



Maratha Vidya Prasarak Samaj's

Rajarshi Shahu Maharaj Polytechnic, Nashik

Udoji Maratha Boarding Campus, Near Pumping Station, Gangapur Road, Nashik-13.

Affiliated to MSBTE Mumbai, Approved by AICTE New Delhi, DTE Mumbai & Govt. of Maharashtra, Mumbai.

Subject:
Programming with Python
(22616)



SYLLABUS

Chapter No.	Name of chapter	Marks With Option
1	Introduction and Syntax of Python Program	14
2	Python Operators and Control Flow Statements	16
3	Data Structures in Python	20
4	Python Functions, Modules and Packages	20
5	Object Oriented Programming in Python	18
6	File I/O Handling and Exception Handling	18
Total Marks		106



BOARD THEORY PAPER PATTERN FOR PWP (22616)

Q.1		Attempt any FIVE	5*2=10
	a)	Introduction and Syntax of Python Program	
	b)	Introduction and Syntax of Python Program	
	c)	Python Operators and Control Flow Statements	
	d)	Python Operators and Control Flow Statements	
	e)	Data Structures in Python	
	f)	Object Oriented Programming in Python	
	g)	File I/O Handling and Exception Handling	
Q.2		Attempt any THREE	3*4=12
	a)	Introduction and Syntax of Python Program	
	b)	Python Operators and Control Flow Statements	
	c)	Data Structures in Python	
	d)	Object Oriented Programming in Python	
Q.3		Attempt any THREE	3*4=12
	a)	Python Operators and Control Flow Statements	
	b)	Data Structures in Python	
	c)	Object Oriented Programming in Python	
	d)	File I/O Handling and Exception Handling	
Q.4		Attempt any THREE	3*4=12
	a)	Python Operators and Control Flow Statements	
	b)	Data Structures in Python	
	c)	Python Functions, Modules and Packages	



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	d)	Object Oriented Programming in Python
	e)	File I/O Handling and Exception Handling
Q.5		Attempt any TWO 2*6=12
	a)	Introduction and Syntax of Python Program
	b)	Python Operators and Control Flow Statements
	c)	Data Structures in Python
Q.6		Attempt any TWO 2*6=12
	a)	Python Functions, Modules and Packages
	b)	Object Oriented Programming in Python
	c)	File I/O Handling and Exception Handling



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CLASS TEST - I

PAPER PATTERN

Syllabus

Unit No.	Name of the Unit	Course Outcome (CO)
1	Introduction and Syntax of Python Program	CO-616.01
2	Python Operators and Control Flow Statements	CO-616.02
3	Data Structures in Python	CO-616.03

Q.1	Attempt any FOUR	4*2=8Marks	Course Outcome (CO)
a)	Introduction and Syntax of Python Program		CO-616.01
b)	Python Operators and Control Flow Statements		CO-616.02
c)	Introduction and Syntax of Python Program		CO-616.01
d)	Data Structures in Python		CO-616.03
e)	Data Structures in Python		CO-616.03
f)	Python Operators and Control Flow Statements		CO-616.02
g)	Python Operators and Control Flow Statements		CO-616.02
Q.2	Attempt any THREE	3*4= 12Marks	
a)	Introduction and Syntax of Python Program		CO-616.01
b)	Introduction and Syntax of Python Program		CO-616.01
c)	Python Operators and Control Flow Statements		CO-616.02
d)	Data Structures in Python		CO-616.03
e)	Python Operators and Control Flow Statements		CO-616.02
f)	Data Structures in Python		CO-616.03
g)	Data Structures in Python		CO-616.03



CLASS TEST - II

PAPER PATTERN

Syllabus

Unit No.	Name of the Unit	Course Outcome (CO)
4	Python Functions, Modules and Packages	CO-616.04
5	Object Oriented Programming in Python	CO-616.05
6	File I/O Handling and Exception Handling	CO-616.06

Q.1	Attempt any FOUR	4*2= 8Marks	Course Outcome (CO)
a)	Python Functions, Modules and Packages		CO-616.04
b)	Object Oriented Programming in Python		CO-616.05
c)	File I/O Handling and Exception Handling		CO-616.06
d)	Python Functions, Modules and Packages		CO-616.04
e)	Object Oriented Programming in Python		CO-616.05
f)	File I/O Handling and Exception Handling		CO-616.06
Q.2	Attempt any THREE	3*4= 12Marks	
a)	Python Functions, Modules and Packages		CO-616.04
b)	Object Oriented Programming in Python		CO-616.05
c)	File I/O Handling and Exception Handling		CO-616.06
d)	Python Functions, Modules and Packages		CO-616.04
e)	Object Oriented Programming in Python		CO-616.05
f)	File I/O Handling and Exception Handling		CO-616.06



COURSE OUTCOME (CO)

COURSE: Programming With Python (22616)

PROGRAMME: Computer Technology

CO.NO	Course Outcome
CO-616.a	Display message on screen using Python IDE.
CO-616.b	Develop Python program to demonstrate use of Operators.
CO-616.c	Perform operations on data structures in Python.
CO-616.d	Develop functions for given problem.
CO-616.e	Design classes for given problem.
CO-616.f	Handle exceptions.



1. Introduction and Syntax of Python Program

Position in Question Paper

Total Marks: 08

Q.1 a) 2-Marks.

Q.1 c) 2-Marks.

Q.3 a) 4-Marks.

