Sorted Python Question Bank

Object-Oriented Programming (OOP)

1. Which of the following is the correct file extension for Python files?

a) .pyt

b) .pt

c) .py

d) .python

2. What will be the output of: print(type(10))?

a)

b)

c)

d)

3. Which keyword is used to define a function in Python?

a) function

b) fun

c) define

d) def

4. What is the correct syntax to install a package in Python?

a) python install package-name

b) install package-name

c) pip install package-name

d) pip package-name install

5. What is the output of: len([1, 2, 3, [4, 5]])?

a) 4

b) 5

c) Error

d) 2

6. Which data structure does NOT allow duplicate values?

a) List

b) Tuple

c) Set

d) Dictionary

7. What will be the result of: {1:'a', 1:'b'}?

a) {'a':1, 'b':1}

b) {1:'a', 1:'b'}

c) {1:'b'}

d) Error

8. Which of the following is true about modules?

a) They are used only for mathematical functions

b) They allow reusability of code

c) They are the same as classes

d) They must always be downloaded

9. Which OOP feature bundles data and functions together?

a) Abstraction

b) Inheritance

c) Polymorphism

d) Encapsulation

10. Which method is the constructor in Python classes?

a) __init__()

b) __start__()

c) __construct__()

d) __build__()

11. Which statement is used to open a file in write mode?

a) open("file.txt", "a")

b) open("file.txt", "r")

c) open("file.txt", "w")

d) open("file.txt")

12. Lambda functions are also known as:

a) inline functions

b) static functions

c) recursive functions

d) anonymous functions

13. What does a decorator typically do?

a) Modifies the functionality of a function

b) Deletes functions from memory

c) Converts functions into classes

d) Speeds up file handling

14. A generator function must contain which keyword?

a) yield

b) return

c) gen

d) pause

15. What is the command to create a virtual environment in Python 3?

a) python3 virtualenv env

b) python3 -m venv env

c) create virtual env

d) pip create env

16. NumPy arrays are better than Python lists because they:

a) Consume more memory

b) Do not support mathematical operations

c) Are slower than lists

d) Support vectorized operations

17. Which function creates a NumPy array?

a) np.create()

b) np.array()

c) numpy.list()

d) array()

18. In Pandas, which object is 2-dimensional and tabular?

a) Series

b) DataFrame

c) List

d) Panel

19. Which command reads a CSV file into a DataFrame?

a) pd.read.txt()

b) pd.read()

c) pd.read_csv()

d) pd.open_csv()

20. In Matplotlib, which function is used to plot a line graph?

a) plt.line()

b) plt.plot()

c) plt.graph()

d) plt.draw()

1. Which command is used to check the installed Python version?

a) python --v

b) python --version

c) pyversion

d) python -info

2. Which of the following is a valid variable name?

a) 2value

b) value-2

c) _value2

d) value 2

17. Which Pandas method is used to rename columns?

a) df.name()

b) df.rename()

c) df.columns()

d) df.change()

18. Which Python statement is used to execute a block only if a condition is false?

a) unless

b) else

c) otherwise

d) not-if

19. In class definitions, what does self represent?

a) current module

b) base class

c) current object instance

d) global variable

20. Which function returns the next item from an iterator?

a) forward()

b) next()

c) step()

d) iterate()

1. Does Python support the concept of variables?

A. Yes, Python variables directly hold values inside fixed memory locations
B. Yes, but Python variables must be created using a declaration keyword
C. Yes, but Python variables act as references that point to objects in memory
D. Yes, but Python variables can only reference built-in data types

2. Which attributes can be used with the print() function?
A. before and after : to control text alignment
B. first and last : to specify starting and ending characters
C. open and close : to decide whether the print statement stays active
D. sep and end : to control value separation and line termination

3. Python was named after which reference?
A. A high-performance computing project developed in the 1980s
B. A British comedy group known for sketch comedy
C. A widely studied species of constrictor snake
D. An early European research program on programming languages

4. What is the basic difference between variable declaration and variable definition?
A. Declaration reserves memory, while definition only assigns a default value but we do the both at same
time
B. Declaration specifies type, while definition allocates memory
C. Declaration is required before assigning a value to any variable
D. python does not differentiate between declaration and definition; assignment creates the reference

5. Which code correctly converts a list into integer type?
A. nums = int(["1","2","3"])
B. nums = list(map(int, ["1","2","3"]))
C. nums = ["1","2","3"].to_int()
D. nums = convert(int, ["1","2","3"])

6. For the given situation, which loop type is the best fit . You are building a login system that keeps asking the
user for a password until the correct one is entered. The number of attempts is unknown.
A. while loop
B. for loop
C. map() loop
D. range-based loop

7. What are custom modules in Python?
A. Special system-level files that only Python internally uses
B. User-created .py files that contain reusable functions, classes, or variables
C. Built-in libraries automatically loaded with every Python program
D. Third-party packages downloaded from the internet

8. What is the correct way to raise an error inside a custom module?
A. print("Something went wrong")
B. throw Error("Invalid input")
C. raise ValueError("Invalid input")
D. exception.ValueError("Invalid input")

9. Which statement correctly explains the purpose of a try–except block?
A. It allows you to handle runtime errors without stopping the entire program
B. It compiles Python code into machine-level instructions
C. It guarantees faster execution by skipping error checks
D. It prevents all errors from occurring in the first place

10. What is the role of self in object-oriented programming?

A. It stores the class name so methods can detect which class they belong to
B. It automatically tracks memory usage for each object instance
C. It refers to the module where the class is defined
D. It refers to the current object instance when accessing attributes or methods

11. For large real-world ERP systems, which programming paradigm is preferred?
A. Object-oriented programming, because it models complex systems using reusable components
B. Procedural programming, because ERP systems rarely require modular design
C. Functional programming, because ERP logic must avoid maintaining state
D. Event-driven programming, because ERP systems mainly respond to mouse and keyboard events

12. For the given code, which change correctly implements encapsulation?
class BankAccount:
def __init__(self, balance):
self.balance = balance
A. Rename the variable to balance_amount so its purpose is easier to recognize
B. Add a second parameter to __init__() to allow more account options
C. Make balance a private attribute and provide getter/setter methods
D. Store balance as a global variable so it can be shared across all objects

13. What is the main difference between standard deviation and median?
A. Standard deviation measures the midpoint of data, while median measures how spread out the values
are
B. Standard deviation and median both measure data spread, but median is always larger
C. Standard deviation measures data variability, while median represents the central value
D. Standard deviation finds the most frequent value, while median finds the least frequent

