1) How to run / execute a python file?
Ans: python filename.py

2) By which python indicates a block of code?
Ans: Indentation

3) Is it a valid python code:

```
if 5 > 2:
print("Five is greater than two!")
```

Ans: No (because it's not well indented)

4) Write any valid variable in python?
Ans: age = 25

5) Which naming convention we've to follow when we write a variable name in Python?
Ans: snake_case

6) Which naming convention we've to follow when we write a function or method name?
Ans: snake_case

7) Which naming convention we've to follow when we write a class name?
Ans: PascalCase

8) Make the following line a comment: Hello world!
Ans: #Hello world!

9) Print the following line: Hello from UGV
Ans: print("Hello from UGV")

10) How we can find the data type of a variable?
Ans: type(variable_name)

11) Is python variable name case-sensitive?
Ans: yes

12) By which syntax we can declare HELLO as a string?
Ans: "HELLO" 'HELLO' str("HELLO")

13) Is 2students a valid variable name?
Ans: no

14) Is b@nk a valid variable name?
Ans: no

15) Assign "Orange", "Mango", "Grape" into x, y, z variable at a time?
Ans: x, y, z = "Orange", "Mango", "Grape"

16) Assign 0 into x, y, z variables at a time?
Ans: x = y = z = 0

17) Unpack all values from the following variable into three separate variables? fruits = ("Orange", "Mango", "Banana")

Ans: x, y, z = fruits

18) In python how do we get input from the user?
Ans: by using input() function

19) By which keyword we can change the value of a global variable from inside a function?
Ans: By using global keyword before that variable name

20) Create a variable named best_fruit and assign “Mango” to it
Ans: best_fruit = “Mango”

21) What is the data type of “Hello from UGV”?
Ans: str (string)

22) What is the data type of 5?
Ans: int

23) What is the data type of 10.5?
Ans: float

24) What is the data type of 4j?
Ans: complex

25) What is the data type of [“apple”, “banana”, “cherry”]?
Ans: list

26) What is the data type of (“apple”, “banana”, “cherry”)?
Ans: tuple

27) What is the data type of {“apple”, “banana”, “cherry”}?
Ans: set

28) What is the data type of {"name" : "John", "age" : 36}?
Ans: dict

29) What is the data type of True?
Ans: bool

30) What is the data type of None?
Ans: NoneType

31) Write down all three numeric data types in python?
Ans: int, float, complex

32) Type cast “5” to integer?
Ans: int(“5”)

33) Type cast “10” to float?
Ans: float(“10”)

34) How to type cast 13 to string?
Ans: str(13)

35) Type cast [“Orange”, “Berry”, “Grape”] to tuple?
Ans: tuple([“Orange”, “Berry”, “Grape”])

36) Which syntax is used to create a multi line string?
Ans: """""""

a = “Hello world”

37) Get ‘e’ from variable a?
Ans: a[1]

38) Check the length of variable a?
Ans: len(a)

39) Check the existence of “world” in variable a?
Ans: “world” in a

40) Check “ugv” not in variable a?
Ans: “ugv” not in a

41) Get “ello” from variable a?
Ans: a[1:5]

42) Get “world” from variable a?
Ans: a[-5:]

43) Get “hello” from variable a?
Ans: a[:5]

44) Get “d” from variable a?
Ans: a[-1]

45) Make all characters of variable a to uppercase?
Ans: a.upper()

45) Make all characters of variable a to lowercase?
Ans: a.lower()

46) Which method is used to remove white spaces from the beginning and the ending of a string?
Ans: a.strip()

47) Replace the word “world” from variable a and make it “ugv”?
Ans: a.replace(“world”, “ugv”)

48) Use a string method to divide the value of variable a using a space and output it as a list?
Ans: print(a.split(“ “))

49) Concatenate (add) “ from UGV” to variable a and output it without changing the variable a?
Ans: print(a + “ from UGV”)

name = “Aslam”
age = 13

50) Output “My name is Aslam and I’m 13 years old” using f string?
Ans: print(f”My name is {name} and I’m {age} years old”)

51) Store “He said, “Hello” to the students” to variable b using escape characters?
Ans: b = “He said, \“Hello\” to the students”

52) Which escape character is used to print something in a new line?
Ans: \n

a = “hello world”

53) Output the value of variable a as “Hello World”
Ans: print(a.title())

54) Output the value of variable a as “Hello world”
Ans: print(a.capitalize())

55) Check if the value of variable a ends with “rld”?
Ans: a.endswith(“rld”)

56) Check if the value of variable a starts with “world”?
Ans: a.startswith(“world”)

57) Check how many “o” are there in the value of variable a?
Ans: a.count(“o”)

58) Check if all the characters of variable a is in uppercase?
Ans: a.isupper()

59) Check if all the characters of variable a is numeric?
Ans: a.isnumeric()

60) Check if all characters of variable a is space?
Ans: a.isspace()

61) In python is it possible to the following operation: 3 + “9”
Ans: no

62) How to typecast “10” to integer?
Ans: int(“10”)

63) How to typecast “10” to float?
Ans: float(“10”)

64) How to typecast 10.8 to integer?
Ans: int(10.8)

65) How to typecast 20 to string?

