Python Skills

1. Which built-in function is used to convert user input, which is always received as a string, into an integer?

   A. str()

   B. input()

   C. int()

   D. type()

   Answer: C

2. What is the result of the Python expression 15 % 4 (the modulo operator)?

   A. 3

   B. 4

   C. 3.75

   D. 11

   Answer: A

3. Which data structure is ordered, changeable (mutable), and created using square brackets []?

   A. Tuple

   B. Dictionary

   C. List

   D. Set

   Answer: C

4. In a for loop, what sequence of numbers is generated by range(2, 6)?

A. 2, 3, 4, 5, 6

B. 3, 4, 5, 6

C. 2, 3, 4, 5

D. 2, 3, 4

Answer: C

5. What value must the condition in a while loop evaluate to for the loop to continue executing?

A. 0

B. False

C. None

D. True

Answer: D

6. Which keyword is used to skip the rest of the current loop iteration and move directly to the next iteration?

A. break

B. continue

C. pass

D. exit

Answer: B

7. Which logical operator requires both conditions to be true to return True?

A. or

B. not

C. and

D. equal

Answer: C

8. What is the correct syntax for checking if a variable x is greater than or equal to 5?

   A. x =< 5

   B. x => 5

   C. x >= 5

   D. x > 5 or x == 5

   Answer: C

9. Which data structure is unordered, does not allow duplicates, and is typically defined using curly braces {} without key:value pairs?

   A. List

   B. Set

   C. Tuple

   D. Dictionary

   Answer: B

10. What is the fundamental difference between a List and a Tuple?

    A. Lists are faster than Tuples.

    B. Tuples are mutable, and Lists are immutable.

    C. Lists are mutable, and Tuples are immutable.

    D. Lists can only store numbers.

    Answer: C

11. What is the output of print("Python"[1])?

    A. P

    B. y

    C. o

    D. n

    Answer: B

12. To execute code when the main if condition is false, but before running the final else block, you would use which keyword?

A. continue

B. elif

C. try

D. pass

Answer: B

13. What is the purpose of the colon (:) at the end of a statement like if condition: or for item in list:?

A. To end the line of code.

B. To indicate the start of the next indented code block.

C. To denote a variable assignment.

D. To define a string literal.

Answer: B

14. How do you access the value associated with the key "model" in the dictionary car = {"brand": "Ford", "model": "Mustang"}?

A. car.model

B. car["model"]

C. car("model")

D. car[1]

Answer: B

15. Which operator checks for equality between two values?

A. =

B. !=

C. ==

D. is

Answer: C

16. Which keyword is used to define a function that will return a value back to the caller?

    A. def

    B. print

    C. return

    D. yield

    Answer: C

17. What is the term for a variable defined inside a function that can only be accessed within that function?

    A. Global Variable

    B. Class Variable

    C. Local Variable

    D. Module Variable

    Answer: C

18. What keyword is used to bring an external file of Python code (a module) into your current script?

    A. from

    B. import

    C. load

    D. require

    Answer: B

19. In OOP, what is the term for the process of combining data (attributes) and the functions (methods) that operate on that data into a single unit?

    A. Polymorphism

    B. Inheritance

    C. Encapsulation

    D. Abstraction

    Answer: C

20. Which special method is automatically executed when a new object (instance) of a class is created?

    A. __str__

    B. __new__

    C. __init__

    D. __start__

    Answer: C

21. What is the conventional name for the first parameter of an instance method in a Python class?

    A. this

    B. instance

    C. caller

    D. self

    Answer: D

22. In OOP, when a Child class redefines a method already defined in its Parent class, what is this called?

    A. Method Overloading

    B. Method Hiding

    C. Method Overriding

    D. Polymorphism

    Answer: C

23. What keyword is used to define the code block where an error is expected to occur in exception handling?

    A. try

    B. except

    C. raise

    D. finally

    Answer: A

24. Which built-in exception occurs when trying to access a dictionary key that does not exist?

    A. IndexError

    B. NameError

    C. KeyError

    D. TypeError

    Answer: C

25. The code within the finally block of an exception handler is guaranteed to execute:

A. Only if the try block succeeds.

B. Only if an exception occurs.

C. Regardless of whether an exception occurred or not.

D. Only if the except block catches the error.

Answer: C

26. Which file mode is used to open a file for adding new content to the end of the existing file?

A. 'r'

B. 'w'

C. 'a'

D. 'x'

Answer: C

27. What is the best way to ensure a file is automatically closed, even if the program encounters an error while working with it?

A. Using the f.close() method.

B. Using the with open(...) as f: statement.

C. Relying on Python's garbage collector.

D. Using only the 'r' mode.

Answer: B

28. In the try...except structure, what statement allows you to forcefully stop the program and signal an error?

A. print()

B. raise

C. break

D. pass

Answer: B

29. What is the primary purpose of the super() function in a child class?

A. To destroy the object.

B. To rename the parent class.

C. To call a method (often __init__) from the parent class.

D. To make the child class private.

Answer: C

30. A function or method that does not rely on the specific instance or class data to perform its task is typically defined as a:

A. Global Method

B. Instance Method

C. Constructor

D. Static Method

Answer: D

31. In Python, what is the core OOP concept that the expression isinstance(obj, ClassName) is used to check?

A. Encapsulation

B. Polymorphism (specifically type checking)

C. Abstraction

D. Method Overloading

Answer: B

32. What is the name of a variable that is shared by all instances (objects) of a specific class?

   A. Instance Attribute

   B. Local Attribute

   C. Class Attribute

   D. Global Attribute

   Answer: C

33. Which built-in library is most commonly used in Python to make HTTP requests and retrieve the raw HTML content from a website?

   A. BeautifulSoup

   B. Selenium

   C. Requests

   D. Pandas

   Answer: C

34. After retrieving the HTML content, which library is specifically used to parse the HTML structure and navigate the Document Object Model (DOM)?

   A. Requests

   B. BeautifulSoup

   C. NumPy

   D. Time

   Answer: B

35. What is the primary function of the website file named robots.txt?

   A. To provide the latest data to scrapers.

   B. To specify which parts of the site crawlers/scrapers are allowed or forbidden to access.

   C. To manage user logins.

   D. To define the website's color scheme.

Answer: B

36. In BeautifulSoup, which method is used to find all matching HTML tags and returns the result as an iterable list?

A. find()

B. get()

C. select_one()

D. find_all()

Answer: D

37. What is the difference between Web Scraping and Web Crawling?

A. Crawling extracts data; Scraping discovers URLs.

B. Scraping extracts data; Crawling follows links to discover new URLs.

C. Scraping is for static content; Crawling is for dynamic content.

D. Crawling uses Python; Scraping uses JavaScript.

Answer: B

38. Which attribute must be accessed on an anchor tag object (e.g., <a>) in BeautifulSoup to extract the URL link itself?

A. .text

B. ['href']

C. ['url']

D. .string

Answer: B

39. What is the purpose of using the .strip() string method on scraped data?

A. To convert the text into a number.

B. To delete the first and last characters.

C. To remove leading and trailing whitespace and newline characters.

D. To check if the text contains a specific word.

Answer: C

40. If a web scraper encounters an HTTP status code of 403, what is the most likely reason?

A. The page was successfully found.

B. The request was forbidden (permission denied).

C. The server is redirecting the request.

D. The user agent is missing.

Answer: B