14. What is the meaning of vectorization in NumPy?
A. Performing array operations without explicit Python loops for faster execution
B. Converting every list into a vector before running any computation
C. Storing all values in a single continuous Python list for optimization
D. Running NumPy code on a GPU automatically without any libraries

15. Why is NumPy preferred over Python lists and the built-in array module?
A. Because NumPy automatically converts all data into strings for safety
B. Because NumPy lists store each element in separate memory blocks
C. Because NumPy disables type checking, making operations simpler
D. Because NumPy uses optimized C-based arrays for speed and supports vectorized

operations

16. What will be the output of the given reshape operation?
import numpy as np
arr = np.array([1, 2, 3, 4, 5, 6])
reshaped = arr.reshape(2, 3)
print(reshaped)
A. [[1, 2],
[3, 4],
[5, 6]]
B. [[1, 3, 5],
[2, 4, 6]]
C. [[1, 2, 3],
[4, 5, 6]]
D. [[1, 2, 3, 4, 5, 6]]

17. What will the statement print() do when called without arguments?
A. It throws an error because print() requires at least one argument
B. It prints a blank line
C. It prints a default message stored in the system printer
D. It pauses the program but prints nothing

18. Which option converts a column of strings to datetime?
A. df["date"] = df["date"].todate()
B. df["date"] = df.date.as_datetime()
C. df["date"] = pd.to_datetime(df["date"])
D. df.date.convert(datetime)

19. Which code correctly saves a plot to a file?
A. plt.save("output.png")
B. plt.savefig("output.png")
C. plt.store("output.png")
D. plt.plot.save("output.png")

20. Which code correctly creates a scatter plot with a regression line?
A. plt.regress(x, y)
B. plt.scatterline(x, y)
C. plt.plotreg(x, y)
D. plt.scatter(x, y); plt.plot(x, y_pred)

1. How can you print the value 008 in Python as an integer?

a. print(008) b.print(int(008)) c.print(int(0o10)) d.print(0o008)

2. Which programming paradigm does Python primarily follow?
A. Only object-oriented programming, with no support for functional features
B. Only procedural programming, similar to older language
C. A strictly functional paradigm with immutable data by default
D. A multi-paradigm approach supporting procedural, object-oriented, and functional styles

10. For the given code, which OOP concept is being implemented?
class Animal:
def speak(self):
return "Some sound"
class Dog(Animal):
pass
A. Inheritance : Dog reuses the behavior of Animal
B. Encapsulation : speak() is hidden and cannot be accessed from child classes
C. Polymorphism : Dog is overriding speak() to change its behavior
D. Abstraction : Animal is an abstract class that cannot be instantiated

11. For the given code, which change correctly implements abstraction?
class Payment:
def process(self, amount):
print(f"Processing payment of ■{amount}...")
A. Rename process() to _process() to indicate it is internally used
B. Turn Payment into an abstract base class and make process() an abstract method
C. Move the print statement into another helper function inside the same class
D. Add more parameters to process() so different payment types can be handled

12. What is the correct way of using the super() keyword along with its definition?
A. super(self).__init__() : calls the constructor of the current class before the parent
B. super(ClassName, self) : accesses all methods of the child class automatically
C. super().__init__() : invokes the parent class's initializer
D. super(self).method() : runs the method in the shared namespace of both classes

13. What does the __init__ function do in a Python class?
A. It deletes unused objects at the end of the program
B. It initializes object attributes when a new instance is created
C. It is called only once when the module is imported
D. It runs automatically when the class definition is compiled

14. For the given project, which Python library would be the most appropriate? You are working on a project
where for given student data, preview the data using functions like head(), tail(), info(), and describe(), filter
students based on grade or age, and sort the results by multiple columns.
A. NumPy
B. Matplotlib
C. Pandas
D. Seaborn

14. What will this print?
class Test:■
x = 5■
obj = Test()■
print(obj.x)
A. Error■
B. None■
C. 0■
D. 5

15. Which concept allows multiple classes to have methods with the same name but different behavior?
A. Abstraction■
B. Polymorphism■
C. Encapsulation■
D. Overriding

12. In Pandas, which method returns summary statistics (like mean, std, min, max) of numerical columns in a DataFrame?
A. df.info()■
B. df.describe()■
C. df.summary()■
D. df.stats()

17. For OOP, what does the term “encapsulation” mean?
A. Hiding internal state and requiring methods for accessing data■
B. Allowing multiple inheritance■
C. Overriding base class methods■
D. Creating multiple objects

1. Which of the following is NOT a feature of Python?
A. Interpreted■
B. Easy-to-learn■
C. Low-level memory management■
D. Object-oriented

14. Which OOP concept allows creating a subclass from an existing class?
A. Polymorphism■
B. Inheritance■
C. Encapsulation■
D. Abstraction

15. What will this code output?
class A:
def show(self):
return "A"

class B(A):
pass

obj = B()
print(obj.show())
A. Error■
B. B■
C. A■
D. None

Data Structures

3. Which operator is used for floor division?

a) /

b) //

c) %

d) **

4. What does the pass statement do?

a) Exits the program

b) Creates a loop

c) Does nothing; acts as a placeholder

d) Skips an iteration

5. Which data structure is ordered and mutable?

a) List

b) Tuple

c) Set

d) Dictionary keys

6. What will the expression my_tuple = (10,) create?

a) An integer

b) A tuple with one element

c) An empty tuple

d) A string

7. Which method is used to add an element to a set?

a) append()

b) add()

c) insert()

d) push()

8. Which module is used to generate random numbers?

a) math

b) random

c) numbers

d) itertools

9. What is the term for functions inside a class?

a) Objects

b) Methods

c) Attributes

d) Instances

10. Which keyword is used for inheritance in Python?

a) extend

b) include

c) inherits

d) class Child(Parent)

11. Which file mode is used to read and write without erasing existing content?

a) w

b) r

c) a+

d) w+

12. In decorators, which symbol is used directly before the decorator name?

a) #

b) @

c) &

d) %

13. Which of the following best describes generator objects?

a) They store all values in memory

b) They produce values on demand

c) They must return lists

d) They cannot be iterated

14. Which statement is true about lambda functions?

a) They can contain multiple statements

b) They must have a name

c) They are defined using the lambda keyword

d) They always return None

15. Which command activates a virtual environment?

a) env/activate

b) source env/bin/activate

c) activate env

d) python activate env

16. Which function creates a NumPy array of zeros?

a) np.zeros()

b) np.empty()

c) np.null()

d) np.zero_array()

