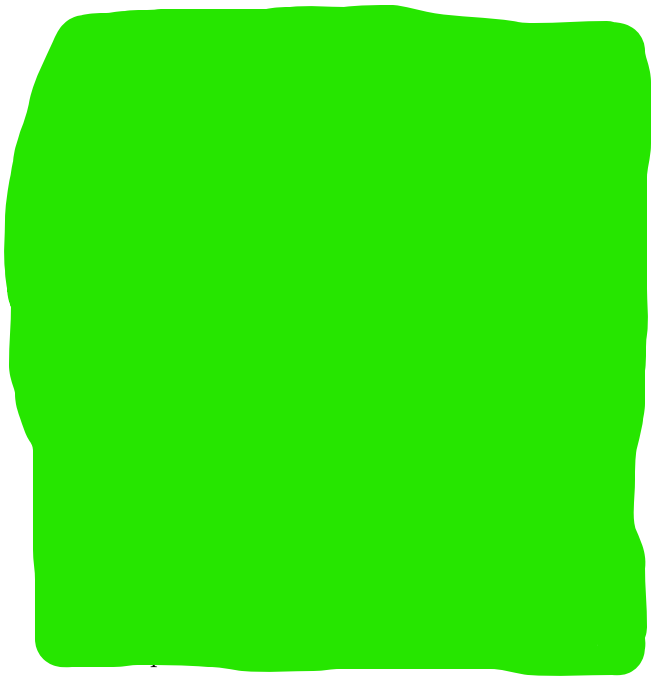

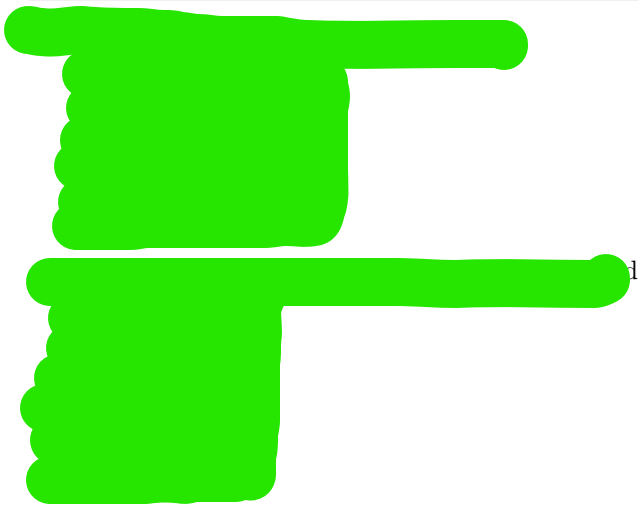

3. Which one is **not** a valid identifier?

   (A) my.variable
   (B) my-variable
   (C) _my_variable
   (D) my__variable

4. What is the type of $(2 + 1//2)$?

   (A) bool
   (B) int
   (C) float
   (D) double

5. Which operator has the highest precedence?

   (A) `*`
   (B) `and`
   (C) `-`
   (D) `+`

6. What is returned by `range(5, 11, 3)`?

   (A) `[5, 6, 7]`
   (B) `[5, 8, 11]`
   (C) `[8, 11]`
   (D) `[5, 8]`

7. What is printed by the program ?

```
i = 3
X=[1, 3, 5, 7, 9, 11, 13]

for j in X:
       if (j % i) :
              print j,
```

   (A) `1, 3, 5, 7, 9, 11, 13`
   (B) `1, 5, 7, 11, 13`
   (C) `5, 7, 11, 13`
   (D) `1`

8. What is printed by the program ?

```
i = 3
X=[1, 3, 5, 7, 9, 11, 13]

for j in X:
       if (j % i) :
            continue
       print j,
```

   (A) `3, 9`
   (B) `1, 5, 7, 11, 13`
   (C) `5, 7, 11, 13`
   (D) `1`

9. What is printed by the program ?

```
for i in [1,2,3,4]:
       for j in [3,4,5,6]:
            if i < j:
                  break
            print j,
```

(A) `3`

(B) `3, 4`

(C) `3, 3, 4`

(D) `4`

10. Which option is valid?

(A) It is possible to apply binary search on unsorted array.

(B) Array must be sorted first in order for the binary search algorithm to work.

(C) Binary search is inefficient than linear search.

(D) None of the above.

