

Land Land

قائمة الاسئلة

نظم تشغيل - المستوى الثاتي -قسم علوم حاسوب - ب كلية الحاسوب وتكنولوجيا المعلومات - الفترة ب درجة الامتحان (180)

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- 1) What is operating system
 - 1) collection of programs that manages hardware resources<
 - 2) system service provider to the application programs
 - 3) link to interface the hardware and application programs
 - 4) + all of the mentioned
- 2) Why is CPU scheduling done?
 - 1) Decrease CPU Utilization
 - 2) Decrease Cost
 - 3) + Increase CPU Utilization
 - 4) None of the mentioned
- 3) What is the ready state of a process?
 - 1) + when process is scheduled to runin the CPU
 - 2) when process is wating in the Job Queue
 - 3) when process is using the CPU
 - 4) none of the mentioned
- 4) A set of processes is deadlock if
 - 1) each process is terminated
 - 2) all processes are trying to kill each other
 - 3) + each process is blocked and will remain so forever
 - 4) none of the mentioned
- 5) ? What is a long-term scheduler
 - 1) + It selects which process has to be brought into the ready queue
 - 2) It selects which process has to be executed next and allocates CPU
 - 3) It selects which process to remove from memory by swapping
 - 4) None of these
- 6) The primary purpose of a directory structure is to:
 - 1) a) Store metadata about files
 - 2) b) Allocate disk space efficiently
 - 3) + c) Organize files in a structured manner
 - 4) d) Control process execution
- 7) Which of the following file allocation methods suffers from external fragmentation
 - 1) + a) Contiguous Allocation
 - 2) b) Linked Allocation
 - 3) c) Indexed Allocation
 - 4) d) None of the above
- 8) The inode in a UNIX file system
 - 1) + a) Stores metadata about a file
 - 2) b) Allocates CPU resources
 - 3) c) Schedules processes
 - 4) d) Handles file encryption
- 9) The FAT (File Allocation Table) file system is mainly used in
 - 1) + a) Windows OS
 - 2) b) Linux OS
 - 3) c) macOS
 - 4) d) UNIX-based systems







- Which file system is used in Linux by default 10)
 - a) NTFS 1)
 - b) FAT32 2)
 - 3) +c) ext4
 - d) HFS+ 4)
- 11) A program in execution is called?
 - 1) A Paging
 - 2) A Process +
 - 3) A virtual memory
 - A Demand Page 4)
- What is contained in the page table? 12)
 - + Base address of each frame and corresponding page number 1)
 - Memory address and corresponding page number 2)
 - File name and corresponding page number 3) -
 - None of Above 4)

Which of the following is NOT a memory allocation technique? 13)

- a) Paging 1) _
- b) Segmentation 2) _
- c) Swapping 3)
- d) Multiprogramming 4) +
- What is internal fragmentation? 14)
 - + a) Unused memory within allocated space 1)
 - b) Unused memory between allocated blocks 2) -
 - c) Memory wasted due to page swapping 3)
 - d) Memory lost due to deadlocks 4)

Which of the following algorithms is used to place processes in memory blocks? 15)

- a) First Fit 1)
- b) Best Fit 2)
- c) Worst Fit 3)
- d) All of the above 4) +
- What is the primary advantage of journaling file systems? 16)
 - a) Prevents file corruption by recording changes before applying them + 1) 2)
 - b) Increases file transfer speed
 - 3) c) Reduces file size
 - d) Enhances disk defragmentation 4)
- Which of the following file systems supports file encryption natively? 17)
 - a) FAT32 1) _
 - b) NTFS 2) +
 - 3) c) ext2
 - d) None of the above 4)
- Components of Threads 18)
 - Program counter 1)
 - 2) Register _
 - Stack 3) _
 - all of the mentioned 4) +
- 19) Which of the following are two types of atomic operations performed by semaphores?
 - + Wait and signal 1)
 - Wait and Stop 2)
 - 3) Signal and Stop _