17. In Pandas, what does df.head() return?

a) Last 5 rows

b) Summary statistics

c) First 5 rows

d) Only the header

18. Which attribute of a NumPy array returns its dimensions?

a) size

b) shape

c) ndim

d) dimension

19. In Matplotlib, which command displays the final plot?

a) plt.show()

b) plt.display()

c) plt.start()

d) plt.run()

20. Which Pandas function is used to combine two DataFrames horizontally?

a) merge()

b) concat()

c) groupby()

d) join()

1. Which of the following is NOT a valid Python data type?

a) list

b) tuple

c) set

d) arraylist

2. Which function is used to take input from the user?

a) scan()

b) read()

c) input()

d) get()

3. What will the expression 3 ** 2 evaluate to?

a) 5

b) 6

c) 9

d) 8

4. Which of the following loops in Python can have an else part?

a) for loop only

b) while loop only

c) both for and while

d) neither for nor while

5. What is the output type of range(5)?

a) list

b) range object

c) array

d) tuple

6. Which method adds an element at a specific index in a list?

a) add()

b) insert()

c) append()

d) push()

7. How is a dictionary defined?

a) {}

b) []

c) ()

d) <>

8. Which of the following is used to import a specific function from a module?

a) import module.function

b) from module import function

c) module import function

d) import function from module

9. In OOP, what is the blueprint for creating objects?

a) attribute

b) function

c) class

d) module

10. What is the term for a function that calls itself?

a) generator

b) decorator

c) recursive function

d) iterator

11. Which file mode creates a new file and raises an error if it exists?

a) w

b) x

c) a

d) r+

12. Which built-in function returns the number of items in an object?

a) size()

b) count()

c) len()

d) total()

13. Which keyword is used to handle an exception?

a) exception

b) handle

c) catch

d) except

14. What does the map() function do?

a) Maps a dictionary

b) Applies a function to each item of an iterable

c) Converts strings to integers

d) Creates a list of keys

15. Which keyword is used inside a generator function?

a) create

b) fetch

c) yield

d) return-all

16. Which of the following is used to install NumPy?

a) pip install np

b) pip install numpy

c) install numpy python

d) python numpy install

17. In Pandas, which method removes missing values?

a) clean()

b) dropna()

c) remove_null()

d) na_remove()

18. Which attribute of a NumPy array returns the number of dimensions?

a) shape

b) ndim

c) axis

d) depth

19. Which Matplotlib command adds a title to a plot?

a) plt.set_title()

b) plt.title()

c) plt.header()

d) plt.caption()

20. Which Pandas function is used to read an Excel file?

a) pd.read_excel()

b) pd.load_xls()

c) pd.open_excel()

d) pd.excel_read()

1. Which keyword is used to terminate a loop prematurely?

a) stop

b) break

c) exit

d) quit

2. What is the default return value of a Python function if no return statement is used?

a) 0

b) False

c) None

d) Empty string

3. Which operator is used to check identity between two objects?

a) ==

b) is

c) equals

d) :=

4. What is the correct syntax to create a class named Student?

a) class Student[]:

b) class Student():

c) class Student{}

d) class Student<>:

5. Which built-in function is used to convert a sequence into an iterator?

a) iter()

b) next()

c) it()

d) sequence()

6. Which of the following can be keys in a dictionary?

a) lists

b) sets

c) tuples

d) dictionaries

7. What is the purpose of the with statement in file handling?

a) To open multiple files

b) To ensure files are closed automatically

c) To append text easily

d) To encrypt file data

8. Which exception is raised when accessing an index that does not exist?

a) ValueError

b) KeyError

c) IndexError

d) TypeError

9. What does the zip() function do?

a) Compresses files

b) Pairs elements from iterables into tuples

c) Creates a zip folder

d) Lists directory contents

10. Which of the following is used to apply a function cumulatively in Python?

a) reduce()

b) map()

c) filter()

d) apply()

11. Which Python file is executed when a package is imported?

a) install.py

b) start.py

c) main.py

d) init.py

12. Which command is used to list installed packages in a virtual environment?

a) pip list

b) pip packages

c) venv list

d) env packages

13. What is the output of NumPy's arange() function?

a) random numbers

b) evenly spaced values

c) zeros

d) one value only

14. Which Pandas method combines datasets based on a common column?

a) concat()

b) merge()

c) join_all()

d) append()

15. In NumPy, what does dtype represent?

a) Data type of array elements

b) Dimensions of array

c) Default typecasting rule

d) Name of the array

16. What does df.describe() provide in Pandas?

a) Data types of columns

b) Summary statistics

c) Last few rows

d) Duplicate row count

17. Which Matplotlib function creates a bar chart?

a) plt.bar()

b) plt.bars()

c) plt.chart()

d) plt.vbar()

18. In Python, which keyword is used to define an anonymous block of code?

a) do

b) anon

c) lambda

d) func

19. Which statement is true about Python lists?

a) They are immutable

b) They store only numeric data

c) They can grow or shrink dynamically

d) They must contain unique values

20. Which function returns the memory address of an object?

a) ref()

b) loc()

c) id()

d) addr()

1. Which symbol is used for comments in Python?

a) //

b) #

c) /* */

d)

2. Which built-in function returns the absolute value of a number?

a) mod()

b) absolute()

c) abs()

d) pos()

3. Which of the following is a mutable data type?

a) tuple

b) list

c) string

d) int

4. What does continue do in a loop?

a) ends the loop

b) restarts the loop

c) skips the current iteration

d) exits the function

5. What is the result type of division operator / in Python?

a) int

b) float

c) string

d) depends on operands

6. What does the pop() method do in a list?

a) removes the first element

b) removes and returns the last element

c) deletes the entire list

d) inserts an item

7. Which method returns all keys of a dictionary?

a) get_keys()

b) keys()

c) allkeys()

d) listkeys()

15. What is the correct step to create a virtual environment in Python?
A. python -m venv env — creates a virtual environment in the folder env
B. pip install venv — installs a new Python interpreter for virtual use
C. python create env — initializes a Python-managed system environment
D. venv --auto — automatically detects and builds virtual environment

