True
- b) False

Answer: b

Explanation: There are many other problems can also be solved using recursion.

3. Which of these is false about recursion?

- a) Recursive function can be replaced by a non-recursive function
- b) Recursive functions usually take more memory space than non-recursive function
- c) Recursive functions run faster than non-recursive function
- d) Recursion makes programs easier to understand

Answer: c

Explanation: The speed of a program using recursion is slower than the speed of its non-recursive equivalent.

4. Fill in the line of code for calculating the factorial of a number.

```
def fact(num):
 if num == 0:
```

```
 return 1
else:
 return _____
```

- a) num\*fact(num-1)
- b) (num-1)\*(num-2)
- c) num\*(num-1)
- d) fact(num)\*fact(num-1)

Answer: a

Explanation: Suppose n=5 then, 5\*4\*3\*2\*1 is returned which is the factorial of 5.

5. What is the output of the following piece of code?

```
def test(i,j):
 if(i==0):
 return j
 else:
 return test(i-1,i+j)
print(test(4,7))
```

- a) 13
- b) 7
- c) Infinite loop
- d) 17

Answer: a

Explanation: The test(i-1,i+j) part of the function keeps calling the function until the base condition of the function is satisfied.

6. What is the output of the following code?

```
l=[]
def convert(b):
 if(b==0):
 return l
 dig=b%2
 l.append(dig)
 convert(b//2)
convert(6)
l.reverse()
for i in l:
 print(i,end="")
```

- a) 011
- b) 110
- c) 3

d) Infinite loop

Answer: b

Explanation: The above code gives the binary equivalent of the number.

7. What is tail recursion?

- a) A recursive function that has two base cases
- b) A function where the recursive functions leads to an infinite loop
- c) A recursive function where the function doesn't return anything and just prints the values
- d) A function where the recursive call is the last thing executed by the function

Answer: d

Explanation: A recursive function is tail recursive when recursive call is executed by the function in the last.

8. Observe the following piece of code?

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```
def a(n):
 if n == 0:
 return 0
 else:
 return n*a(n - 1)
def b(n, tot):
 if n == 0:
 return tot
 else:
 return b(n-2, tot-2)
```

- a) Both a() and b() aren't tail recursive
- b) Both a() and b() are tail recursive
- c) b() is tail recursive but a() isn't
- d) a() is tail recursive but b() isn't

Answer: c

Explanation: A recursive function is tail recursive when recursive call is executed by the function in the last.

9. Which of the following statements is false about recursion?

- a) Every recursive function must have a base case
- b) Infinite recursion can occur if the base case isn't properly mentioned
- c) A recursive function makes the code easier to understand
- d) Every recursive function must have a return value

Answer: d

Explanation: A recursive function needn't have a return value.

10. What is the output of the following piece of code?

```
def fun(n):
 if (n > 100):
 return n - 5
 return fun(fun(n+11));

print(fun(45))
```

- a) 50
- b) 100
- c) 74
- d) Infinite loop

Answer: b

Explanation: The fun(fun(n+11)) part of the code keeps executing until the value of n becomes greater than 100, after which n-5 is returned and printed.

11. Recursion and iteration are the same programming approach. True or False?

- a) True
- b) False

Answer: b

Explanation: In recursion, the function calls itself till the base condition is reached whereas iteration means repetition of process for example in for-loops.

12. What happens if the base condition isn't defined in recursive programs?

- a) Program gets into an infinite loop
- b) Program runs once
- c) Program runs n number of times where n is the argument given to the function
- d) An exception is thrown

Answer: a

Explanation: The program will run until the system gets out of memory.

13. Which of these is not true about recursion?

- a) Making the code look clean
- b) A complex task can be broken into sub-problems
- c) Recursive calls take up less memory
- d) Sequence generation is easier than a nested iteration

Answer: c

Explanation: Recursive calls take up a lot of memory and time as memory is taken up each time the function is called.

14. Which of these is not true about recursion?

- a) The logic behind recursion may be hard to follow

- b) Recursive functions are easy to debug
- c) Recursive calls take up a lot of memory
- d) Programs using recursion take longer time than their non-recursive equivalent

Answer: b

Explanation: Recursive functions may be hard to debug as the logic behind recursion may be hard to follow.

15. What is the output of the following piece of code?