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- Release and Wait 4) 20)
 - Convoy effect in FCFS happens if
 - + The burst time of the first job is the highest among all 1)
 - The burst time of the first job is the smallest among all 2)
 - The burst time of all processe is the same _
 - none of the mentioned 4)
- Which type of process spend more time doing computations 21)
 - I/O bound process. 1) _
 - Cpu bound process. 2) +
 - Both I/O and CPU bounded processes 3)
 - None of the above. 4)
- Waiting time is amount of time to execute particular process 22)
 - 1) TRUE.
 - +FALSE. 2)
- Process control block (PCB) is information Associated with each process. 23)
 - 1) + TRUE.
 - 2) FALSE.
- Which function in POSIX threads (Pthreads) creates a new thread? 24)
 - a) pthread create() 1) +
 - b) thread start() 2)
 - c) create thread() 3)
 - 4) d) init thread()
- 25) The main purpose of memory management is to:
 - a) Control process execution 1)
 - 2) b) Optimize disk access
 - c) Allocate and deallocate memory efficiently 3) +
 - d) Improve CPU scheduling 4) -
- 26) Which one of the following is OS services:
 - user interface 1)
 - program execution 2)
 - I/O operations 3) -
 - All of the above 4) +
- Which type of multithreading allows multiple threads to run on multiple processors? 27)
 - a) Single-threaded processing 1) _
 - b) Multicore processing 2) +
 - c) Multilevel queue processing 3)
 - d) FIFO scheduling 4)
 - The main advantage of multithreading is:
 - a) Improved CPU utilization 1) +
 - b) Increased memory requirements 2)
 - c) Reduced disk access time 3) _
 - 4) d) Preventing deadlocks
- We want to keep the CPU as busy as possible, this criteria refers to as 29)
 - Throughput 1)
 - CPU utilization 2) +
 - 3) Response time
 - 4) waiting time
- The part of the program, in which race condition can occur, is called 30)
 - Exit section. 1)







- 2) + Critical section.
- 3) Remainder section.
- 4) Entry section.
- 31) Which of the following are functions of an Operating System
 - 1) a) Process Management
 - 2) b) Memory Management
 - 3) _____ c) Compiler Execution
 - 4) + d) All above
- 32) Which of the following is the core part of an Operating System?
 - 1) a) Shell
 - 2) + b) Kernel
 - 3) c) Command Line Interface
 - 4) d) Device Driver
- 33) Which of the following is an example of a real-time operating system?
 - 1) a) Windows 10
 - 2) b) Linux Ubuntu
 - 3) + c) RTOS (Real-Time Operating System)
 - 4) d) macOS
- 34) What is the main function of an Operating System?
 - 1) a) Compiling code
 - 2) + b) Managing hardware and software resources
 - 3) c) Editing documents
 - 4) d) Running antivirus programs
- 35) Which scheduling algorithm executes the process that arrives first
 - 1) a) Round Robin
 - 2) ____ b) Shortest Job Next
 - 3) + c) First Come First Serve
 - 4) d) Priority Scheduling

36) Which memory management technique divides memory into fixed-sized blocks

- 1) + a) Paging
- 2) b) Segmentation
- 3) c) Contiguous Allocation
- 4) d) Swapping
- 37) What does a process control block (PCB) contain?
 - 1) + a) Process ID, Program Counter, Process State
 - 2) b) Only the process ID
 - 3) c) Only the memory allocation details
 - 4) d) List of all system processes
- 38) Which of the following is NOT a type of system call?
 - 1) a) Process Control
 - 2) b) Memory Management
 - 3) ____ c) File Manipulation
 - 4) + d) Web Browsing
- 39) Which of the following causes thrashing in a system?
 - 1) _____ a) Low CPU utilization
 - 2) + b) Excessive paging
 - 3) c) Low priority scheduling
 - 4) d) Large time quantum
- 40) What is the purpose of the fork() system call in UNIX?







- 1) + a) To create a new process
- 2) b) To terminate a process
- 3) c) To allocate memory
- 4) d) To switch between processes
- 41) What is an Operating System?
 - 1) + a) A collection of software that manages hardware resources
 - 2) b) A hardware component of a computer
 - 3) c) A type of programming language
 - 4) d) A database management system
- 42) Which of the following is an example of an Operating System?
 - 1) ____a) Microsoft Word
 - 2) + b) Windows 10
 - 3) c) Google Chrome
 - 4) d) Python
 - Which component of an OS directly interacts with hardware?
 - 1) a) Shell
 - 2) b) Application Software
 - 3) + c) Kernel
 - 4) d) File System
 - Which of the following is NOT a function of an Operating System?
 - 1) a) Memory Management
 - 2) ____b) Process Management
 - 3) + c) Compiling Programs
 - 4) d) File System Management
- 45) Which type of Operating System is designed for real-time applications?
 - 1) a) Time-Sharing OS
 - 2) b) Distributed OS
 - 3) + c) Real-Time OS
 - 4) d) Batch OS
- 46) Which of the following is an advantage of multiprogramming?
 - 1) + a) Increases CPU utilization
 - 2) b) Reduces the number of processes in memory
 - 3) c) Requires less memory
 - 4) d) Improves single-process execution time
- 47) What is the primary goal of a time-sharing operating system?
 - 1) + a) Minimize response time
 - 2) b) Maximize CPU utilization
 - 3) c) Increase process priority
 - 4) d) Prevent memory fragmentation
- 48) Which type of OS allows multiple users to work on a system simultaneously?
 - 1) a) Single-User OS
 - 2) + b) Multi-User OS
 - 3) c) Real-Time OS
 - 4) d) Embedded OS
- 49) What is the function of a device driver?
 - 1) a) Manages CPU scheduling
 - 2) + b) Controls hardware devices
 - 3) c) Organizes files and directories
 - 4) d) Allocates memory to processes