16. Which statement correctly modifies a column in a DataFrame?
A. Columns cannot be replaced once created
B. Columns must be reset before assigning new values
C. Column modification automatically changes the index
D. Assigning df["col"] = ... updates or replaces values

17. Which option correctly merges two DataFrames?
A. Merging is only possible if DataFrames share the same index
B. pd.merge(df1, df2, on="id") joins rows based on a common column
C. Merge operations always delete duplicate rows first
D. Merge only works when both DataFrames contain numeric data

18. Which option correctly customizes a plot?
A. plt.title("Sales Data") adds a title
B. plt.name("Sales Data") renames the figure
C. plt.settext("Sales") sets global labels
D. plt.plotlabel("Sales Data") creates text automatically

19. Which option correctly creates a horizontal bar plot?
A. plt.barrotate()
B. plt.hbar(x, y)
C. plt.barh(x, y)
D. plt.bar.horizontal(x, y)

20. Which option correctly loads a CSV and displays its first rows?
A. df = pd.read_csv("data.csv"); print(df.head())
B. df = pd.load("data.csv"); print(df.top())
C. df = pd.file("data.csv"); df.start()
D. df = read.csv("data.csv"); head(df)

12. Which data structure does NOT allow duplicates?
A. List■
B. Tuple■
C. Set■
D. Dictionary

13. Which statement is correct about tuples?
A. They are mutable■
B. They are immutable■
C. They support append()■
D. They behave like sets

17. What is NumPy primarily used for?
A. Machine learning algorithms■
B. Numerical computations and arrays■
C. Web development■
D. File handling

20. What is a common first step in data cleaning?
A. Adding random values■
B. Dropping duplicate rows■
C. Increasing dataset size■
D. Encrypting the data
1.Which command is used to check the installed Python version on your system?
A. python --check■
B. python -v■
C. python --version■
D. python show-version

6. Which statement correctly defines an empty set?
A. s = {}■
B. s = []■
C. s = set()■
D. s = ()

18. Which of these will correctly create a dictionary with keys “a”, “b” and values 1, 2?
A. {'a':1, 'b':2}■
B. {a:1, b:2}■
C. dict('a'=1, 'b'=2)■
D. dict(a;1, b;2)

9. Which built-in function gives the largest element of a list?
A. big()■
B. max()■
C. top()■
D. high()

12. Which data structure is unordered and contains unique elements?
A. List■
B. Tuple■
C. Set■
D. Dictionary

13. What is the output?
my_tuple = (10, 20, 30)
print(len(my_tuple))
A. 1■
B. 2■
C. 3■
D. 30

18. In Pandas, which data structure is used to store tabular data?
A. Series■
B. DataFrame■
C. Array■
D. Matrix

20. Which step is part of basic data cleaning?
A. Encrypting data■
B. Dropping missing values■
C. Adding random values■
D. Increasing dataset size
Que 1: Python was developed by:
(A)■Dennis Ritchie
(B)■James Gosling
(C)■Guido van Rossum
(D)■Bjarne Stroustrup

Que 2: Which command runs a Python file?
(A)■ run file.py
(B)■ execute file.py
(C)■ python file.py
(D)■ open file.py

Que 3: Which function displays output?
(A)■input()
(B)■show()
(C)■display()
(D)■print()

Que 4:Which function checks data type?
(A)■datatype()
(B)■typeof()
(C)■type()
(D)■check()

Que 5: Python is a:
(A)■Statically typed language
(B)■Dynamically typed language
(C)■Low-level language
(D)■Machine-dependent language

Que 6: What will be the output for below code?
(A)■5
(B)■6
(C)■7
(D)■8

Que 7: What will be the output for below code?
(A)■[1,4,9]
(B)■[2,4,6]
(C)■[2, 2,6]
(D)■[1,4, 4]
Que 8: What will be the output for below code?

(A)■3
(B)■4
(C)■2
(D)■1

Que 9: What will be the output for below code?
(A)■True
(B)■False
(C)■Hi
(D)■Error

Que 10: What will be the output for below code?
(A)■3
(B)■4
(C)■2
(D)■1

Que 11: What will be the output for below code?
(A)■y
(B)■t
(C)■p
(D)■n
Que 12: What will be the output for below code?
(A)■{1, 2, 3, 4}
(B)■{1, 2, 4, 3}
(C)■{1, 2, 3, 3, 4}
(D)■{1, 2, 3, 4, 3}

Que 13: What will be the output for below code?

(A)■True
(B)■False
(C)■0
(D)■Error

Que 14: What will be the output for below code?
(A)■True
(B)■False
(C)■0
(D)■Error

Que 15: What will be the output for below code?
(A)■([1], [1,1])
(B)■([1], [1])
(C)■([1], [1, 1])
(D)■([1, 1],[1,1])

Que 16: What will be the output for below code?
(A)■2 5
(B)■2 4
(C)■2 3
(D)■0 1

Que 17: What will be the output for below code?
(A)■True
(B)■False
(C)■0
(D)■Error

Que 18: What will be the output for below code?
(A)■1
(B)■2
(C)■3
(D)■4

Que 19: What will be the output for below code?
(A)■float
(B)■int
(C)■Error
(D)■str
Que 20: What will be the output for below code?
(A)■5
(B)■7
(C)■6
(D)■4

Que 1: Function used to take input:
(A)■scan()
(B)■read()
(C)■input()
(D)■get()

Que 2: Membership operator is:
(A)■==
(B)■!=
(C)■in
(D)■is

Que 3: range(1,5) generates:
(A)■1 to 5
(B)■1 to 4
(C)■0 to 5
(D)■0 to 4
Que 4: Which function gives length?
(A)■count()
(B)■size()
(C)■length()
(D)■len()

Que 5: Variable scope refers to:
(A)■Variable memory size
(B)■Variable accessibility
(C)■Variable name
(D)■Variable type

Que 6: What will be the output for code?
(A)■True
(B)■False
(C)■0
(D)■Error

Que 7: What will be the output for code?
(A)■set
(B)■dict
(C)■list

(D)■tuple

Que 8: What will be the output for code?
(A)■[1]
(B)■[1, 2]
(C)■[1, 2, 3]
(D)■[1, 3]

Que 9: What will be the output for code?

