⬜ Easy Level (10 Questions)

Q1. Which Python module is commonly used for file and directory operations?
A. `sys`
B. `math`
C. `os`
D. `socket`

Q2. Which function returns the **current working directory** in Python?
A. `os.getcwd()`
B. `os.curdir()`
C. `os.pwd()`
D. `sys.getcwd()`

Q3. Which function checks whether a file or directory exists?
A. `os.check()`
B. `os.exists()`
C. `os.path.exists()`
D. `os.isfile()`

Q4. Which mode opens a file for **reading only**?
A. `w`
B. `a`
C. `r`
D. `rw`

Q5. Which command creates a directory in Python?
A. `os.makedir()`
B. `mkdir()`
C. `os.mkdir()`
D. `dir.create()`

Q6. Which permission allows **reading a file** in Linux?
A. `x`
B. `w`

C. `r`
D. `rw`

Q7. Which function lists all files and folders in a directory?
A. `os.list()`
B. `os.ls()`
C. `os.listdir()`
D. `dirlist()`

Q8. Which path starts from the root directory?
A. Relative path
B. Logical path
C. Virtual path
D. Absolute path

Q9. Which module supports socket programming in Python?
A. `os`
B. `socket`
C. `net`
D. `thread`

Q10. Which permission allows execution of a directory?
A. Read
B. Write
C. Execute
D. Delete

⬛ Medium Level (15 Questions)

Q11. Which function removes an **empty directory**?
A. `os.remove()`
B. `os.unlink()`
C. `os.rmdir()`
D. `os.delete()`

Q12. Which function returns the **absolute path** of a file?
A. `os.abspath()`
B. `os.path.abspath()`
C. `os.realpath()`
D. `sys.abspath()`

Q13. Which memory area stores local variables of a function?
A. Heap
B. Stack
C. Cache
D. Register

Q14. Which file mode allows **reading and writing**?
A. `r`
B. `w`
C. `a`
D. `r+`

Q15. Which permission is required to **delete a file** from a directory in Linux?
A. Read permission on file
B. Write permission on file
C. Execute permission on file
D. Write permission on directory

Q16. Which function checks if a path is a **directory**?
A. `os.path.isfile()`
B. `os.path.isdir()`
C. `os.isdir()`
D. `os.path.checkdir()`

Q17. Which memory management technique automatically frees unused memory in Python?
A. Manual deletion
B. Paging
C. Garbage collection
D. Segmentation

Q18. Which function returns both files and directories recursively?
A. `os.listdir()`
B. `os.walk()`
C. `os.scan()`
D. `os.find()`

Q19. What does relative path depend on?
A. Root directory
B. File system
C. Current working directory
D. File permissions

Q20. Which socket type provides reliable communication?
A. UDP
B. RAW
C. TCP
D. ICMP

Q21. Which function checks read/write/execute permissions?
A. `os.perm()`
B. `os.access()`
C. `os.checkperm()`
D. `os.permission()`

Q22. Which file handling operation flushes data to disk?
A. `close()`
B. `flush()`
C. `sync()`
D. `write()`

Q23. Which permission set allows full access to owner only?
A. `777`
B. `755`
C. `700`
D. `644`

Q24. Which memory area is shared among objects in Python?
A. Stack
B. Cache
C. Heap
D. Register

Q25. Which socket function binds a socket to an address?
A. `connect()`
B. `listen()`
C. `bind()`
D. `accept()`

🌀 Hard Level (15 Questions)

Q26. Which Linux permission is required to access files inside a directory?
A. Read
B. Write
C. Execute
D. Read + Write

Q27. Which Python function deletes a file permanently?
A. `os.erase()`
B. `os.unlink()`
C. `os.remove()`
D. Both B and C

Q28. What happens if a directory lacks execute permission?
A. Files cannot be read
B. Files cannot be modified

C. Directory cannot be accessed
D. Directory cannot be created

Q29. Which memory issue occurs when allocated memory is not released?
A. Fragmentation
B. Thrashing
C. Memory leak
D. Paging fault

Q30. Which function resolves symbolic links to absolute paths?
A. `os.path.abspath()`
B. `os.realpath()`
C. `os.normpath()`
D. `os.getcwd()`

Q31. Which socket method waits for incoming connections?
A. `connect()`
B. `accept()`
C. `bind()`
D. `recv()`

Q32. Which memory management technique divides memory into fixed-size blocks?
A. Segmentation
B. Paging
C. Swapping
D. Caching

Q33. Which file access mode appends data without overwriting?
A. `r`
B. `w`
C. `a`
D. `r+`

Q34. Which directory permission allows listing file names?
A. Execute
B. Write
C. Read
D. Delete

Q35. Which socket call starts listening mode?
A. `listen()`
B. `bind()`
C. `connect()`
D. `accept()`

Q36. Which memory region stores dynamically allocated objects?
A. Stack
B. Heap
C. Cache
D. CPU registers

Q37. Which function joins directory and file names safely across OSes?
A. `os.join()`
B. `path.join()`
C. `os.path.join()`
D. `sys.join()`

Q38. Which permission combination allows read-only access to all users?
A. `444`
B. `400`
C. `644`
D. `600`

Q39. Which socket type is connectionless?
A. TCP
B. UDP
C. SCTP
D. SSL

Q40. Which memory optimization technique avoids duplicate object creation in Python?
A. Paging
B. Caching
C. Interning
D. Swapping