- 50) Which of the following OS is open-source?
 - 1) a) Windows 11
 - 2) b) macOS
 - 3) + c) Linux
 - d) iOS
- 51) Which of the following is NOT a type of Operating System?
 - 1) a) Batch OS
 - 2) b) Real-Time OS
 - 3) c) Network OS
 - 4) + d) Compiler OS
- 52) Which part of the OS is responsible for process scheduling?
 - 1) a) File System
 - 2) b) Memory Manager
 - 3) + c) Process Scheduler
 - 4) d) Device Driver
- 53) In a time-sharing system, CPU scheduling is performed to provide
 - 1) ____a) Large memory space
 - 2) + b) Quick response time
 - 3) c) High throughput
 - 4) d) Low power consumption
- 54) Which of the following Operating Systems is NOT based on UNIX?
 - 1) a) Linux
 - 2) + b) Windows
 - 3) c) macOS
 - 4) d) Android
- 55) The OS component that manages processes is called:
 - 1) + a) Process Scheduler
 - 2) b) Command Line Interface
 - 3) c) Assembler
 - 4) d) Linker
- 56) Which of the following is a multi-user operating system?
 - 1) a) MS-DOS
 - 2) b) Windows XP
 - (3) + c) UNIX
 - 4) d) Android
- 57) What is the purpose of an Interrupt in an OS?
 - 1) a) To increase CPU speed
 - 2) + b) To handle events like I/O completion
 - 3) c) To improve disk access time
 - 4) d) To allocate memory dynamically
- 58) Which OS feature allows multiple programs to run at the same time?
 - 1) a) Virtualization
 - 2) + b) Multiprogramming
 - 3) c) Debugging
 - 4) d) Encryption
- 59) The part of the OS that interacts with the user is called:
 - 1) a) Kernel
 - 2) + b) Shell
 - 3) c) Memory Manager



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- 4) d) Process Table 60)
 - The purpose of the bootloader is to:
 - 1) a) Load the operating system into memory
 - b) Manage processes in the system 2)
 - c) Handle user input commands 3) _
 - d) Control file system access 4)
- What is a process in an operating system? 61)
 - a) A program in execution + 1)
 - b) A single instruction in a program 2)
 - c) A system call request 3)
 - d) A type of memory management technique 4)
- Which of the following is NOT a process state? 62)
 - 1) a) Ready
 - b) Running 2) _
 - c) Terminated 3)
 - 4) + d) Queued
- Which scheduling algorithm selects the process with the shortest execution time? 63)
 - a) First Come First Serve (FCFS) 1)
 - b) Shortest Job Next (SJN) 2) +
 - c) Round Robin (RR) 3)
 - d) Priority Scheduling 4)
- Which of the following scheduling algorithms prevents starvation? 64)
 - a) Priority Scheduling 1)
 - b) Shortest Job Next (SJN) 2)
 - c) Round Robin (RR) 3)
 - d) First Come First Serve (FCFS) 4)
- The fork() system call in UNIX is used to 65)
 - 1) a) Terminate a process _
 - b) Create a new process 2)
 - c) Allocate memory to a process 3)
 - d) Execute a new command 4)
- Which memory management technique allows processes to be allocated non-contiguous memory? 66)
 - a) Paging + 1)
 - b) Contiguous Memory Allocation 2)
 - c) Swapping 3)
 - d) Fragmentation 4)
- 67) What is the main problem caused by contiguous memory allocation?
 - a) External Fragmentation + 1)
 - b) Process starvation 2)
 - 3) c) Deadlock
 - d) Page faults 4)
- Which of the following is NOT a memory management technique? 68)
 - a) Paging 1)
 - b) Segmentation 2) _
 - c) CPU Scheduling 3) +
 - 4) d) Swapping
- What is the purpose of virtual memory? 69)
 - a) Increases RAM size 1)
 - b) Allows execution of programs larger than physical memory + 2)