Descriptive Question:

- 1) List the features of python and explain any two.
- 2) What do you mean by variable? Does python allow explicit declaration of variables? Justify your answer.
- 3) What is comment? How to apply comments in python?
- 4) Explain numeric data-types in python.
- 5) Explain the use of strings in python. Also explain '+' and '*' w. r. t. string.

MCQ Question:

1. All keywords in Python are in _____
 - a) lower case
 - b) UPPER CASE
 - c) Capitalized
 - d) None of the mentioned
2. Which of the following is true for variable names in Python?
 - a) unlimited length
 - b) all private members must have leading and trailing underscores
 - c) underscore and ampersand are the only two special characters allowed
 - d) none of the mentioned
3. Which of the following is an invalid statement?
 - a) `abc = 1,000,000`
 - b) `a b c = 1000 2000 3000`
 - c) `a,b,c = 1000, 2000, 3000`
 - d) `a_b_c = 1,000,000`
4. Which of the following cannot be a variable?
 - a) `__init__`
 - b) `in`
 - c) `it`
 - d) `on`
5. Which of these is not a core data type?
 - a) Lists
 - b) Dictionary
 - c) Tuples
 - d) Class
6. What will be the output of the following Python code?

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

 - a) `he`
 - b) `lo`
 - c) `olleh`
 - d) `hello`
7. Which of the following will run without errors?



- a) 1
c) True
19. Which of the following is incorrect?
a) float('inf')
c) float('56'+ '78')
20. What is the result of round(0.5) – round(-0.5)?
a) 1.0
c) **Value depends on Python version**
21. What does 3^4 evaluate to?
a) 81
c) 0.75
22. Which is the correct operator for power(xy)?
a) X^y
c) $X^{^y}$
23. Which one of these is floor division?
a) /
c) %
24. What is the order of precedence in python?
i) Parentheses
ii) Exponential
iii) Multiplication
iv) Division
v) Addition
vi) Subtraction
a) **i,ii,iii,iv,v,vi**
c) ii,i,iv,iii,v,vi
25. What is the answer to this expression, $22 \% 3$ is?
a) 7
c) 0
26. Mathematical operations can be performed on a string.
a) True
b) **False**
27. Operators with the same precedence are evaluated in which manner?
a) **Left to Right**
c) Can't say
28. What is the output of this expression, $3*1**3$?
a) 27
c) **3**
- b) 0
d) False
- b) float('nan')
d) **float('12+34')**
- b) 2.0
d) 0.0
- b) 12
d) **7**
- b) **$X**y$**
d) None of the mentioned
- b) //
d) None of the mentioned
- b) ii,i,iii,iv,v,vi
d) i,ii,iii,iv,vi,v
- b) **1**
d) 5
- b) **False**
- b) Right to Left
d) None of the mentioned
- b) 9
d) 1



29. Which one of the following has the same precedence level?
- a) **Addition and Subtraction**
 - b) Multiplication, Division and Addition
 - c) Multiplication, Division, Addition and Subtraction
 - d) Addition and Multiplication
30. The expression $\text{Int}(x)$ implies that the variable x is converted to integer.
- a) **True**
 - b) False
31. Which one of the following has the highest precedence in the expression?
- a) Exponential
 - b) Addition
 - c) Multiplication
 - d) **Parentheses**
32. Is Python case sensitive when dealing with identifiers?
- a) **yes**
 - b) no
 - c) machine dependent
 - d) none of the mentioned
33. What is the maximum possible length of an identifier?
- a) 31 characters
 - b) 63 characters
 - c) 79 characters
 - d) **none of the mentioned**
34. Which of the following is invalid?
- a) `_a = 1`
 - b) `__a = 1`
 - c) `__str__ = 1`
 - d) **none of the mentioned**
35. Which of the following is an invalid variable?
- a) `my_string_1`
 - b) **1st_string**
 - c) `foo`
 - d) `_`
36. Why are local variable names beginning with an underscore discouraged?
- a) **they are used to indicate a private variables of a class**
 - b) they confuse the interpreter
 - c) they are used to indicate global variables
 - d) they slow down execution
37. Which of the following is not a keyword?
- a) **eval**
 - b) `assert`
 - c) `nonlocal`
 - d) `pass`



2. Python Operators and Control Flow Statements

Position in Question Paper

Total Marks: 10

Q.1 b) 2-Marks.

Q.2 b) 4-Marks.

Q.3 b) 4-Marks.

Descriptive Question:

- 1) Explain arithmetic operators in python with an example.
- 2) Explain bitwise operators in python with an example.
- 3) Explain membership operator and identity operators in python with examples.
- 4) Explain if-else statement with example.
- 5) Show the use of keyword **elif** in python with example.
- 6) How to use short-hand if-else statement in python. Explain with example.
- 7) Explain for-loop in python with example.
- 8) Can we use keyword else with any loop? Justify your answer.
- 9) State the use of keyword pass.
- 10) Explain the use of keywords break and continue in python.