(A)■abc
(B)■abcabc
(C)■abc abc
(D)■abcc

Que 10: What will be the output for code?
(A)■True
(B)■False
(C)■0
(D)■1
Que 11: What will be the output for code?
(A)■0
(B)■1
(C)■0 1
(D)■1 0
Que 12: What will be the output for code?
(A)■6
(B)■3
(C)■4
(D)■2
Que 13: What will be the output for code?
(A)■n
(B)■o
(C)■h
(D)■P

Que 14: What will be the output for code?
(A)■int
(B)■float
(C)■bool
(D)■str

Que 15: What will be the output for code?
(A)■2
(B)■3
(C)■4
(D)■5
Que 16: What will be the output for code?
(A)■True
(B)■False
(C)■0
(D)■1
Que 17: What will be the output for code?
(A)■1
(B)■2
(C)■3
(D)■4
Que 18: What will be the output for code?
(A)■1
(B)■2
(C)■3
(D)■None

Que 19: What will be the output for code?
(A)■[1, 2]
(B)■[2, 3]
(C)■[3, 4]
(D)■[2, 4]

Que 20: Why use with in files?
(A)■Faster execution
(B)■Auto close file
(C)■Encryption
(D)■Reading only
Que 1: Lambda functions are best for:
(A)■Large complex programs
(B)■Reusable multi-line logic
(C)■Short one-line functions
(D)■File handling

Que 2: Which Keyword used to access parent class:
(A)■parent

(B)■super
(C)■base
(D)■this

Que 3: __init__() method is used for:
(A)■Deleting object
(B)■Initializing object
(C)■Inheriting class
(D)■Printing object

Que 4: Object is an instance of:
(A)■Module
(B)■Function
(C)■Class
(D)■Package

Que 5: Which data structure uses key–value pairs?
(A)■List
(B)■Tuple
(C)■Set
(D)■Dictionary
Que 6: What will be the output for code?
(A)■True True
(B)■False True
(C)■True False
(D)■False False
Que 7: What will be the output for code?
(A)■1
(B)■2
(C)■3
(D)■[1, 2]

Que 8: What will be the output for code?
(A)■1
(B)■1.2
(C)■1.5
(D)■2

Que 9: What will be the output for code?
(A)■1
(B)■1.2

(C)■1.5
(D)■2

Que 10: What will be the output for code?
(A)■True
(B)■False
(C)■0
(D)■1
Que 11: What will be the output for code?
(A)■5 4 3
(B)■4 5
(C)■3 4 5
(D)■3 4
Que 12: What will be the output for code?
(A)■NameError
(B)■5
(C)■0
(D)■5 5

Que 13: What will be the output for code?
(A)■1
(B)■0
(C)■2
(D)■3

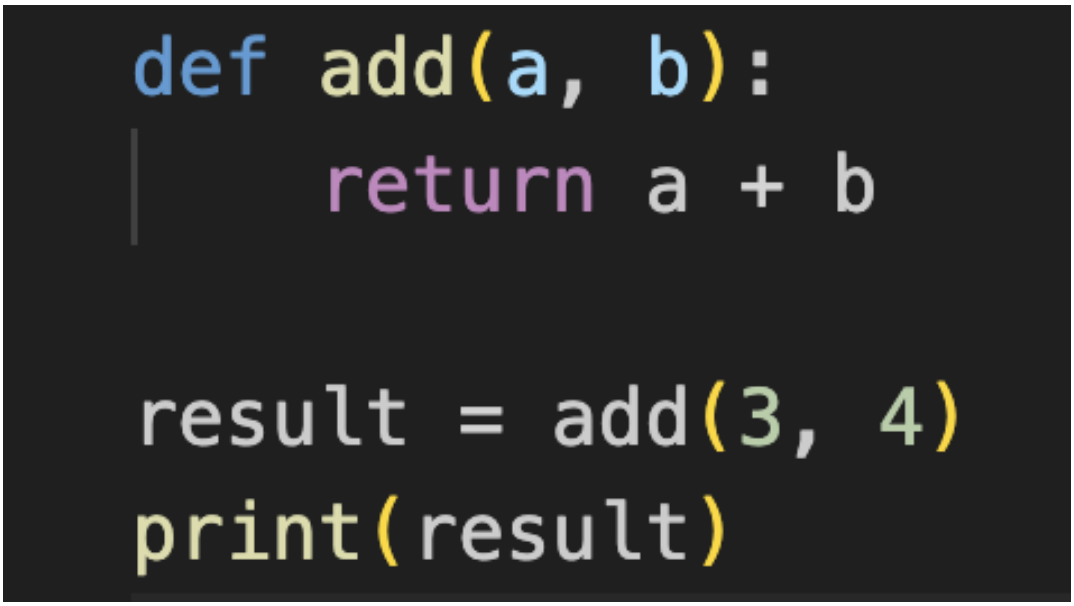
Que 14: What will be the output for code?
(A)■function
(B)■class
(C)■method
(D)■error

Que 15: What will be the output for code?
(A)■date
(B)■time
(C)■datetime
(D)■str
Que 16: What will be the output for code?
(A)■1
(B)■2
(C)■3
(D)■4

Que 17: What will be the output for code?
(A)■5
(B)■3
(C)■7
(D)■2

Que 18: Which is immutable?
(A)■List
(B)■Set
(C)■Tuple
(D)■Dictionary
Que 19: What will be the output for code?
(A)■5
(B)■2
(C)■10
(D)■7

Que 20: What will be the output for code?
(A)■5
(B)■6
(C)■7
(D)■3



```
print(list(map(lambda x: x*x, [1,2,3])))
```

```
x = (1,2,3)
x += (4,)
print(len(x))
```

```
with open("x.txt","w") as f:
    f.write("Hi")
print(f.closed)
```

```
import math
print(math.floor(3.9))
```

```
print(max("python"))
```

```
print({1,2,3} | {3,4})
```

```
x = 10
print(x is 10)
```

```
print(bool(""))
```

```
def f(x=[]):
    x.append(1)
    return x
print(f(), f())
```

```
for i in range(2, 5):
    if i == 3:
        continue
    print(i, end = " ")
```

```
print(10 > 5 and 3 < 2)
```

```
a = [1, 2, 3]
b = a
b.append(4)
print(len(a))
```

```
print(type(int("10.5")))
```

```
x = 5
y = x
x += 2
print(y)
```

```
a = 5
print(a == 5 or a > 10)
```

```
print(type({}))
```

```
x = [1,2]
y = x[:]
y.append(3)
print(x)
```

```
print("abc" * 2)
```

```
print(5 in [1,2,3])
```

```
for i in range(3):
    print(i)
    break
```

```
def f(a,b=2):
    return a*b
print(f(3))
```

```
x = "Python"
print(x[-1])
```

```
import random
print(type(random.random()))
```

```
print({1:2}.get(1))
```

```
class A:
    pass
obj = A()
print(isinstance(obj, A))
```