```
def a(n):
 if n == 0:
 return 0
 elif n == 1:
 return 1
 else:
 return a(n-1)+a(n-2)
for i in range(0,4):
 print(a(i),end=" ")
```

- a) 0 1 2 3
- b) An exception is thrown
- c) 0 1 1 2 3
- d) 0 1 1 2

Answer: d

Explanation: The above piece of code prints the Fibonacci series.

**MCQ**  
**CHAPTER DATA VISUALIZATION**  
**CLASS TEST – XI**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. Which of the following adds marginal sums to an existing table ?

- a) par()
- b) prop.table()
- c) addmargins()
- d) all of the mentioned

Answer: b

Explanation: prop.table() computes proportions from a contingency table.

2. Which of the following lists names of variables in a data.frame ?

- a) quantile()
- b) names()
- c) barchart()
- d) all of the mentioned

Answer: a

Explanation: names function is used to associate name with the value in the vector.

3. Which of the following is tool for chi-square distributions ?

- a) pchisq()
- b) chisq()
- c) pnorm
- d) all of the mentioned

Answer: c

Explanation: pnorm() is tool for normal distributions.

4. Which of the following groups values of a variable into larger bins ?

- a) cut
- b) col.max(x)
- c) stem
- d) which.max(x)

Answer: a

Explanation: stem() is used to make a stemplot.

5. Which of the following determine the least-squares regression line ?

- a) histo()
- b) lm

- c) barlm()
- d) all of the mentioned

Answer: b

Explanation: lm calls the lower level functions lm.fit.

6. Which of the following is tool for checking normality ?

- a) qqline()
- b) qline()
- c) anova()
- d) all of the mentioned

Answer: a

Explanation: qqnorm is another tool for checking normality.

7. Which of the following is lattice command for producing boxplots ?

- a) plot()
- b) bwplot()
- c) xyplot()
- d) all of the mentioned

Answer: b

Explanation: The function bwplot() makes box-and-whisker plots for numerical variables.

8. Which of the following compute analysis of variance table for fitted model ?

- a) ecdf()
- b) cum()
- c) anova()
- d) all of the mentioned

Answer: c

Explanation: ecdf() builds empirical cumulative distribution function.

9. Which of the following is used to find variance of all values ?

- a) var()
- b) sd()
- c) mean()
- d) all of the mentioned

Answer: a

Explanation: sd() is used to calculate standard deviation.

10. The purpose of fisher.test() is \_\_\_\_\_ test for contingency table.

- a) Chisq

- b) Fisher
- c) Prop
- d) None of the mentioned

Answer: b

Explanation: `prop.test()` is used to inference for 1 proportion using normal approx.

**MCQ**  
**CHAPTER - DATA STRUCTURES**  
**CLASS TEST – XII**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. Process of inserting an element in stack is called \_\_\_\_\_
- a) Create
  - b) Push
  - c) Evaluation
  - d) Pop

Answer: b  
Explanation: None.

2. Process of removing an element from stack is called \_\_\_\_\_
- a) Create
  - b) Push
  - c) Evaluation
  - d) Pod

Answer: d  
Explanation: None.

3. In a stack, if a user tries to remove an element from empty stack it is called \_\_\_\_\_
- a) Underflow
  - b) Empty collection
  - c) Overflow
  - d) Garbage Collection

Answer: a  
Explanation: None.

4. Pushing an element into stack already having five elements and stack size of 5 , then stack becomes
- a) Overflow
  - b) Crash
  - c) Underflow
  - d) User flow

Answer: a  
Explanation: None.

5. Entries in a stack are "ordered". What is the meaning of this statement?
- a) A collection of stacks is sortable
  - b) Stack entries may be compared with the '<' operation
  - c) The entries are stored in a linked list
  - d) There is a Sequential entry that is one by one

Answer : d  
Explanation: None.

6. Which of the following applications may use a stack?
- a) A parentheses balancing program

- b) Tracking of local variables at run time
- c) Compiler Syntax Analyzer
- d) All of the mentioned

Answer: d

Explanation: All are applications of stack.