MCQ Question:

1. Which of the following is not used as loop in Python?
 - a) for loop
 - b) while loop
 - c) do-while loop**
 - d) None of the above
2. Which of the following is False regarding loops in Python?
 - a) Loops are used to perform certain tasks repeatedly.
 - b) While loop is used when multiple statements are to executed repeatedly until the given condition becomes False**
 - c) While loop is used when multiple statements are to executed repeatedly until the given condition becomes True
 - d) for loop can be used to iterate through the elements of lists



3. Which of the following is True regarding loops in Python?
- Loops should be ended with keyword "end".
 - No loop can be used to iterate through the elements of strings.
 - Keyword "break" can be used to bring control out of the current loop.**
 - Keyword "continue" is used to continue with the remaining statements inside the loop.
4. How many times will the loop run?
- ```
i=2
while(i>0):
 i=i-1
```
- 2**
  - 3
  - 1
  - 0
5. What will be the output of the following Python code?
- ```
list1 = [3 , 2 , 5 , 6 , 0 , 7, 9]
sum = 0
sum1 = 0
for elem in list1:
    if (elem % 2 == 0):
        sum = sum + elem
        continue
    if (elem % 3 == 0):
        sum1 = sum1 + elem
print(sum , end=" ")
print(sum1)
```
- 8 9
 - 8 3
 - 2 3
 - 8 12**
6. Which one of the following is a valid Python if statement :
- if a>=2:**
 - if (a >= 2)
 - if (a => 22)
 - if a >= 22
7. What keyword would you use to add an alternative condition to an if statement?
- else if
 - elseif
 - elif**
 - None of the above
8. Can we write if/else into one line in python?
- Yes**
 - No
 - if/else not used in python
 - None of the above
9. In a Python program, a control structure:
- Defines program-specific data structures
 - Directs the order of execution of the statements in the program**
 - Dictates what happens before the program starts and after it terminates
 - None of the above
10. What will be output of this expression:
- ```
'p' + 'q' if '12'.isdigit() else 'r' + 's'
```



- a) pq  
c) pqrs
- b) rs  
d) pq12
11. Which statement will check if a is equal to b?  
a) if a = b:  
c) if a === c:
- b) if a == b:  
d) if a == b
12. Does python have switch case statement?  
a) True  
b) False  
c) Python has switch statement but we can not use it.  
d) None of the above
13. What will be the output of given Python code?  
n=7; c=0  
while(n):  
    if(n>5):  
        c=c+n-1  
        n=n-1  
    else:  
        break  
print(n)  
print(c)
- a) 2  
c) 3
- b) 6 5 2  
d) 5 2
14. What will be the output of given Python code?  
str1="hello"  
c=0  
for x in str1:  
    if(x!="l"):  
        c=c+1  
    else:  
        pass  
print(c)
- a) 2  
c) 4
- b) 0  
d) 3
15. Which of the following Python code will give different output from the others?  
a) for i in range(0,5):  
    print(i)  
b) for j in [0,1,2,3,4]:  
    print(j)  
c) for k in [0,1,2,3,4,5]:  
    print(k)  
d) for l in range(0,5,1):  
    print(l)





16. What will be the output of the following Python code?

```
str1="learn python"
str2=""
str3=""
for x in str1:
 if(x=="r" or x=="n" or x=="p"):
 str2+=x
 pass
 if(x=="r" or x=="e" or x=="a"):
 str3+=x
print(str2,end=" ")
print(str3)
```

a) rnpn ea

**b) rnpn ear**

c) rnp ea

d) rnp ear

17. What will be the output of the following Python code?

```
for i in range(0,2,-1):
 print("Hello")
```

a) Hello

b) Hello Hello

**c) No Output**

d) Error

18. Which of the following is a valid for loop in Python?

a) for(i=0; i < n; i++)

**b) for i in range(0,5):**

c) for i in range(0,5)

d) for i in range(5)

19. Which of the following sequences would be generated by the given line of code?

```
range(5, 0, -2)
```

a) 5 4 3 2 1 0 -1

b) 5 4 3 2 1 0

**c) 5 3 1**

d) None of the above

20. A while loop in Python is used for what type of iteration?

**a) indefinite**

b) discriminant

c) definite

d) indeterminate

21. When does the else statement written after loop executes?

a) When break statement is executed in the loop

**b) When loop condition becomes false**

c) Else statement is always executed

d) None of the above

22. What will be the output of the following code?

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

a) a b c d e f

b) abcdef

c) i i i i i....

**d) No Output**





23. What will be the output of the following code?

```
x = "abcd"
for i in range(len(x)):
 print(i)
```

- a) abcd  
b) **0 1 2 3**  
c) 1 2 3 4  
d) a b c d

24. What will be the output of the following code?

```
x = 12
for i in x:
 print(i)
```

- a) 12  
b) 1 2  
c) **Error**  
d) None of the above

25. What will be the output of the following Python code?

```
print("Hello {name1} and {name2}".format(name1='foo', name2='bin'))
```

- a) **Hello foo and bin**  
b) Hello {name1} and {name2}  
c) Error  
d) Hello and

26. What will be the output of the following Python code?

```
print("Hello {0!r} and {0!s}".format('foo', 'bin'))
```

- a) Hello foo and foo  
b) **Hello 'foo' and foo**  
c) Hello foo and 'bin'  
d) Error

27. What will be the output of the following Python code?

```
print("Hello {0} and {1}".format(('foo', 'bin')))
```

- a) Hello foo and bin  
b) Hello ('foo', 'bin') and ('foo', 'bin')  
c) **Error**  
d) None of the mentioned

28. What will be the output of the following Python code?

```
print("Hello {0[0]} and {0[1]}".format(('foo', 'bin')))
```

- a) **Hello foo and bin**  
b) Hello ('foo', 'bin') and ('foo', 'bin')  
c) Error  
d) None of the mentioned

29. What will be the output of the following Python code snippet?

```
print('The sum of {0} and {1} is {2}'.format(2, 10, 12))
```

- a) **The sum of 2 and 10 is 12**  
b) Error  
c) The sum of 0 and 1 is 2  
d) None of the mentioned

30. What will be the output of the following Python code snippet?

```
print('The sum of {0:b} and {1:x} is {2:o}'.format(2, 10, 12))
```

- a) The sum of 2 and 10 is 12  
b) **The sum of 10 and a is 14**  
c) The sum of 10 and a is c  
d) Error

31. What will be the output of the following Python code snippet

```
if x=1?
x<<2
```

- a) 8  
b) 1  
c) 2  
d) **4**





### 3. Data Structures in Python

Position in Question Paper

Total Marks: 14

Q.1 c) 2-Marks.