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

```
def f():
    return
print(f())
```

```
print(list(filter(lambda x: x>2, [1,2,3,4])))
```

```
print(bool(0), bool(1))
```

```
x = [1,2,3]
print(x.pop())
```

```
print(3/2)
```

```
print(3//2)
```

```
print("a" in "data")
```

```
for i in range(5,2,-1):
    print(i,end=" ")
```

```
def f():
    x=5
f()
print(x)
```

```
print(len([[]]))
```

```
print(type(lambda x:x))
```

```
import datetime
print(type(datetime.datetime.now()))
```

```
a = {1,2,3}
a.add(4)
print(len(a))
```

```
print(min([5,3,7]))
```

```
class A:
    def __init__(self):
        self.x=10
print(A().x)
```

```
def f(a,b):
    return a+b
print(f(2,3))
```

Functions & Generators

1. Which built-in function is used to get user input in Python?
A. input()■
B. enter()■
C. read()■
D. scan()

2. What will this expression return?
type(3 > 2)
A. int■
B. bool■
C. str■
D. float

3. Which keyword is used to define a block of code in Python?
A. block■
B. begin■
C. define■
D. indentation

8. What does the return statement do?
A. Stops the interpreter■
B. Exits a loop■
C. Sends a value back from a function■
D. Converts data types

9. Which built-in function finds the smallest value?
A. less()■
B. minimum()■
C. small()■
D. min()

16. Which of these creates an anonymous function?
A. define■
B. anon■
C. lambda■
D. func

19. Which Matplotlib function is used to make a bar chart?
A. plt.bar()■
B. plt.plot()■
C. plt.show()■
D. plt.line()

9. What will this print?
def f(x, y=5, *args):
return x + y + sum(args)
print(f(2, 3, 4, 5))
A. 9■
B. 14■
C. 7■
D. 10

14. Which built-in Python function converts a string “123” into integer 123?
A. parse_int()■
B. integer()■
C. int()■
D. to_int()

16. Which of these keywords is used to define a generator function?
A. gen■
B. lambda■
C. yield■
D. generate

8. What does the function return?■
def calc(a, b=2):■
return a * b■
print(calc(3))
A. 3■
B. 5■
C. 6■
D. 9

16. What is the purpose of a lambda function?
A. Create long functions■
B. Create anonymous functions■
C. Replace all functions■
D. Loop through lists

Modules & Libraries

8. Which module contains mathematical functions like sqrt(), sin(), cos()?

a) random

b) statistics

c) math

d) compute

9. What is an object in Python?

a) a blueprint for a class

b) an instance of a class

c) a type of module

d) a dictionary element

10. Which method is automatically called when an object is deleted?

a) remove()

b) destroy()

c) del()

d) exit()

11. What is exception handling used for?

a) speeding up the program

b) handling runtime errors gracefully

c) checking syntax errors

d) managing file permissions

12. What does the filter() function return?

a) list only

b) generator/iterator

c) integer

d) tuple

13. In Python decorators, what is typically passed as an argument?

a) a variable

b) a class

c) a function

d) a module

14. Which command deactivates a virtual environment?

a) deactivate

b) exitenv

c) stopenv

d) close

15. Which NumPy function creates an identity matrix?

a) np.eye()

b) np.ident()

c) np.matrix()

d) np.ones()

16. In Pandas, which method returns the last 5 rows of a DataFrame?

a) df.last()

b) df.tail()

c) df.end()

d) df.bottom()

17. What does the attribute itemsize represent in a NumPy array?

a) number of items

b) size of each element in bytes

c) dimensions

d) memory location

18. Which Matplotlib command adds a label to the x-axis?

a) plt.xlabel()

b) plt.xaxis()

c) plt.labelx()

d) plt.setx()

19. Which Pandas function writes a DataFrame to CSV?

a) df.save_csv()

b) df.write()

c) df.to_csv()

d) df.export_csv()

20. Which Python function returns the list of attributes and methods of an object?

a) dir()

b) list()

c) show()

d) attr()

1. Which Python keyword is used to define a block of code?

a) block

b) begin

c) def

d) indent

2. Which of the following is used to convert a string to an integer?

a) int()

b) str()

c) chr()

d) convert()

3. Which operator is used for exponentiation?

a) ^

b) **

c) %%

d) @@

4. What does the built-in function type() return?

a) size of a variable

b) data type of an object

c) value of a variable

d) memory usage

5. Which method is used to remove an item by value from a list?

a) pop()

b) remove()

c) delete()

d) discard()

6. What will my_dict.values() return?

a) list of keys

b) list of items

c) list-like view of values

d) list of tuples

7. Which of the following modules manages dates and times?

a) calendar

b) datetime

c) timekeeper

d) dates

8. What is the purpose of the super() function?

a) call child class methods

b) access private attributes

c) call parent class methods

d) import modules

9. Which of the following is NOT a type of error in Python?

a) SyntaxError

b) RuntimeError

c) CompileError

d) TypeError

10. What is returned by a function that contains yield?

a) list

b) generator

c) dictionary

d) module

11. Which decorator is used to define a class method?

a) @class

b) @classmethod

c) @classmethod()

d) @methodclass

12. Which command upgrades an installed package using pip?

a) pip repair package

b) pip update package

c) pip upgrade package

d) pip install --upgrade package

13. What does np.linspace(0, 1, 5) generate?

a) integers only

b) logarithmic values

c) equally spaced values

d) random values

14. Which attribute returns the number of elements in a NumPy array?

a) length

b) count

c) size

d) elements

15. In Pandas, what does df.info() display?

a) number of rows only

b) memory usage and column types

c) only numerical statistics

d) missing values only

16. What is the default chart type for plt.plot()?

a) scatter plot

b) bar chart

c) line plot

d) histogram

11. What is the difference between the normal and uniform random functions, and which choice function call
generates the given output?
A. normal generates evenly spaced values, while uniform creates values around a mean;
np.random.uniform(0, 1)
B. normal always produces integers, while uniform always produces floats;
np.random.uniform(5)
C. normal returns only positive values, while uniform returns both positive and negative;
np.random.uniform(-1, 1)
D. normal generates values around a mean with a spread, while uniform generates values in a flat range;
np.random.normal(0, 1)