11. What should we replace x and y (respectively in that order) in the below program to do a valid bubble sort on a list A?

```
for i in range(len(A)):
  for j in range(0, len(A)-i-1):
              if A[x] > A[y] :
                 A[x], A[y] = A[y], A[x]
```

(A) i, j

(B) $j, j+1$

(C) j, i

(D) $i, i+1$

12. What is the idea behind selection sort?

(A) At each iteration swap adjacent elements that are not in the correct order.

(B) Divide the list into two parts, sort each of them, and then merge them back.

(C) At the i^{th} iteration insert the i^{th} element of the list in its correct position.

(D) None of the above.

13. What should we fill the blanks with for the following function to compute the n^{th} Fibonacci number?

```
def fib(n):
    if n==0:
        return 0
    if n==1:
        return 1
    return ______________
```

(A) `fib(n+1) + fib(n)`

(B) `fib(n) + fib(n-1)`

(C) `fib(n-1) + fib(n-2)`

(D) `fib(n-2) + fib(n-3)`

14. `print "helloworld"[2:4]` prints _____?

(A) he

(B) el

(C) ll

(D) lo

15. `"thiruvananthapuram".split('a')` yields

(A) `['thiruv', 'n', 'nth', 'pur', 'm']`

(B) `['thiruv' 'nanthapuram']`

(C) `['thiruv', 'a', 'n', 'a', 'nth', 'a', 'pur','a', 'm']`

(D) None of the above

16. The binary equivalent of the decimal number 10 is _____?

(A) 0010

(B) 10

(C) 1010

(D) 010

17. The hexadecimal equivalent of the binary number 0010111011100 is _____?

(A) 5AC

(B) 5BC

(C) 5CC

(D) 5DC

18. The octal representation of the hexadecimal number `AA` is _____?

(A) 252

(B) 363

(C) 464

(D) 575

19. The binary representation of the decimal number `.625` is _____?

(A) .1100

(B) .1011

(C) .1010

(D) .1111

20. The result of binary addition of 1101 + 0010 is _____?

(A) 1110

(B) 1111

(C) 0111

(D) 1,1101

21. Binary multiplication 1010 * 1100 results in _____?

(A) 0001111

(B) 1111100

(C) 1111000

(D) 0011111

22. What is printed by the program ?

```
i=1
while i<4:
    print i,
    if 2*i > 7:
          break
    i+=1
else:
    print i,
```

(A) `1, 2, 3`

(B) `1, 2, 3, 4`

(C) `1, 2, 3, 3`

(D) `1, 2`

23. What is the output of the following code?

```
L=['a', 'b', 'c', 'd']
print "".join(L)
```

(A) Error

(B) None

(C) `['a', 'b', 'c', 'd']`

(D) abcd

24. What is the output of the following program :

```
y = 8
z = lambda x : x * y
print z(y)
```

(A) Error

(B) `lambda y : y * y`

(C) 64

(D) 8

25. For tuples and list which is correct?

(A) List and tuples both are mutable.

(B) List is mutable whereas tuples are immutable.

(C) List and tuples both are immutable.

(D) List is immutable whereas tuples are mutable.

26. What command is used to insert 6 in a list X at 3rd position ?

(A) X.insert(2,6)

(B) X.insert(3,6)

(C) X.add(3,6)

(D) X.append(2,6)

27. Which of the function among will return `4` on the list `s = [3, 5, 1, 2]`?

(A) `sum(s)`

(B) `len(s)`

(C) `max(s)`

(D) `min(s)`

28. Suppose `L= [2, 33, 222, 14, 25]`, What is `L[-1]`?

(A) Error

(B) None

(C) 25

(D) 2

29. Suppose `L=[2, 33, 222, 14, 25]`, What is `L[:-1]`?

(A) `[2, 33, 222, 14]`

(B) Error

(C) 25

(D) `[25, 14, 222, 33, 2]`

30. How do you start writing a for loop in Python?

(A) `for each x in y:`

(B) `for x in y:`

(C) `for x > y:`

(D) `for each x`

31. 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))`

32. Suppose

```
A=[ [1,2,3],
    [4,5,6],
    [7,8,9]]
```

Then `A[1]` is _____

(A) `[4, 5, 6]`

(B) `[3, 6, 9]`

(C) `[1, 4, 7]`

(D) `[1, 2, 3]`

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

```
A=[ [1,2,3],
    [4,5,6],
    [7,8,9]]
 print [A[i][i] for i in  range(len(A))]
```