Q.2 c) 4-Marks.

Q.3 c) 4-Marks.

Q.4 c) 4-Marks.

#### Descriptive Question:

1. How to declare the list? Can we change or update the list elements? Justify your answer.
2. Write a short note on slicing list.
3. Explain the following function w.r.t list
  - a) append()
  - b) insert()
4. Can we delete the list element?
5. Explain the use of keywords del w.r.t list.
6. How to declare the tuple? Can we change or update the tuple? Justify your answer.
7. How to declare the set? Can we change iterate through set by using while loop? Justify your answer.
8. Can we iterate through set by using for loop? Justify your answer.
9. Can we add new elements in set? Justify your answer with example.
10. Explain the following set operations
  - a) Set union
  - b) Set intersection
  - c) Set symmetric difference
11. How to declare the dictionary in python?
12. Explain use of update() function w.r.t dictionary.
13. Explain how to access dictionary element using index/key with example.
14. Explain different ways and function to remove key:value pair from dictionary

#### MCQ Question:



1. If `a={5,6,7}`, what happens when `a.add(5)` is executed?
  - a) `a={5,5,6,7}`
  - b) `a={5,6,7}`**
  - c) Error as there is no add function for set data type
  - d) Error as 5 already exists in the set
2. Which of the following statements is used to create an empty set?
  - a) `{ }`
  - b) `set()`
  - c) `[ ]`
  - d) `( )`
3. Which of the following is not the correct syntax for creating a set?
  - a) `set([[1,2],[3,4]])`**
  - b) `set([1,2,2,3,4])`
  - c) `set((1,2,3,4))`
  - d) `{1,2,3,4}`
4. Which of these about a set is not true?
  - a) Mutable data type
  - b) Allows duplicate values
  - c) Data type with unordered values
  - d) Immutable data type**
5. Which of the following is a Python tuple?
  - a) `[1, 2, 3]`
  - b) `(1, 2, 3)`**
  - c) `{1, 2, 3}`
  - d) `{ }`
6. What will be the output of the following Python code?

```
>>>t=(1,2,4,3)
>>>t[1:3]
```

  - a) (1, 2)
  - b) (1, 2, 4)
  - c) (2, 4)**
  - d) (2, 4, 3)
7. 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
8. What will be the output of the following Python 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)`
9. Is the following Python 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
10. What will be the output of the following Python code?

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

  - a) Too many arguments for sum() method
  - c) 12**



- b) The method sum() doesn't exist for tuples d) 9
11. What will be the output of the following Python code?  
>>> a=("Check")\*3  
>>> a  
a) ('Check', 'Check', 'Check') b) \* Operator not valid for tuples  
c) ('CheckCheckCheck') d) Syntax error
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 will be the output of the following Python code?  
>>> a=(2,3,1,5)  
>>> a.sort()  
>>> a  
a) (1,2,3,5) b) (2,3,1,5)  
c) None d) **Error, tuple has no attribute sort**
14. The \_\_\_\_ function removes the first element of a set and the last element of a list.  
a) remove b) **pop**  
c) discard d) dispose
15. The difference between the functions discard and remove is that:  
a) Discard removes the last element of the set whereas remove removes the first element of the set  
b) Discard throws an error if the specified element is not present in the set whereas remove does not throw an error in case of absence of the specified element  
c) Remove removes the last element of the set whereas discard removes the first element of the set  
d) **Remove throws an error if the specified element is not present in the set whereas discard does not throw an error in case of absence of the specified element**
16. If we have two sets, s1 and s2, and we want to check if all the elements of s1 are present in s2 or not, we can use the function:  
a) s2.issubset(s1) b) **s2.issuperset(s1)**  
c) s1.issuperset(s2) d) s1.issubset(s2)
17. What will be the output of the following Python code,  
if s1= {1, 2, 3}?  
s1.issubset(s1)  
a) **True** b) Error  
c) No output d) False
18. Which of the following functions will return the symmetric difference between two sets, x and y?  
a) x | y b) **x ^ y**  
c) x & y d) x - y







- d) Values of a dictionary can be a mixture of letters and numbers
29. If a is a dictionary with some key-value pairs, what does a.popitem() do?
- a) **Removes an arbitrary element**
  - b) Removes all the key-value pairs
  - c) Removes the key-value pair for the key given as an argument
  - d) Invalid method for dictionary
30. What will be the output of the following Python code snippet?
- ```
a = {}
a[1] = 1
a['1'] = 2
a[1]=a[1]+1
count = 0
for i in a:
count += a[i]
print(count)
```
- a) Error, the keys can't be a mixture of letters and numbers
 - b) 2
 - c) **4**
 - d) 1
31. What will be the output of the following Python code snippet?
- ```
>>>import collections
>>> b=collections.Counter([2,2,3,4,4,4])
>>> b.most_common(1)
```
- a) Counter({4: 3, 2: 2, 3: 1})
  - b) {3:1}
  - c) {4:3}
  - d) **[(4, 3)]**
32. Which of the following is not a declaration of the dictionary?
- a) {1: 'A', 2: 'B'}
  - b) dict([[1,"A"],[2,"B"]])
  - c) **{1,"A",2"B"}**
  - d) { }
33. Which of these about a dictionary is false?
- a) The values of a dictionary can be accessed using keys
  - b) **The keys of a dictionary can be accessed using values**
  - c) Dictionaries aren't ordered
  - d) Dictionaries are mutable
34. To which of the following the "in" operator can be used to check if an item is in it?
- a) Lists
  - b) Dictionary
  - c) Set
  - d) **All of the mentioned**
35. What will be the output of the following Python code?
- ```
def example(L):
    "" (list) -> list
    ""

    i = 0
    result = []
```




```
while i < len(L):  
    result.append(L[i])  
    i = i + 3  
return result
```