12. Which code correctly replaces NaN values with the mean or median of the array?
A. arr = arr.fillna(np.mean(arr))
B. arr = np.where(np.isnan(arr)
C. arr = arr.replace(np.nan, np.mean(arr))
D. arr[np.mean] = np.nan

13. Which code correctly removes incomplete records from the dataset?
A. clean = arr[~np.isnan(arr).any(axis=1)]
B. clean = arr.remove(np.nan)
C. clean = arr.dropna()
D. clean = arr[np.nan == False]

14. What is the correct definition of matrix transpose, and which code correctly performs it?
A. A transpose reverses rows only; arr.reverse()
B. A transpose swaps values diagonally; arr.swap()
C. A transpose flips rows and columns; arr.T
D. A transpose rotates the matrix by 90 degrees; np.rot90(arr)

15. Does NumPy only focus on arrays?
A. No, NumPy also includes linear algebra, statistics, random number generation, and broadcasting
B. Yes, NumPy can only store arrays and cannot perform computations
C. Yes, NumPy handles arrays exclusively, and all math must be done manually
D. No, NumPy is mainly used for web development and backend frameworks

16. Which option correctly describes a Pandas Series?
A. 2D labeled table used for grouping data
B. A fixed-type numeric array without labels
C. A 1D labeled array capable of holding any data type

D. A structure that only stores integers efficiently

17. Which option correctly selects rows using labels?
A. df.loc["A":"C"] selects rows from label A to C (inclusive)
B. df.loc[0:2] selects rows by position
C. df.loc() automatically converts strings to indexes\
D. df.loc.label("A") fetches row A

18. Which option correctly creates a basic scatter plot?
A. plt.pointplot(x, y)
B. plt.scatterplot(x=y)
C. plt.plot(x * y)
D. plt.scatter(x, y)

19. Which statement correctly describes subplot creation?
A. Subplots require opening separate figure windows
B. plt.subplots(2, 2) creates a 2×2 grid of plots
C. Subplots cannot share axes between plots
D. Subplots must be drawn before creating a figure

20. Which option correctly plots a column from a DataFrame?
A. df.plotcol("age") automatically creates a histogram
B. plt.bar(df["age"]) plots a bar chart directly
C. plt.plot(df["age"]) creates a line plot of the column
D. df["age"].scatter() produces a scatter plot

1. Why is a virtual environment required when using third-party modules like NumPy and Pandas?
A. It improves Python’s execution speed by running code in isolation
B. It automatically updates all installed packages to their latest versions
C. It prevents dependency conflicts by isolating project package versions
D. It allows Python to access system-level hardware drivers more efficiently

2. Which of the following correctly represents a feature of Python?
A. Statically typed, compiled, low-level
B. Strict typing, manual memory control, hardware-oriented
C. Dynamically typed, interpreted, high-level
D. Fixed-type variables, fast compilation, limited libraries

3. Which of the following correctly represents real-world use cases of Python?
A. BIOS programming, kernel development, device firmware
B. Web development, machine learning, automation
C. Graphics drivers, low-level memory allocation, embedded chip coding
D. Real-time operating system design, hardware interrupt handling, micro-kernel scheduling

10. What is the correct way to import only one function from a module?
A. include function from module■
B. import module -> function■
C. from module import function■
D. load module.function

10. Which of these is NOT a valid method to import a module or its part?
A. import math■
B. from math import sqrt■
C. import math as m■
D. include math

11. What does this NumPy code output?
import numpy as np
a = np.arange(0, 9).reshape(3,3)
print(a[1, :])
A. [0 1 2]■
B. [3 4 5]■
C. [6 7 8]■
D. [1 2 3]

19. What will be printed by this code snippet?
import random
print(random.randint(1, 5))
A. A random float between 1 and 5■
B. A random integer between 1 and 4■
C. A random integer between 1 and 5 inclusive■
D. Always 1

20. Which of the following is correct to create a line plot using Matplotlib (assuming import matplotlib.pyplot as plt)?
A. plt.line([1,2,3], [4,5,6])■
B. plt.plot([1,2,3], [4,5,6])■
C. plt.bar([1,2,3], [4,5,6])■
D. plt.scatter([1,2,3], [4,5,6])

10. What is the correct way to import only the sqrt function from math?
A. import math.sqrt■
B. from math import sqrt■
C. include math.sqrt■
D. using math.sqrt

17. What will be the output?
import numpy as np
arr = np.array([[1, 2], [3, 4]])
print(arr.shape)
A. (1, 4)■
B. (4, 1)■
C. (2, 2)■
D. (2, 4)

File Handling

18. What Pandas function reads CSV files?
A. pd.open_csv()■
B. pd.load_csv()■
C. pd.read_csv()■
D. pd.csv_read()

8. Choose the correct way to open a file for both reading and writing (overwriting) in Python.
A. open("file.txt", "r+")■
B. open("file.txt", "rw")■
C. open("file.txt", "w+")■
D. open("file.txt", "a+")

Python Basics

3. What is pip, and is it installed separately?
A. A Python debugger that must be installed manually
B. Python’s built-in package manager, included automatically with Python 3
C. A virtual environment tool that requires separate installation
D. A dependency scanner downloaded from the Python Package Index

4. Which functions belong to the random module form numpy with their correct usage?
A. random.randint(1, 10) : returns a random integer in range
random.choice(items) : picks a random element
random.random() : returns a float between 0 and 1
B. random.sort(list) : sorts a list randomly
random.pick(3) : picks 3 values at random
random.number() : returns a random number
C. random.range(5, 15) ; generates a random range
random.first(seq): returns the first random index
random.decimal() : returns a decimal number
D. random.select() : selects items based on weight
random.generate() : creates random datasets
random.flip() : flips a boolean randomly

5. Which definition and code correctly represent arithmetic operators?
A. Arithmetic operators only compare values, e.g., ==, >=, <=
B. Arithmetic operators update variables in place, e.g., +=, -=, *=
C. Arithmetic operators perform mathematical calculations, e.g., a + b, a - b, a * b, a / b, a // b, a % b, a
** b
D. Arithmetic operators are used for type conversions, e.g., int(a), float(a)

6. Which of the following is the correct example of dynamic typing in Python?
A. int x = 5
B. var x: int = 5
C. x = int(5)
D. x = 10; x = "hello"