- 3) c) Reduces CPU load
- 4) d) Decreases disk usage
- 70) Thrashing occurs when:-
 - 1) a) CPU is underutilized
 - 2) + b) Page faults occur frequently
 - 3) c) Processes execute without waiting
 - 4) d) RAM size is increased
- 71) Which of the following is a file system used in Windows?
 - 1) _ _ a) ext4
 - 2) + b) NTFS
 - 3) c) HFS+
 - 4) d) ZFS
- 72) A directory in an operating system is used to:
 - 1) a) Manage user permissions
 - 2) + b) Store metadata about files
 - 3) c) Control device drivers
 - 4) d) Allocate memory to processes
- 73) What is the purpose of a file extension (e.g., .txt, .exe)?
 - 1) a) Determines the file name
 - 2) ____b) Specifies the file size
 - 3) + c) Identifies the file type and associated programs
 - 4) d) Allocates disk space
- 74) Which file allocation method reduces fragmentation?
 - 1) a) Contiguous Allocation
 - 2) b) Linked Allocation
 - 3) + c) Indexed Allocation
 - 4) d) Direct Mapping
- 75) The purpose of the inode in a file system is to:
 - 1) + a) Store file permissions, size, and metadata
 - 2) b) Increase file storage speed
 - 3) c) Manage disk scheduling
 - 4) d) Encrypt files for security
- 76) Which of the following conditions must hold for a deadlock to occur?
 - 1) + a) Mutual Exclusion, Hold and Wait, No Preemption, Circular Wait
 - 2) b) Race Condition, Paging, Thrashing, Segmentation
 - 3) c) Scheduling, Virtual Memory, Swapping, Page Faults
 - 4) d) Fragmentation, Deadlock Detection, Interrupts, Buffering
 - Deadlock prevention can be achieved by:
 - 1) + a) Avoiding Circular Wait
 - 2) b) Allowing multiple processes to hold resources
 - 3) c) Increasing CPU scheduling priority
 - 4) d) Implementing paging
- 78) What is the role of a Resource Allocation Graph (RAG) in deadlock detection?
 - 1) + a) Helps identify circular waits
 - 2) b) Improves file system efficiency
 - 3) c) Schedules CPU processes
 - 4) d) Allocates memory to processes
- 79) Which technique is used to handle deadlocks?
 - 1) a) Deadlock Prevention





- 2) b) Deadlock Avoidance
- 3) c) Deadlock Detection and Recovery
- 4) + d) All of the above
- 80) The Banker's Algorithm is used for:
 - 1) + a) Deadlock Avoidance
 - 2) b) CPU Scheduling
 - 3) c) Disk Scheduling
 - 4) d) Memory Allocation
- 81) Which of the following is an example of a block device?
 - 1) a) Keyboard
 - 2) b) Printer
 - 3) + c) Hard Disk
 - 4) d) Mouse
- 82) Spooling is used to:
 - 1) + a) Increase the efficiency of I/O operations
 - 2) b) Manage CPU scheduling
 - 3) c) Reduce memory fragmentation
 - 4) d) Prevent deadlocks
- 83) Which disk scheduling algorithm minimizes seek time?
 - 1) a) First Come First Serve (FCFS)
 - 2) + b) Shortest Seek Time First (SSTF)
 - 3) c) Round Robin (RR)
 - 4) d) Least Recently Used (LRU)
 - Which of the following is a character-based device?
 - 1) a) Hard Disk

- 2) b) SSD
- 3) c) Printer
- 4) + d) Keyboard
- 85) The purpose of DMA (Direct Memory Access) is to:
 - 1) + a) Allow devices to transfer data without CPU intervention
 - 2) b) Improve CPU scheduling
 - 3) c) Increase file system performance
 - 4) d) Detect deadlocks
- 86) What is the main goal of an Operating System's security?
 - 1) + a) Preventing unauthorized access
 - 2) b) Improving CPU performance
 - 3) c) Reducing memory fragmentation
 - 4) d) Increasing process scheduling efficiency
- 87) What is the purpose of a firewall?
 - 1) + a) Blocks unauthorized network access
 - 2) b) Schedules CPU processes
 - 3) c) Prevents page faults
 - 4) d) Allocates memory to programs
- 88) Which of the following scheduling algorithms gives each process a fixed time slot before moving to the next process?
 - 1) a) First Come First Serve (FCFS)
 - 2) b) Shortest Job Next (SJN)
 - 3) + c) Round Robin (RR)
 - 4) d) Priority Scheduling