Ans: str(20)

66) Give some example of truthy value?
Ans: 4, “hello”, [2,3,6], (4, 6, 2), {“name”: “Atiq”, “age”: 29}, True

67) Give some example of falsy value?
Ans: 0, “”, False, None, {}, [], ()

68) Give some example of arithmetic operators?
Ans: +, -, *, /, %, **, //

69) Give some example of Assignment operators?
Ans: =, +=, -=, *=, /=, %=, //=

70) Give some example of comparison operators?
Ans: ==, !=, >, <, >=, <=

71) Give some example of logical operators?
Ans: and, or, not

72) Give some example of identity operators?
Ans: is, is not

73) Give some example of membership operators?
Ans: in, not in

75) Write the expression to check if a is greater than or equal to b at the same time a is smaller than c?
Ans: a >= b and a < c

fruit_list = `["apple", "banana", "cherry", "orange", "kiwi", "melon"]`

76) How to check the data type of fruit_list variable?
Ans: type(fruit_list)

77) What is the data type of fruit_list variable?
Ans) list

78) Is fruit_list a mutable data type?
Ans: yes

79) How to check the length of fruit_list?
Ans: len(fruit_list)

80) How to get “banana” from fruit_list variable?
Ans: fruit_list[1]

81) How to get “banana”, “cherry”, “orange” from fruit_list?
Ans: fruit_list[1:4]

82) How to get last 3 items from the fruit_list?

Ans: fruit_list[-3:]

84) How to get first four items from the list?
Ans: fruit_list[:4]

85) How to check the existence of “cherry” in fruit_list variable?
Ans: “cherry” in fruit_list

86) Change “banana” to “mango” in fruit_list variable?
Ans: fruit_list[1] = “mango”

87) Add “water melon” as the third item in fruit_list?
Ans: fruit_list.insert(2, “water melon”)

88) Add “jack fruit” as the last item in fruit_list?
Ans: fruit_list.append(“jack fruit”)

89) How to add list_two with list_one (how to extend a list)?
Ans: list_one.extend(list_two)

90) How to remove the last item from the fruit_list?
Ans: fruit_list.pop()

91) How to remove “cherry” from the list?
Ans: fruit_list.remove(“cherry”)

92) How to remove the third item from the list?
Ans: fruit_list.pop(2)

93) How to clear fruit_list?
Ans: fruit_list.clear()

94) Change all items of fruit_list to uppercase?
Ans: fruit_list = [fruit.upper() for fruit in fruit_list]

95) Sort fruit list in ascending order?
Ans: fruit_list.sort()

96) Sort fruit_list in descending order?
Ans: fruit_list.sort(reverse=True)

97) Change the data type of fruit_list and make it a tuple?
Ans: tuple(fruit_list)

```
fruit_list = ("apple", "banana", "cherry")
```

98) Is it possible to change “banana” to “orange” in fruit_list?
Ans: no

99) Unpack all values of fruit_list to a, b, c variable?
Ans: a, b, c = fruit_list

100) Check how many “cherry” are there in fruit_list variable?
Ans: fruit_list.count(“cherry”)

fruit_list = {"apple", "banana", "cherry"}

fruit_list2 = {“orange”, “berry”}

101) Is it possible to store duplicate values in a set?
Ans: no

102) How to get the length of fruit_list?
Ans: len(fruit_list)

103) How to check the existence of “apple” in fruit_list?
Ans: “apple” in fruit_list

104) Add “orange” to fruit_list?
Ans: fruit_list.add(“orange”)

105) Add fruit_list2 with fruit_list?
Ans: fruit_list.update(fruit_list2)

106) Remove “banana” from fruit_list?
Ans: fruit_list.remove(“banana”)

107) Is it possible to access set item with index value?
Ans: no

108) How to safely remove “cherry” from fruit_list?
Ans: fruit_list.discard(“cherry”)

109) How to clear all items from fruit_list?
Ans: fruit_list.clear()