7. Consider the usual algorithm for determining whether a sequence of parentheses is balanced.

The maximum number of parentheses that appear on the stack AT ANY ONE TIME when the algorithm analyzes:  $((()())())$  are:

- a) 1
- b) 2
- c) 3
- d) 4 or more

Answer: c

Explanation: Applying the postfix expression evaluation.

8. Consider the usual algorithm for determining whether a sequence of parentheses is balanced.

Suppose that you run the algorithm on a sequence that contains 2 left parentheses and 3 right parentheses (in some order).

The maximum number of parentheses that appear on the stack AT ANY ONE TIME during the computation?

- a) 1
- b) 2
- c) 3
- d) 4 or more

Answer: b

Explanation: Applying the postfix expression evaluation.

9. What is the value of the postfix expression  $6\ 3\ 2\ 4\ +\ -\ *$ :

- a) Something between -5 and -15
- b) Something between 5 and -5
- c) Something between 5 and 15
- d) Something between 15 and 100

Answer: d

Explanation: On solving the postfix expression the answer comes out to 18.

10. Here is an infix expression:  $4 + 3*(6*3-12)$ . Suppose that we are using the usual stack algorithm to convert the expression from infix to postfix notation.

The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression?

- a) 1
- b) 2
- c) 3
- d) 4

Answer: d

Explanation: None

10. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as a ?

- a) Queue
- b) Stack
- c) Tree
- d) Linked list

Answer: a

Explanation: None.

11. The data structure required for Breadth First Traversal on a graph is?

- a) Stack
- b) Array
- c) Queue
- d) Tree

Answer: c

Explanation: None.

12. A queue is a ?

- a) FIFO (First In First Out) list
- b) LIFO (Last In First Out) list
- c) Ordered array
- d) Linear tree

Answer: a

Explanation: None.

13. In Breadth First Search of Graph, which of the following data structure is used?

- a) Stack
- b) Queue
- c) Linked list
- d) None of the mentioned

Answer: b

Explanation: None.

14. If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed?

- a) ABCD
- b) DCBA
- c) DCAB
- d) ABDC

Answer: a

Explanation: Queue follows FIFO approach.

15. A data structure in which elements can be inserted or deleted at/from both the ends but not in the middle is?

- a) Queue
- b) Circular queue
- c) Dequeue
- d) Priority queue

Answer: c

Explanation: None.

16. A normal queue, if implemented using an array of size MAX\_SIZE, gets full when

- a)  $\text{Rear} = \text{MAX\_SIZE} - 1$
- b)  $\text{Front} = (\text{rear} + 1) \bmod \text{MAX\_SIZE}$
- c)  $\text{Front} = \text{rear} + 1$
- d)  $\text{Rear} = \text{front}$

Answer: a

Explanation: Condition for size of queue.

17. Queues serve major role in

- a) Simulation of recursion
- b) Simulation of arbitrary linked list
- c) Simulation of limited resource allocation
- d) All of the mentioned

Answer: c

Explanation: Rest all are implemented using other data structures.

18. Which of the following is not the type of queue?

- a) Ordinary queue
- b) Single ended queue
- c) Circular queue
- d) Priority queue

Answer: b

Explanation: Queue always has two ends.

MCQ  
**CHAPTER - COMPUTER NETWORKS**  
**CLASS TEST – XIII**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1 Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

2 What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access
- D. A web browsing Software

3 How many layers does OSI Reference Model has?

- A. 4
- B. 5
- C. 6
- D. 7

4 DHCP is the abbreviation of

- A. Dynamic Host Control Protocol
- B. Dynamic Host Configuration Protocol
- C. Dynamic Hyper Control Protocol
- D. Dynamic Hyper Configuration Protocol

5 IPV4 Address is

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit

6 DNS is the abbreviation of

- A. Dynamic Name System
- B. Dynamic Network System
- C. Domain Name System
- D. Domain Network Service

7 What is the meaning of Bandwidth in Network?

- A. Transmission capacity of a communication channels
- B. Connected Computers in the Network
- C. Class of IP used in Network