4)





- 89) In preemptive scheduling, a process can be:
 - 1) + a) Interrupted and moved to the ready queue
 - 2) b) Completed before other processes start
 - 3) c) Assigned a higher priority permanently
 - d) Prevented from using the CPU
- 90) Which of the following algorithms is used for real-time systems?
 - 1) a) Round Robin
 - 2) b) Shortest Remaining Time First (SRTF)
 - 3) + c) Earliest Deadline First (EDF)
 - 4) d) Multilevel Feedback Queue
- 91) Virtual memory is:
 - 1) + a) Part of the hard disk used as an extension of RAM
 - 2) b) A type of ROM storage
 - 3) c) The cache memory of the CPU
 - d) A hardware feature in microprocessors
- 92) Which of the following is a disadvantage of paging?
 - 1) a) Increases memory fragmentation
 - 2) + b) Causes thrashing when overloaded
 - 3) c) Requires contiguous memory allocation
 - 4) d) Increases process execution time
- 93) What is a page fault?
 - 1) + a) When a process tries to access a page that is not in memory
 - 2) b) When memory runs out of space
 - 3) c) When the CPU is overloaded
 - 4) d) When disk scheduling fails
- 94) Suppose that a process is waiting for some I/O service. When the service is completed, it goes to the
 - 1) Running state
 - 2) + Ready State
 - 3) Waiting State
 - 4) Terminate State
- 95) Several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called a(n) ______
 - 1) + Race condition
 - 2) Shared Memory Segments
 - 3) Entry Section
 - 4) Process Synchronization
- 96) Which one of the following is a synchronization tool?
 - 1) Critical Section
 - 2) pipe
 - 3) + semaphore
 - 4) Deadlock
- 97) Which one of the following is the address generated by CPU?
 - 1) physical address
 - 2) absolute address
 - 3) + logical address
 - 4) none of the mentioned
 - What are the requirements for the solution to critical section problem?
 - 1) Mutual Exclusion





- 2) Progress
- 3) ___ Bounded Waiting
- 4) + All of Above
- 99) If graph of processes contains cycle, then there is a deadlock.
 - 1) <u>-</u> TRUE.
 - 2) + FALSE.
- 100) Dual-mode operation does not allow OS to protect itself and other system component
 - 1) <u>-</u> TRUE.
 - 2) + FALSE.
- 101) What is a thread?
 - 1) + a) A lightweight process
 - 2) b) A unit of memory storage
 - 3) c) A file system component
 - 4) d) A type of virtual memory
- 102) In a multithreading environment, multiple threads:
 - 1) + a) Share the same process resources
 - 2) b) Run on different processors only
 - 3) c) Cannot communicate with each other
 - 4) d) Must have separate memory spaces
 - Which of the following is an authentication method?
 - 1) + a) Passwords
 - 2) b) File Fragmentation
 - 3) c) Thrashing
 - 4) d) Virtual Memory
- 104) Access Control Lists (ACL) are used for:
 - 1) + a) File and data security
 - 2) b) Deadlock detection
 - 3) c) Process scheduling
 - 4) d) Memory management
- 105) Which scheduling algorithm suffers from the "convoy effect"?
 - 1) a) Shortest Job Next (SJN)
 - 2) b) Round Robin (RR)
 - 3) + c) First Come First Serve (FCFS)
 - 4) d) Multilevel Queue Scheduling
- 106) In which scheduling algorithm does the process with the smallest execution time execute first?
 - 1) a) First Come First Serve (FCFS)
 - 2) + b) Shortest Job Next (SJN)
 - 3) c) Round Robin (RR)
 - 4) d) Priority Scheduling
- 107) The page replacement algorithm used in most modern operating systems is:
 - 1) a) First In First Out (FIFO)
 - 2) + b) Least Recently Used (LRU)
 - 3) c) Optimal Page Replacement
 - 4) d) Round Robin
- 108) The purpose of demand paging is to:
 - 1) + a) Load pages only when needed
 - 2) b) Allocate memory to processes in advance
 - 3) c) Reduce CPU load
 - 4) d) Store files in memory