110) How to remove fruit_list completely?
Ans: del fruit_list

nums1 = {1, 4, 5, 2, 9, 7}
nums2 = {2, 1, 8, 4}

111) How to get both common and uncommon values of nums1 and nums2 set?
Ans: nums1.union(nums2)

112) How to permanently join nums1 with nums2 with both of their common and uncommon values?
Ans: nums1.update(nums2)

113) How to get only common values of nums1 and nums2 set?
Ans: nums1.intersection(nums2)

114) How to permanently join nums1 with nums2 with only their common values?
Ans: nums1.intersection_update(nums2)

115) How to get only uncommon values of nums1 and nums2 set?
Ans: nums1.symmetric_difference(nums2)

116) How to permanently join nums1 with nums2 with only their uncommon values?
Ans: nums1.symmetric_difference_update(nums2)

117) How to check if nums1 is the superset of nums2?
Ans: nums1.issuperset(nums2)

118) How to check if nums2 is the subset of nums1?
Ans: nums2.issubset(nums1)

student = {"name": "Sohan", "age": 35, "gender": "Male"}

119) What is the data type of student variable?
Ans: dict (dictionary)

120) How to get ‘age’ property from student variable?
Ans: student[“age”]

121) How to safely access ‘age’ property from student variable?
Ans: student.get(“age”)

122) How to set “cgpa” property with value of 3.78 in student dictionary?
Ans: student[“cgpa”] = 3.78

123) How to increment 1 to ‘age’ property of student dictionary?
Ans: student[“age”] += 1

124) How to add multiple key values in student dictionary at a time?
Ans: student.update({“key1”: “value1”, “key2”: “value2”})

125) Remove age property from student dictionary?
Ans: student.pop(“age”)

126) How to remove the last added item from student dictionary?
Ans: student.popitem()

126) How to get ‘weight’ property from student dictionary and set default value to 65 if weight property not found in the dictionary?
Ans: student.setdefault(“weight”, 65)

127) How to clear or remove all items from the student dictionary?
Ans: student.clear()

128) How to get all keys from student dictionary?
Ans: student.keys()

129) How to get all values from student dictionary?
Ans: student.values()

130) How to get all items from student dictionary?
Ans: student.items()

131) Which keyword is used to break or terminate a loop?
Ans: break

132) Which keyword is used to continue a loop without executing next lines?
Ans: continue

133) Which keyword is used to create a function?
Ans: def

134) Which keyword is used to return something from a function?
Ans: return

135) How to call a function?
Ans: function_name()

136) How to create a function with allowing multiple arguments?
Ans: def function_name(*args):

137) How to create a function with allowing multiple keyword arguments?
Ans: def function_name(**kwargs):

138) How to create a function with a default parameter?
Ans: def function_name(key = value):

139) In which data type we get multiple arguments in function body?
Ans: tuple

140) In which data type we get multiple keyword arguments in function body?
Ans: dict (dictionary)

141) What is recursive function?
Ans: A recursive function is a function that can call itself.

142) How to declare a function without defining it's body?
Ans: def function_name():
    pass

143) What is module?
Ans: Module is a file containing a set of functions you want to include in your application.

144) How to use my_module.py module in my current python file?
Ans: import my_module

145) How to import specific function from my_module.py module?
Ans: from my_module import function_name

146) What is try block?

Ans: The try block lets you test a block of code for errors.

147) What is except block?

Ans: The except block lets you handle the error.

148) What is else block in error handling?

Ans: The else block lets you execute code when there is no error.

149) What is finally block in error handling?

Ans: The finally block lets you execute code, regardless of the result of the try- and except blocks.

150) Which keyword is used to raise a error in python?

Ans: raise

151) How to debug python code in a pythonic way?

Ans: by using pdb module

152) What is break point?

Ans: A break point is a place where program pauses the execution process and waiting for us to manually execute the program line by line. This is used to find bugs in our code.

153) How to set a break point in our code for debugging?

Ans: pdb.set_trace()

154) What is bug in programming?

Ans: In programming bug is the code that is responsible for causing error in the program

155) What is debugging?

Ans: Debugging is a way of finding bugs from our code

156) By which pdb command we can print a variable value?

Ans: p

157) By which pdb command we can execute the next line of code?

Ans: n

158) By which pdb command we can list current working block?

Ans: l

159) By Which pdb command we can execute rest of the code without debugging?

Ans: c

160) By which pdb command we can quit from the debugging process?

Ans: q

161) After debugging is it a good idea to keep debugging related code in the program?

Ans: no