7. Which is the correct built-in function along with its description?
A. open() : used to access a file, but only for reading directory names
B. sum() : adds values in an iterable, but only if they are all strings
C. len() : returns the number of elements in a sequence
D. map() : applies a function to items, but returns only the first modified value

8. Which functions belong to the random module with their correct usage?
A. random.range() “ generates a range of random numbers for list sorting

B. random.pick() : selects multiple items but only works on numeric arrays
C. random.float() : returns a decimal value but always between 10 and 20
D. random.randint() : generates a random integer;

9. What change should be made to the code to intentionally create an infinite loop?
i = 0
while i < 5:
print(i)
i += 1
A. Replace i += 1 with i = i + 2 so the loop runs faster before stopping
B. Change the condition to i <= 5 so it loops one extra time
C. Remove or disable the update (i += 1) so the condition never becomes False
D. Add a break statement so the loop continues without stopping

10. What are lambdas and generators in Python?
A. Lambdas are built-in classes, and generators are database connectors
B. Lambdas are loops that run once, and generators are files that auto-save output
C. Lambdas are small anonymous functions, and generators produce values lazily using yield
D. Lambdas are decorators, and generators permanently store all values in memory

11. For the given situation, which OOP approach should be used?
You are developing a student login feature where each student must have attributes like username, password,
and login attempts.
A. Use procedural functions so that all user data can be stored in global variables
B. Use a single dictionary for all users, since it automatically enforces security
C. Use inheritance so that each user automatically becomes a subclass of Python’s base types
D. Use classes and objects to model each user with its own attributes and behavior

12. For the given code, which change correctly implements polymorphism?
class Shape:
def area(self):
return 0
class Circle(Shape):

def area(self):
return "Area of Circle"
class Square(Shape):
def area(self):
return "Area of Square"
A. Remove the area() method from all child classes so only the parent version is used

B. Convert area() into a static method so it doesn’t depend on object behavior
C. Allow each subclass to provide its own implementation of area()
D. Add random print statements inside area() so each class “looks different”

4. The given code converting a list to integers is an example of which concept?
A. Memory allocation
B. Static typing
C. Loop unrolling
D. Type conversion

5. For the given situation, which loop type is the best fit . You want to display the names of all students in a
class list one by one. The total number of names is fixed and known.
A. while loop
B. do-while loop
C. for loop
D. recursive function loop

6. Which code correctly checks for a palindrome with the correct definition?
A. palindrome is a word with repeating characters; check using:
s == sorted(s)
B. palindrome is a string that only contains alphabetic characters; check using:
s.isalpha()
C. palindrome is a string that reads the same forward and backward; check using:
s == s[::-1]
D. palindrome is a string where characters appear in decreasing order; check using:
s == s.reverse()

7. Which functions belong to the math module with their correct usage?
A. math.sqrt() : returns the square root, but only for integer values
B. math.floor() : rounds a number up to the nearest whole number
C. math.pi : provides the constant value of π
D. math.pow() : raises to a power, but always returns an integer

8. What change should be made to the code to stop an infinite loop?
i = 0
while i < 5:
print(i)
A. Add i += 1 inside the loop so the condition eventually becomes False
B. Add more print() statements so the loop slows down and exits naturally
C. Remove i completely so Python resets the loop counter automatically
D. Use continue inside the loop so it breaks on the next iteration

9. Which functions belong to the str module with their correct usage?
A. upper() : converts to uppercase, but only for the first character
B. split() : breaks a string into a list based on a separator

C. replace() : swaps characters, but only if the string length is even
D. startswith() : checks prefixes, but returns the index instead of a boolean

4. What will be printed?
x = "Hello"■
print(x * 2)
A. Error■
B. Hello■
C. HelloHello■
D. Hello*2

5. Which operator has the highest precedence?
A. +■
B. ==■
C. not■
D. **

6. How many times will this loop run?
for i in range(1, 6):■
pass
A. 4■
B. 5■
C. 6■
D. Infinite

7. What is the output?
i = 5■
while i > 5:■
print(i)■
i -= 1
A. 5 4 3 2 1■
B. 5■
C. No output■
D. Error

11. What is the output of this try-except block?
try:■
print(10 / 5)■
except:■
print("Error")
A. Error■
B. 2.0■
C. 0■
D. None

2. What will be printed by this code?
s = "Python"
print(s[1:4])
A. Pyt■
B. yth■
C. ytho■
D. yth

3. What is the output type of 3.14 + 2 in Python?
A. int■
B. float■
C. str■
D. bool

4. What operator is used for exponentiation in Python?
A. ^■
B. **■
C. %■
D. //

7. What will be the output of this code snippet?
a = [1, 2, 3]
b = a
b.append(4)
print(a)
A. [1, 2, 3]■
B. [1, 2, 3, 4]■
C. [4]■
D. Error

13. What kind of plot is typically used to show the distribution of a single variable?
A. Scatter plot■
B. Line plot■
C. Histogram■
D. Bar chart

15. What is printed by this code?
x = None
if x:
print("Yes")
else:
print("No")
A. Yes■
B. No■
C. None■
D. Error

2. What will be the output of the following code?
x = 10
y = 3
print(x // y)
A. 3.33■
B. 3■
C. 4■
D. 0

3. Which of the following is a valid variable name in Python?
A. 1value■
B. value_1■
C. value-1■
D. value 1

4. What is the data type of the value returned by input()?
A. int■
B. float■
C. str■
D. bool

5. What will this code print?
a = True
b = False
print(a and not b)
A. False■
B. True■
C. Error■
D. None

6. Which loop is best suited when the number of iterations is known?
A. while loop■
B. for loop■
C. do-while loop■
D. switch loop

7. What is the output of this code?
for i in range(2, 10, 3):
print(i, end=" ")
A. 2 3 4■
B. 2 5 8■
C. 3 6 9■
D. 2 4 6

11. What is the output of this code?
try:
x = 10 / 0
except ZeroDivisionError:
print("Error")
A. 0■
B. Zero■
C. Error■
D. No output

Miscellaneous

5. What is the result of this logical expression?
not (False or True) and True
A. True■
B. False■
C. Error■
D. None

19. What does the following Matplotlib code do?
plt.plot([1, 2, 3], [4, 5, 6])
A. Draws a bar graph■
B. Draws a line graph■
C. Draws a scatter plot■
D. Draws a pie chart