a) Return a list containing every third item from L starting at index 0

b) Return an empty list

c) Return a list containing every third index from L starting at index 0

d) Return a list containing the items from L starting from index 0, omitting every third item

36. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1]?

a) Error

b) None

c) **25**

d) 2

37. 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)

38. What will be the output of the following Python code?

```
lst=[[1,2],[3,4]]
```

```
print(sum(lst,[]))
```

a) [[3],[7]]

b) **[1,2,3,4]**

c) Error

d) [10]

39. Which of the following functions does not necessarily accept only iterables as arguments?

a) enumerate()

b) all()

c) **chr()**

d) max()

40. What will be the output of the following Python functions?

```
chr('97')
```

```
chr(97)
```

a)a

Error

b)'a'

a

c)**Error**

a

d)Error

Error



4. Python Functions, Modules and Packages

Position in Question Paper

Total Marks: 14

Q.1 e) 2-Marks.

Q.2 d) 4-Marks.

Q.3 d) 4-Marks.

Q.5 b) 6-Marks.

Descriptive Question:

1. Define function.
2. How to create user-defined function in python?
3. Explain the concept of parameter passing to python function.
4. Can python function return the value? Justify your answer with example.
5. Define and explain local variables and global variables with suitable examples.
6. Write a short note on: Functions with default arguments.
7. What is kwargs in python? Explain its use.
8. Does the python allow the nested function definitions? Justify your answer.
9. Write a python program to demonstrate variable length arguments. Also explain that program.
10. Explain the following built in functions.
a) all() b) hasattr() c) oct() d) eval() e) isinstance ()
11. Explain any four data conversions functions in python.
12. Explain input() and print() functions in python .
13. How to create the module in python?
14. Explain from.....import statement.
15. Explain python built-in module: random
16. Explain use of lambda expression with example.
17. Explain the use map function with example.
18. Write a program to create bar chart using matplotlib.

MCQ Question:

- 1) Which keyword is use for function?
a) define
b) fun
c) **def**
d) function
- 2) Which of the following items are present in the function header?
a) function name
b) parameter list
c) return value
d) **Both A and B**
- 3) What is called when a function is defined inside a class?



- c) Error, method factorial doesn't exist in math module
d) Error, the statement should be: print(factorial(5))
- 22) What is the order of namespaces in which Python looks for an identifier?
a) Python first searches the global namespace, then the local namespace and finally the built-in namespace
b) Python first searches the local namespace, then the global namespace and finally the built-in namespace
c) Python first searches the built-in namespace, then the global namespace and finally the local namespace
d) Python first searches the built-in namespace, then the local namespace and finally the global namespace
- 23) Which of the following is false about “import modulename” form of import?
a) The namespace of imported module becomes part of importing module
b) This form of import prevents name clash
c) The namespace of imported module becomes available to importing module
d) The identifiers in module are accessed as: modulename.identifier
- 24) What is the order of namespaces in which Python looks for an identifier?
a) Python first searches the global namespace, then the local namespace and finally the built-in namespace
b) Python first searches the local namespace, then the global namespace and finally the built-in namespace
c) Python first searches the built-in namespace, then the global namespace and finally the local namespace
d) Python first searches the built-in namespace, then the local namespace and finally the global namespace
- 25) What will be the output of the following Python code?
1. def printMax(a, b):
2. if a > b:
3. print(a, 'is maximum')
4. elif a == b:
5. print(a, 'is equal to', b)
6. else:
7. print(b, 'is maximum')
8. printMax(3, 4)
a) 3
c) 4 is maximum
b) 4
d) None of the mentioned
- 26) What will be the output of the following Python code?
1. x = 50
2. def func(x):
3. print('x is', x)
4. x = 2
5. print('Changed local x to', x)



6. `func(x)`
7. `print('x is now', x)`
a) **x is 50, Changed local x to 2, x is now 50**
b) x is 50, Changed local x to 2, x is now 2
c) x is 50, Changed local x to 2, x is now 100
d) None of the mentioned
- 27) What will be the output of the following Python code?
- `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
- 28) What will be the output of the following Python code?
- `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
- 29) 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)`
- 30) The output of the functions `len("abc")` and `sys.getsizeof("abc")` will be the same.
a) True
b) **False**
- 31) What will be the output of the following Python code, if the sys module has already been imported?
- ```
sys.stdout.write("hello world")
```
- a) helloworld  
b) hello world10  
c) **hello world11**  
d) error