- D. None of Above

8 ADSL is the abbreviation of

- A. Asymmetric Dual Subscriber Line
- B. Asymmetric Digital System Line
- C. Asymmetric Dual System Line
- D. Asymmetric Digital Subscriber Line

9 What is the use of Bridge in Network?

- A. to connect LANs
- B. to separate LANs
- C. to control Network Speed
- D. All of the above

10 Router operates in which layer of OSI Reference Model?

- A. Layer 1 (Physical Layer)
- B. Layer 3 (Network Layer)
- C. Layer 4 (Transport Layer)
- D. Layer 7 (Application Layer)

11 Each IP packet must contain

- A. Only Source address
- B. Only Destination address
- C. Source and Destination address
- D. Source or Destination address

12 Bridge works in which layer of the OSI model?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Datalink layer

13 \_\_\_\_\_ provides a connection-oriented reliable service for sending messages

- A. TCP
- B. IP
- C. UDP
- D. All of the above

14 Which layers of the OSI model are host-to-host layers?

- A. Transport, Session, Presentation, Application
- B. Network, Transport, Session, Presentation
- C. Datalink, Network, Transport, Session
- D. Physical, Datalink, Network, Transport

15 Which of the following IP address class is Multicast

- A. Class A
- B. Class B
- C. Class C
- D. Class D

16 Which of the following is correct regarding Class B Address of IP address

- A. Network bit – 14, Host bit – 16
- B. Network bit – 16, Host bit – 14
- C. Network bit – 18, Host bit – 16

D. Network bit – 12, Host bit – 14

17 The last address of IP address represents

- A. Unicast address
- B. Network address
- C. Broadcast address
- D. None of above

18 How many bits are there in the Ethernet address?

- A. 64 bits
- B. 48 bits
- C. 32 bits
- D. 16 bits

19 How many layers are in the TCP/IP model?

- A. 4 layers
- B. 5 layers
- C. 6 layers
- D. 7 layers

20 Which of the following layer of OSI model also called end-to-end layer?

- A. Presentation layer
- B. Network layer
- C. Session layer
- D. Transport layer

### Answers

1 – D / 2 – C / 3 – D / 4 – B / 5 – C / 6 – C / 7 – A / 8 – D / 9 – A / 10 – B

11 – C / 12 – D / 13 – A / 14 – A / 15 – D / 16 – A / 17 – C / 18 – B / 19 – A / 20 – D

**MCQ**  
**CHAPTER - DJANGO**  
**CLASS TEST – XIV**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

Q1). Explain what is Django?

Ans: Django is a web framework in python to develop a web application in python. Django is a free and open source web application framework, written in Python.

Q2). Mention what are the features available in Django?

Ans: Features available in Django are

Admin Interface (CRUD)

Templating

Form handling

Internationalization

Session, user management, role-based permissions

Object-relational mapping (ORM)

Testing Framework

Fantastic Documentation

Q3). Mention the architecture of Django architecture?

Ans: Django architecture consists of

Models: It describes your database schema and your data structure

Views: It controls what a user sees, the view retrieves data from appropriate models and execute any calculation made to the data and pass it to the template

Templates: It determines how the user sees it. It describes how the data received from the views should be changed or formatted for display on the page

Controller: The Django framework and URL parsing

Q4). Why Django should be used for web-development?

Ans:

It allows you to divide code modules into logical groups to make it flexible to change

To ease the website administration, it provides auto-generated web admin

It provides pre-packaged API for common user tasks

It gives you template system to define HTML template for your web page to avoid code duplication

It enables you to define what URL be for a given function

It enables you to separate business logic from the HTML

Everything is in python

Q5). Explain how you can create a project in Django?

Ans: To start a project in Django, you use command `$ django-admin.py` and then use the command