(A) `[2, 5, 8]`

(B) `[3, 5, 7]`

(C) `[4, 5, 6]`

(D) `[1, 5, 9]`

34. Running the below program results in

```
 class Sales:
   def __init__(self, id):
       self.id = id
       id = 100
val = Sales(123)
print val.id
```

(A) SyntaxError

(B) 100

(C) 123

(D) None of the above

35. The error generated by the below code is

```
i=10
j=i+k
```

(A) NameError

(B) SyntaxError

(C) Attribute Error

(D) IndexError

36. The error generated by the below code is

```
i=10
for j in range(10):
     print i/j
```

(A) NameError

(B) SyntaxError

(C) ZeroDivisionError

(D) IndexError

37. The result is

```
L = [5, 7, 22, 97, 54, 62, 77, 23, 73, 61]
K = filter(lambda x: (x%2 != 0), L)
print K
```

(A) `[22,54,62]`

(B) `[5, 7, 97, 77,23,73,61]`

(C) `5 7 97 77 23 73 61`

(D) `22 54 62`

38. What does the following code do?

```
K = reduce((lambda x, y: x + y), L)
```

(A) K is a list obtained by appending L to L.

(B) K is the sum of all the elements in L.

(C) K the list of all tuples of the form (x, y) where x and y belongs to L.

(D) K the list of all sums $x + y$ where x and y belongs to L.

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

```
f = lambda x : bool(x%2)
print f(20), f(21)
```

(A) False True

(B) False False

(C) True True

(D) True False

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

```
def f(x):
    return x<2

print filter(f, [1, -2, -3, 4, 5])
```

(A) `[1, 4, 5]`

(B) `Error`

(C) `[-2, -3]`

(D) `[1, -2, -3]`

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

```
def f(x):
    return x<-1

print map(f, [1, -2, -3, 4, 5])
```

(A) `[False, False, False, False, False]`

(B) `[0, -2, -4, 3, 4]`

(C) `[1, -2, -3, 4, 5]`

(D) `[False, True, True, False, False]`

42. What is the default return value for a function that does not return any value explicitly?

(A) None

(B) Int

(C) Bool

(D) Null

43. What is the output of the following code?

```
def f(x):
     x = 20

x = 10
f(x)
print x
```

(A) 20

(B) x

(C) Error

(D) 10

44. What is the output of the following code?

```
def f(y):
     return x+y

x = 10
print f(20)
```

(A) 30

(B) A callable object

(C) NameError

(D) 20

45. What is the output of the following code?

```
def f(y):
     x=x+y
     return x

x = 10
print f(20)
```

(A) 30

(B) UnboundLocalError

(C) NameError

(D) IndexError

46. What is the output of the following code?

```
def f(Y):
   Y[0] = 20

X = [10, 11, 12, 13, 14, 15]
f(X)
print X
```

(A) `[10, 11, 12, 13, 14, 15]`

(B) `[20, 11, 12, 13, 14, 15]`

(C) `[20, 21, 22, 23, 24, 25]`

(D) `[11, 12, 13, 14, 15]`

47. What does the following code finds?

```
def find(n):
    sum = 0
    for x in range(1, n):
        if n % x == 0:
            sum += x
    return sum
x = input()
print find(x)
```

(A) Sum of digits of x

(B) Sum of remainders of x

(C) Sum of factors of x

(D) Computes Error

48. What will be printed?

```
class Student:
    def __init__(self):
        print "I am called",
    def show(self, name):
        print "Hello", name
student = Student()
student.show("Sundar")
```

(A) Hello Sundar

(B) I am called Hello Sundar

(C) I am called

(D) Hello Sundar I am called

49. What will be the outcome of the following code snippet?

```
class myclass:
     A = []
     def __init__(self):
               pass

foo=myclass()
myclass.A.append(0)
myclass.A.append(1)
print foo.A
```

(A) `[]`

(B) `NameError`

(C) `[0, 1]`

(D) `None of the above`

50. What will be printed?

```
class myclass:
    def __init__(self):
        print "Hello World"
    def __init__(self):
        print "Bye World"
 obj=myclass()
```

(A) Bye World

(B) Hello World

(C) Error

(D) Ambiguity