- 32) Which of the following functions is not defined under the sys module?  
a) sys.platform  
b) sys.path  
c) **sys.readline**  
d) sys.argv
- 33) The output of the function len(sys.argv) is \_\_\_\_\_  
a) Error  
b) **1**  
c) 0  
d) Junk value
- 34) 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))**
- 35) Which of the following functions is a built-in function in python?  
a) seed()  
b) sqrt()  
c) factorial()  
d) **print()**
- 36) The function pow(x,y,z) is evaluated as:  
a)  $(x**y)**z$   
b)  $(x**y) / z$   
c)  **$(x**y) \% z$**   
d)  $(x**y)*z$
- 37) What will be the output of the following Python code?  
import sys  
sys.argv[0]  
a) Junk value  
b) **‘ ‘**  
c) No output  
d) Error
- 38) What will be the output of the following Python code?  
import sys  
eval(sys.stdin.readline())  
"India"  
a) India5  
b) India  
c) **‘India\n’**  
d) **‘India’**
- 39) Which of the following is the use of id() function in python?  
a) Id() returns the size of object.  
b) Both A and B  
c) **Id() returns the identity of the object**  
d) None of the above
- 40) What will be the output of the following Python expression? round(4.576)  
a) 4.5  
b) **5**  
c) 4  
d) 4.6





## 5. Object Oriented Programming in Python

Position in Question Paper

Total Marks: 12

Q.2 d) 4-Marks.

Q.3 e) 4-Marks.

Q.4 d) 4-Marks.

### Descriptive Question:

1. What is class? How to declare class in python?
2. State the use of parameter 'self' in python class.
3. Explain constructor function in python class with example.
4. Can we overload constructor function in python? Justify your answer.
5. Can we call constructor and destructor function manually in python? Justify your answer.
6. Write a program to demonstrate parameterized constructor in base class and derived class.
7. How to create abstract method in python? Explain with example.
8. Python does not allow method overloading. Then explain alternate ways of achieving the similar effect of overloading.
9. Write a short note on method overriding in python.
10. Explain the use `_str_()` and `_repr()` function in Python.

### MCQ Question:

1. The assignment of more than one function to a particular operator is \_\_\_\_\_
  - a) Operator over-assignment
  - b) Operator overriding
  - c) Operator overloading**
  - d) Operator instance
2. Which of the following is not a class method?
  - a) Non-static**
  - b) Static
  - c) Bounded
  - d) Unbounded
3. What are the methods which begin and end with two underscore characters called?
  - a) Special methods**
  - b) In-built methods
  - c) User-defined methods
  - d) Additional methods
4. Special methods need to be explicitly called during object creation.
  - a) True
  - b) False**
5. `__del__` method is used to destroy instances of a class.
  - a) True**
  - b) False
6. What does `print(Test.__name__)` display (assuming Test is the name of the class)?
  - a) ()
  - b) Exception is thrown**



c) Test

d) `__main__`

7. What is `hasattr(obj,name)` used for?

- a) To access the attribute of the object
- b) To delete an attribute
- c) To check if an attribute exists or not**
- d) To set an attribute

8. What is `delattr(obj,name)` used for?

- a) To print deleted attribute
- b) To delete an attribute**
- c) To check if an attribute is deleted or not
- d) To set an attribute

9. Is the following Python code valid?

```
class B(object):
 def first(self):
 print("First method called")
 def second():
 print("Second method called")
ob = B()
B.first(ob)
```

- a) It isn't as the object declaration isn't right
- b) It isn't as there isn't any `__init__` method for initializing class members
- c) Yes, this method of calling is called unbounded method call**
- d) Yes, this method of calling is called bounded method call

10. What will be the output of the following Python code?

```
>>> class demo():
 def __repr__(self):
 return '__repr__ built-in function called'
 def __str__(self):
 return '__str__ built-in function called'
>>> s=demo()
>>> print(s)
```

- a) `__str__` called**
- b) `__repr__` called
- c) Error
- d) Nothing is printed

11. Which of the following statements is wrong about inheritance?

- a) Protected members of a class can be inherited
- b) The inheriting class is called a subclass
- c) Private members of a class can be inherited and accessed**
- d) Inheritance is one of the features of OOP

12. What will be the output of the following Python code?

```
class A():
 def disp(self):
 print("A disp()")
```



class B(A):

pass

obj = B()

obj.disp()

a) Invalid syntax for inheritance

b) Error because when object is created, argument must be passed

c) Nothing is printed

**d) A disp()**

13. Which of the following is not a type of inheritance?

**a) Double-level**

c) Single-level

b) Multi-level

d) Multiple

14. What type of inheritance is illustrated in the following Python code?

```
class A():
```

```
 pass
```

```
class B():
```

```
 pass
```

```
class C(A,B):
```

```
 pass
```

a) Multi-level inheritance

c) Hierarchical inheritance

**b) Multiple inheritance**

d) Single-level inheritance

15. Suppose B is a subclass of A, to invoke the `__init__` method in A from B, what is the line of code you should write?

**a) A.\_\_init\_\_(self)**

c) A.\_\_init\_\_(B)

b) B.\_\_init\_\_(self)

d) B.\_\_init\_\_(A)