```
Project
init.py
manage.py
settings.py
urls.py
```

Q6). Explain how you can set up the Database in Django?

Ans: You can use the command edit `mysite/setting.py`, it is a normal python module with module level representing Django settings.

Django uses SQLite by default; it is easy for Django users as such it won't require any other type of installation. In the case your database choice is different that you have to the following keys in the DATABASE 'default' item to match your database connection settings

Engines: you can change database by using `'django.db.backends.sqlite3'`, `'django.db.backends.mysql'`, `'django.db.backends.postgresql_psycopg2'`, `'django.db.backends.oracle'` and so on

Name: The name of your database. In the case if you are using SQLite as your database, in that case database will be a file on your computer, Name should be a full absolute path, including file name of that file.

If you are not choosing SQLite as your database then setting like Password, Host, User, etc. must be added.

Q7). Give an example how you can write a VIEW in Django?

Ans: Views are Django functions that take a request and return a response. To write a view in Django we take a simple example of "Guru99\_home" which uses the template `Guru99_home.html` and uses the date-time module to tell us what the time is whenever the page is refreshed. The file we required to edit is called `view.py`, and it will be inside `mysite/myapp/`

Copy the below code into it and save the file

```
from datetime import datetime
from django.shortcuts import render
def home (request):
return render(request, 'Guru99_home.html', {'right_now': datetime.utcnow()})
```

Once you have determined the VIEW, you can uncomment this line in `urls.py`

