▸ Easy Level (10 Questions)

Q1. Which Python function is used to open a file?
A. `file()`
B. `open()`
C. `read()`
D. `load()`

Q2. Which mode opens a file for **writing** and overwrites existing content?
A. `r`
B. `a`
C. `w`
D. `rw`

Q3. Which method reads the **entire file content** at once?
A. `readline()`
B. `read()`
C. `readlines()`
D. `scan()`

Q4. Which method reads a file **line by line** and returns a list?
A. `read()`
B. `readline()`
C. `readlines()`
D. `lines()`

Q5. Which library is used to work with dates and time in Python?
A. `hashlib`
B. `timeit`
C. `datetime`
D. `calendar`

Q6. Which entity requests services in client–server architecture?
A. Server
B. Client
C. Proxy
D. Router

Q7. Which protocol is commonly used to fetch web page content?
A. FTP
B. SMTP
C. HTTP
D. SSH

Q8. Which library is used to generate cryptographic hashes?
A. `hashlib`
B. `secrets`
C. `random`
D. `uuid`

Q9. Which statement correctly prints file contents?
A. `print(file.read())`
B. `print(open.read())`
C. `print(read.file())`
D. `print(file.open())`

Q10. Which component executes scripts on the **client side**?
A. Database
B. Web server
C. Browser
D. API

⬛ Medium Level (15 Questions)

Q11. Which file mode allows **reading and writing without truncation**?
A. `r`
B. `w+`

C. `r+`
D. `a`

Q12. How can you count the number of **lines** in a file efficiently?
A. `len(file.read())`
B. `len(file.readlines())`
C. `file.count()`
D. `sum(file)`

Q13. Which approach correctly counts **words** in a file?
A. `len(file.read())`
B. `len(file.split())`
C. `len(file.read().split())`
D. `file.words()`

Q14. Which Python module can fetch a webpage without external libraries?
A. `requests`
B. `urllib.request`
C. `socket`
D. `http.server`

Q15. What does `hashlib.sha256()` return?
A. Plain text
B. Encrypted password
C. Hash object
D. Binary file

Q16. Which method converts a hash object into a readable string?
A. `encode()`
B. `decode()`
C. `hexdigest()`
D. `digeststr()`

Q17. Which library is commonly used for internet-wide scanning and reconnaissance?
A. `nmap`
B. `hashlib`
C. `shodan`
D. `socket`

Q18. Which operation ensures a file is closed automatically?
A. `file.close()`
B. `try-except`
C. `with` statement
D. `finally`

Q19. Which server-side scripting language can process form data?
A. HTML
B. CSS
C. JavaScript
D. Python

Q20. Which HTTP method is used to **retrieve** web page content?
A. POST
B. PUT
C. GET
D. DELETE

Q21. What does a web server primarily do?
A. Execute client scripts
B. Store passwords
C. Handle HTTP requests
D. Compile programs

Q22. Which function returns the current date and time?
A. `datetime.today()`
B. `datetime.now()`
C. `time.current()`
D. `date.now()`

Q23. Which statement correctly opens a file for appending?

A. `open("f.txt","w")`

B. `open("f.txt","a")`

C. `open("f.txt","r+")`

D. `open("f.txt","rw")`

Q24. Which architecture separates presentation, logic, and data?

A. Peer-to-peer

B. Monolithic

C. Client–Server

D. Layered (Three-tier)

Q25. Which library is best for handling timestamps and time zones?

A. `time`

B. `calendar`

C. `datetime`

D. `os`

🌀 Hard Level (15 Questions)

Q26. Which approach is memory-efficient for counting lines in a large file?

A. `len(file.readlines())`

B. `sum(1 for line in file)`

C. `file.read().count('\n')`

D. `file.read()`

Q27. Which encoding issue can occur when reading web content?

A. Indentation error

B. UnicodeDecodeError

C. KeyError

D. TypeError

Q28. Which method fetches raw web page bytes?
A. `response.text`
B. `response.html`
C. `response.content`
D. `response.string`

Q29. Which hashing property ensures small input change alters entire hash?
A. Determinism
B. Collision resistance
C. Avalanche effect
D. Preimage resistance

Q30. Which file handling bug occurs if files are not closed properly?
A. Syntax error
B. Memory leak
C. Buffer overflow
D. Deadlock

Q31. Which Python object represents an open file?
A. String
B. Descriptor
C. File object
D. Path object

Q32. Which component handles business logic in web architecture?
A. Client browser
B. Web server
C. Application server
D. Database server

Q33. Which Shodan query returns devices with open HTTP ports?
A. `http:true`
B. `port:80`

C. `service:web`
D. `http:open`

Q34. Which method ensures thread-safe file writing?
A. Buffered writing
B. Atomic write
C. Sequential write
D. Append write

Q35. Which technique prevents plaintext password storage?
A. Encryption
B. Compression
C. Hashing
D. Encoding

Q36. Which HTTP status code indicates a successful request?
A. 301
B. 403
C. 404
D. 200

Q37. Which Python construct is best for streaming large web responses?
A. `read()`
B. `readlines()`
C. Iterators
D. Lists

Q38. Which web scripting runs entirely on the server?
A. JavaScript
B. HTML
C. Python
D. CSS

Q39. Which attack exploits poorly handled file input?
A. SQL Injection
B. Cross-Site Scripting
C. File Inclusion
D. Man-in-the-middle

Q40. Which design principle improves scalability in client–server systems?
A. Tight coupling
B. Statelessness
C. Hard coding
D. Single-tier design