16. What is meant by Method Overloading?

a) Same function name with same parameters in terms of length

b) Different function names with same parameters in terms of type

**c) Same function name with different parameters in terms of length and type**

d) Different function name with different parameters in terms of length and type

17. Python naturally supports Method Overloading :

a) True

**b) False**

18. Method Overloading reduces the code :

**a) True**

b) False

19. Method Overloading can be achieved by using :

a) Formal Arguments

**c) Default Arguments**

b) Actual Arguments

d) All of these

20. If user haven't pass any argument in function, to make result errorless it is must :

a) Default arguments should be present

b) Function shouldn't take any arguments

**c) Both a and b**

d) None of these

21. Which of these is not a fundamental features of OOP?



- a) Encapsulation  
b) Inheritance
- c) **Instantiation**  
d) Polymorphism
22. Which of the following is the most suitable definition for encapsulation?
- a) Ability of a class to derive members of another class as a part of its own definition  
b) **Means of bundling instance variables and methods in order to restrict access to certain class members**  
c) Focuses on variables and passing of variables to functions  
d) Allows for implementation of elegant software that is well designed and easily modified
23. What will be the output of the following Python code?
- ```
class Demo:  
    def __init__(self):  
        self.a = 1  
        self.__b = 1  
  
    def display(self):  
        return self.__b  
obj = Demo()  
print(obj.a)
```
- a) The program has an error because there isn't any function to return self.a
b) The program has an error because b is private and display(self) is returning a private member
c) **The program runs fine and 1 is printed**
d) The program has an error as you can't name a class member using __b
24. Methods of a class that provide access to private members of the class are called as _____ and _____
- a) **getters/setters**
b) __repr__/_str__
c) user-defined functions/in-built functions
d) __init__/_del__
24. Private members of a class cannot be accessed.
- a) True
b) **False**
25. The purpose of name mangling is to avoid unintentional access of private class members.
- a) **True**
b) False
26. Which of the following is false about protected class members?
- a) They begin with one underscore
b) They can be accessed by subclasses
c) **They can be accessed by name mangling method**
d) They can be accessed within a class
27. Which of the following best describes polymorphism?
- a) Ability of a class to derive members of another class as a part of its own definition
b) Means of bundling instance variables and methods in order to restrict access to



- certain class members
- c) Focuses on variables and passing of variables to functions
 - d) Allows for objects of different types and behaviour to be treated as the same general type**
28. What is the use of duck typing?
- a) More restriction on the type values that can be passed to a given method
 - b) No restriction on the type values that can be passed to a given method
 - c) Less restriction on the type values that can be passed to a given method**
 - d) Makes the program code smaller
29. What is the biggest reason for the use of polymorphism?
- a) It allows the programmer to think at a more abstract level
 - b) There is less program code to write
 - c) The program will have a more elegant design and will be easier to maintain and update**
 - d) Program code takes up less space
30. A class in which one or more methods are only implemented to raise an exception is called an abstract class.
- a) True**
 - b) False
31. Overriding means changing behaviour of methods of derived class methods in the base class.
- a) True
 - b) False**
32. Which of the following statements is true?
- a) A non-private method in a superclass can be overridden**
 - b) A subclass method can be overridden by the superclass
 - c) A private method in a superclass can be overridden
 - d) Overriding isn't possible in Python
33. What happens when '1' == 1 is executed?
- a) we get a True
 - b) we get a False
 - c) an TypeError occurs
 - d) a ValueError occurs**
34. When is the finally block executed?
- a) when there is no exception
 - b) when there is an exception**
 - c) only if some condition that has been specified is satisfied
 - d) always
35. All subclasses are a subtype in object-oriented programming. Is the statement true or false?
- a) True
 - b) False**
 - c) May be
 - d) Can't say
36. What does single-level inheritance mean?
- a) A subclass derives from a class which in turn derives from another class
 - b) A single superclass inherits from multiple subclasses
 - c) A single subclass derives from a single superclass**



- d) Multiple base classes inherit a single derived class
37. Which of the following statements isn't true?
- a) A non-private method in a superclass can be overridden
 - b) A derived class is a subset of superclass
 - c) The value of a private variable in the superclass can be changed in the subclass**
 - d) When invoking the constructor from a subclass, the constructor of superclass is automatically invoked
38. Method `issubclass()` checks if a class is a subclass of another class. True or False?
- a) True**
 - b) False
 - c) May be
 - d) Can't say
39. Which of the following best describes polymorphism?
- a) Ability of a class to derive members of another class as a part of its own definition
 - b) Means of bundling instance variables and methods in order to restrict access to certain class members
 - c) Focuses on variables and passing of variables to functions
 - d) Allows for objects of different types and behaviour to be treated as the same general type**
40. What is the biggest reason for the use of polymorphism?
- a) It allows the programmer to think at a more abstract level
 - b) There is less program code to write
 - c) The program will have a more elegant design, and will be easier to maintain and update**
 - d) Program code takes up less space



6. File I/O Handling and Exception Handling

Position in Question Paper

Total Marks: 12

Q.2 c) 4-Marks.

Q.3 d) 4-Marks.

Q.6 c) 6-Marks.

Descriptive Question:

1. Explain print() function with its arguments.
2. Explain following file related operations:
 - a) Opening a file
 - b) writing into a file using write() function
 - c) reading from a file using readline() function
3. Explain any four file modes in python.
4. Explain seek() and tell() function for file pointer manipulation.
5. Explain following python function w.r.t Dictionary.
 - a) getcwd()
 - b) mkdir()
 - c) chdir()
 - d) listdir()
 - e) exist()
6. Explain rename() and remove() function w.r.t Dictionary.
7. Explain use of try:except block with example.
8. Write a program to demonstrate try with multiple exception.
9. Explain except: block without any exception name to it.
10. Can a single except: block handle multiple exception?
11. How to manually raise an exception? Explain with example.
12. How to create user defined exception and raise it manually? Explain with a complete example.