```
url (r '^$', 'mysite.myapp.views.home', name 'Guru99'),
```

The last step will reload your web app so that the changes are noticed by the web server.

Q8). Explain how you can setup static files in Django?

Ans: There are three main things required to set up static files in Django

Set `STATIC_ROOT` in `settings.py`

run `manage.py collectstatic`

set up a Static Files entry on the PythonAnywhere web tab

Q9).Mention what does the Django templates consists of?

Ans: The template is a simple text file. It can create any text-based format like XML, CSV, HTML, etc. A template contains variables that get replaced with values when the template is evaluated and tags (% tag %) that controls the logic of the template.

Q10). Explain the use of session framework in Django?

Ans: In Django, the session framework enables you to store and retrieve arbitrary data on a per-site-visitor basis. It stores data on the server side and abstracts the receiving and sending of cookies. Session can be implemented through a piece of middleware.

**MCQ**  
**CHAPTER - SIMPLE QUERIES IN SQL,**  
**CLASS TEST XV**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. The statement in SQL which allows to change the definition of a table is
- (A) Alter.                      (B) Update.  
(C) Create.                      (D) select.

Ans: A

2. The statement in SQL which allows to change the definition of a table is
- (A) Alter.                      (B) Update.  
(C) Create.                      (D) select.

Ans: A

3. Key to represent relationship between tables is called
- (A) Primary key      (B) Secondary Key  
(C) Foreign Key      (D) None of these

Ans: C

4. \_\_\_\_\_ produces the relation that has attributes of R1 and R2
- (A) Cartesian product      (B) Difference  
(C) Intersection              (D) Product

Ans: A

5. It is better to use files than a DBMS when there are
- (A) Stringent real-time requirements.  
(B) Multiple users wish to access the data.  
(C) Complex relationships among data.  
(D) All of the above.

Ans: B

6. The conceptual model is
- (A) dependent on hardware.
  - (B) dependent on software.
  - (C) dependent on both hardware and software .
  - (D) independent of both hardware and software.

Ans: D

7. What is a relationship called when it is maintained between two entities?
- (A) Unary
  - (B) Binary
  - (C) Ternary
  - (D) Quaternary

Ans: B

8. Which of the following operation is used if we are interested in only certain columns of a table?
- (A) PROJECTION
  - (B) SELECTION
  - (C) UNION
  - (D) JOIN

Ans: A

9. Which of the following is a valid SQL type?
- (A) CHARACTER
  - (B) NUMERIC
  - (C) FLOAT
  - (D) All of the above

Ans: D

10. The RDBMS terminology for a row is
- (A) tuple.
  - (B) relation.
  - (C) attribute.
  - (D) degree.

Ans: A

**MCQ**  
**CHAPTER - INTELLECTUAL PROPERTY RIGHTS**  
**CLASS TEST – XVI**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. Trademark can be used as domain name

**(a) Yes**

(b) No

(c) Yes in some cases

(d) None of the above

2. Who administer UDRP?

(a) WTO

**(b) WIPO**

(c) Supreme Court

(d) High court

3. Geographical Indication is

(a) Private right

(b) Community right

(c) Intellectual property right

**(d) both (b) and (c)**

4. Who can register Geographical Indication?

(a) Individual

(b) Company

**(c) Producers**

(d) No one of the above

5. Certification mark indicates

(a) Source

**(b) Quality**

(c) both (a) and (b)

(d) None of the above

6. Certification mark can be registered in

**(a) Trademark Registry**

(b) Certification Board

(c) Quality Control Board

(d) MHRD

7. Collective Mark is registered by

(a) Partnership firm

**(b) Association of person**

(c) Individual

(d) Company

8. Hall Mark is

(a) Trademark

**(b) Certification Mark**

(c) Collective Mark

(d) Both (a) and (b)

9. Khadi is

(a) Trademark

(b) Certification Mark

**(c) Collective Mark**

(d) Both (a) and (b)

10. Geographical Indication can be licensed

(a) Yes

**(b) No**

(c) Yes in some cases

(d) Yes with stringent quality control

**MCQ**  
**CHAPTER - OPEN SOURCE SOFTWARE**  
**CLASS TEST – XVII**

Class XII  
Time: 40 Min

Sub : CS (083)  
Max Marks: 20

1. A software that can be freely accessed and modified.

- a) Synchronous Software
- b) Package Software
- c) OSS
- d) Middleware

Answer: c

2. Open Source Software can be used for commercial purpose.

- a) True
- b) False

Answer: a

3. PNG is a \_\_\_\_\_

- a) image format
- b) file format
- c) internet format
- d) html format

Answer: a

4. OSI stands for?

- a) Open Source Index
- b) Open Source Image
- c) Open Source Initiative
- d) Open Source Instant

Answer: c

5. Which of the following is not an open source software?

- a) LibreOffice
- b) Microsoft Office
- c) GNU image manipulation
- d) MySQL

Answer: b

6. The users must agree to the \_\_\_\_\_ terms and agreements when they use an open source software.

- a) System
- b) License
- c) Community
- d) Programmer

Answer: b

7. Which of the following is not a downside of OSS?

- a) Lack of personalized support
- b) Restricted choice
- c) No warranty
- d) Multiple choices

Answer: d

8. An example of a web design OSS.

- a) Nvu
- b) KOffice
- c) AbiWorld
- d) Open Office

Answer: a

9. An image editor similar to Adobe Photoshop.

- a) Nvu
- b) Open Office
- c) Bluefish
- d) GIMPshop

Answer: d

10. An OSS for communication purpose.

- a) Virtue Mart
- b) Drupal
- c) Pidgin
- d) ZenCart

Answer: c

11. A guideline for the OSS licenses other than the GPL.

- a) OSI
- b) OSD
- c) OSE
- d) OSL

Answer: b

12. GPL of GNU says that every copy of a program governed by GPL license, even if modified, must be subject to GPL again.

- a) True
- b) False

Answer: a

3. Richard Stallman from MIT, established a special license, the \_\_\_\_\_ license.

- a) GNU
- b) Free
- c) Package
- d) Commercial

Answer: a

4. In 1969 AT&T laboratories developed \_\_\_\_\_ which supported and worked on different hardware platforms.

- a) Linux
- b) Unix
- c) Windows
- d) Ubuntu

Answer: b

5. OSS stands for \_\_\_\_\_

- a) Open System Service
- b) Open Source Software
- c) Open System Software
- d) Open Synchronized Software

Answer: b

6. Public domain software is usually \_\_\_\_\_

- a) System supported
- b) Source supported
- c) Community supported
- d) Programmer supported

Answer: c

7. Set of a program which consists of full documentation.

- a) Software Package
- b) System Software
- c) Utility Software
- d) File package

Answer: a

8. Interpreter is used as a translator for?

- a) Low level language
- b) High Level Language
- c) COBOL
- d) C

Answer: b

9. What do you call a specific instruction designed to do a task?

- a) Command
- b) Process
- c) Task
- d) Instruction

Answer: a

10. They normally interact with the system via user interface provided by the application software.

- a) Programmers
- b) Developers
- c) Users
- d) Testers

Answer: c

11. A guideline for the OSS licenses other than the GPL.

- a) OSI
- b) OSD
- c) OSE
- d) OSL

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- b) False

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- d) Instruction

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- b) Developers
- c) Users
- d) Testers

Answer: c

**MCQ**  
**CHAPTER - OPEN SOURCE SOFTWARE**  
**CLASS TEST – XVIII**

Class XII  
Time: 40 Min

Sub: CS (083)  
Max Marks: 20

1. What are computer ethics?
  - A. An honest, moral code that should be followed when on the computer
  - B. A computer program about honesty
  - C. A computer that fits on or under a desk
  - D. A list of commandments in the Bible
2. What is NOT an example of cyberbullying?
  - A. Creating an embarrassing picture of your classmate and forwarding it to your friend's email addresses
  - B. Sending someone a mean text
  - C. Bullying someone in the hallway
  - D. Threatening someone in an instant message
3. Which is an example of plagiarism?
  - A. Reading a paragraph online and retyping it in your own words.
  - B. Copying and pasting someone else's work into your paper using quotation marks and citing the author
  - C. Typing a paper in your own words
  - D. Copying and pasting a sentence from the Internet into your paper.
4. Which is NOT a consequence of copying or distributing copyrighted software?
  - A. Community Service
  - B. Imprisonment
  - C. Up to \$10,000 in legal fees
  - D. Up to \$50,000 in civil fees
5. Which is not a type of cyberbully?
  - A. "Mean Girls"
  - B. Power Hungery or Revenge of the Nerds

C. Big, Bad Bully

D. The Vengeful Angel

E. The Inadvertent Cyberbully "Because I Can"

6. Check TWO ways to prevent or stop cyberbullying?

A. Forward a mean message about a bully to your friends

B. Tell a parent, teacher, or administrator

C. Not forwarding mean texts sent you about a classmate

D. Use instant messenger to talk to your friends about someone's outfit you did not like that day at school

7. Which is NOT a consequence of plagiarism?

A. You can get kicked out of college.

B. You can make a zero on your assignment.

C. You can get fired from your job.

D. You could get a warning from your college professor.

8. Which of the following is NOT a rule listed in Computer Discovery's Ten Commandments of Computer Ethics?

A. Thou shalt not use a computer to email.

B. Thou shalt not use a computer to cyberbully.

C. Thou shalt not use a computer to interfere with other people's computer work.

D. Thou shalt not use a computer to be nosy or snoop into other people's computer files.

E. Thou shalt not use a computer to steal.

9. Which of the following is NOT a rule listed in Computer Discovery's Ten Commandments of Computer Ethics?

A. Thou Shalt not use a computer to lie.

B. Thou shalt not copy copyrighted software and materials.

C. Thou shalt not let others borrow your computer.

D. Thou shalt not use a computer to plagiarize.

E. Thou shalt respect other at all times when using the computer.

10. Thou shalt not create \_\_\_\_\_ software or games.

A. Difficult

B. Copyrighted

C. Easy

D. Harmful