MCQ Question:

1. How many except statements can a try-except block have?
 - a) zero
 - b) one
 - c) more than one
 - d) more than zero**
2. Which of the following is not an exception handling keyword in Python?
 - a) try
 - b) except
 - c) accept**
 - d) finally
3. Which block lets you test a block of code for errors?
 - a) try**
 - b) except
 - c) finally
 - d) None of the above



4. What will be output for the following code?

```
try:  
    print(x)  
except:  
    print("An exception occurred")
```

- a) x
- b) An exception occurred**
- c) Error
- d) None of the above

5. What will be output for the following code?

```
x = "hello"  
if not type(x) is int:  
    raise TypeError("Only integers are allowed")
```

- a) hello
- b) garbage value
- c) Only integers are allowed**
- d) Error

6. What will be output for the following code?

```
try:  
    f = open("demofile.txt")  
    f.write("Lorum Ipsum")  
except:  
    print("Something went wrong when writing to the file")  
finally:  
    f.close()
```

- a) demofile.txt
- b) Lorum Ipsum
- c) Garbage value
- d) Something went wrong when writing to the file**

7. Which exception raised when a calculation exceeds maximum limit for a numeric type?

- a) StandardError
- b) ArithmeticError
- c) OverflowError**
- d) FloatingPointError

8. Which exception raised in case of failure of attribute reference or assignment?

- a) AttributeError**
- b) EOFError
- c) ImportError
- d) AssertionError

9. Can one block of except statements handle multiple exception?

- a) yes, like except TypeError, SyntaxError [...]**
- b) yes, like except [TypeError, SyntaxError]
- c) No
- d) None of the above

10. The following Python code will result in an error if the input value is entered as -5.

- a) True**
- b) False
- c) Can be true or false
- d) Cannot say

11. What will be output for the following code?

```
x=10 ;    y=8  
assert x>y, 'X too small'
```



- a) Assertion Error
b) 10 8
- c) **No output**
d) 108
12. Which of the following statements is true?
a) **The standard exceptions are automatically imported into Python programs**
b) All raised standard exceptions must be handled in Python
c) When there is a deviation from the rules of a programming language, a semantic error is thrown
d) If any exception is thrown in try block, else block is executed
13. _____ exceptions are raised as a result of an error in opening a particular file.
a) ValueError
b) TypeError
c) ImportError
d) **IOError**
14. An exception is _____
a) **an object**
b) a special function
c) a standard module
d) a module
15. The readlines() method returns _____
a) str
b) **a list of lines**
c) a list of single characters
d) a list of integers
16. When is the finally block executed?
a) when there is no exception
b) when there is an exception
c) only if some condition that has been specified is satisfied
d) **always**
17. What happens when '1' == 1 is executed?
a) we get a True
b) **we get a False**
c) an TypeError occurs
d) a ValueError occurs
18. Which of the following blocks will be executed whether an exception is thrown or not?
a) except
b) else
c) **finally**
d) assert
19. Which of the following is not a standard exception in Python?
a) NameError
b) IOError
c) **AssignmentError**
d) ValueError
20. What will be the output of the following Python code?
int('65.43')
a) ImportError
b) **ValueError**
c) TypeError
d) NameError
21. 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()
22. 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")`
23. 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
24. To read two characters from a file object `infile`, we use _____
a) **`infile.read(2)`**
b) `infile.read()`
c) `infile.readline()`
d) `infile.readlines()`
25. 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()`
26. Which are the two built-in functions to read a line of text from standard input, which by default comes from the keyboard?
a) **`Raw_input & Input`**
b) `Input & Scan`
c) `Scan & Scanner`
d) `Scanner`
27. Which one of the following is not attributes of file?
a) `closed`
b) `softspace`
c) **`rename`**
d) `mode`
28. What is the use of `tell()` method in python?
a) **tells you the current position within the file**
b) tells you the end position within the file
c) tells you the file is opened or not
d) none of the mentioned
29. What is the current syntax of `rename()` a file?
a) **`rename(current_file_name, new_file_name)`**
b) `rename(new_file_name, current_file_name,)`
c) `rename()(current_file_name, new_file_name)`
d) none of the mentioned
30. What is the use of `seek()` method in files?
a) **sets the file's current position at the offset**
b) sets the file's previous position at the offset
c) sets the file's current position within the file
d) none of the mentioned
31. What is the use of `truncate()` method in file?
a) **truncates the file size**
b) deletes the content of the file
c) deletes the file size
d) none of the mentioned
32. Which is/are the basic I/O connections in file?
a) **Standard Input**
b) **Standard Output**



- c) Standard Errors **d) All of the mentioned**
33. Which function is used to write a list of string in a file?
a) **writeline()** c) writestatement()
b) writelines() d) writefullline()
34. Which function is used to close a file in python?
a) **Close()** c) End()
b) Stop() d) Closefile()
35. Which function is used to read all the characters?
a) **Read()** c) Readall()
b) Readcharacters() d) Readchar()
36. Which of the following is not a valid mode to open a file?
a) ab c) r+
b) **rw** d) w+
37. What is the current syntax of rename() a file?
a) **rename(current_file_name, new_file_name)**
b) rename(new_file_name, current_file_name,)
c) rename()(current_file_name, new_file_name))
d) none of the mentioned
38. What will be the output of the following Python code?
f = None
for i in range (5):
 with open("data.txt", "w") as f:
 if i > 2:
 break
print(f.closed)
a) **True** c) None
b) False d) Error
39. What will be the output of the following Python code?
def f(x):
 for i in range(5):
 yield i
g=f(8)
print(list(g))
a) **[0, 1, 2, 3, 4]** c) [1, 2, 3, 4, 5]
b) [1, 2, 3, 4, 5, 6, 7, 8] d) [0, 1, 2, 3, 4, 5, 6, 7]
40. When will the else part of try-except-else be executed?
a) always
b) when an exception occurs
c) **when no exception occurs**
d) when an exception occurs in to except block