- 109) A process generally also includes the process _____, which contains global variables
 - 1) Heap
 - 2) Stack
 - 3) + Data Section
 - 4) text section
- 110) Copying a process from memory to disk to allow space for other processes is called?
 - 1) + Swapping
 - 2) Deadlock
 - 3) Demand Paging
 - 4) Page Fault
- 111) Which one of the following is not true?
 - 1) kernel remains in the memory during the entire computer session
 - 2) + kernel is made of various modules which can not be loaded in running operating system
 - 3) kernel is the first part of the operating system to load into memory during booting
 - 4) kernel is the program that constitutes the central core of the operating system
- 112) What is a process control block (PCB)?
 - 1) + a) A data structure that stores information about a process
 - 2) b) A mechanism for controlling I/O devices
 - 3) c) A security feature in operating systems
 - 4) d) A type of file management system
- 113) What is the purpose of virtual memory in an operating system?.
 - 1) + a) To provide additional memory by using disk space
 - 2) b) To store hardware configuration settings
 - 3) c) To enhance the graphical user interface
 - 4) d) To manage network operations
- 114) It is necessary for threads in a process to have separate stacks
 - 1) + TRUE.
 - 2) FALSE.
- 115) Program running at all times on the computer called Kernel
 - 1) + TRUE.
 - 2) FALSE.
- 116) Which of the following is used to resolve external fragmentation?
 - 1) a) Paging
 - 2) b) Segmentation
 - 3) + c) Compaction
 - 4) d) Swapping
- 117) Page replacement algorithms are used to:
 - 1) a) Manage memory allocation dynamically
 - 2) b) Increase CPU speed
 - 3) + c) Reduce page faults
 - 4) d) Store data permanently
- 118) Which of the following page replacement algorithms is optimal but difficult to implement?
 - 1) a) First In First Out (FIFO)
 - 2) b) Least Recently Used (LRU)
 - 3) + c) Optimal Page Replacement (OPT)
 - 4) d) Least Frequently Used (LFU)
- 119) The page table is used to:
 - 1) + a) Keep track of pages in physical memory
 - 2) b) Store process control information



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- 3) c) Allocate CPU resources
 - 4) d) Manage I/O operations
- 120) Thrashing occurs when:
 - 1) + a) A process spends more time swapping pages than executing
 - 2) b) CPU scheduling is inefficient
 - 3) c) Too many processes are in the system
 - 4) d) Disk space runs out
- 121) What is a Translation Lookaside Buffer (TLB)?
 - 1) + a) A cache for page table entries
 - 2) b) A secondary storage device
 - 3) c) A file system component
 - 4) d) A disk scheduling algorithm
- 122) A file system is responsible for:
 - 1) + a) Managing files and directories
 - 2) b) Controlling CPU scheduling
 - 3) c) Allocating memory dynamically
 - 4) d) Handling process synchronization
- 123) Which of the following security attacks involves pretending to be another user?
 - 1) a) Phishing
 - 2) + b) Spoofing
 - 3) c) DDoS Attack
 - 4) d) Fragmentation Attack
- 124) Which of the following is NOT a file attribute?
 - 1) a) File Name
 - 2) _ _ b) File Size
 - 3) + c) CPU Scheduling Priority
 - 4) d) File Permissions
- 125) The operating system service that allows a user to execute a program is
 - 1) a) File Management
 - 2) + b) Program Execution
 - 3) c) Security
 - 4) d) I/O Operation
- 126) Which operating system service is responsible for handling input and output operations
 - 1) a) Process Management
 - 2) ____b) Memory Management
 - 3) + c) I/O Operation
 - 4) d) File System Management
- 127) The service that protects unauthorized access to programs and data is:
 - 1) _____a) File Management
 - 2) + b) Security
 - 3) c) Process Scheduling
 - 4) d) Deadlock Prevention
- 128) Which operating system service keeps track of system and user files?
 - 1) a) Process Control
 - 2) + b) File Management
 - 3) c) Memory Management
 - 4) d) I/O Operation
- 129) The service responsible for preventing and resolving deadlocks in an operating system is called:
 - 1) + a) Deadlock Handling





- 2) b) Process Scheduling
- 3) c) Memory Allocation
- 4) d) File Management

130) Which operating system service allows multiple users to access files simultaneously?

- 1) + a) File Sharing
- 2) b) I/O Management
- 3) c) Virtual Memory
- 4) d) Job Scheduling

131) Which system program is responsible for translating source code into machine code?

- 1) + a) Compiler
- 2) b) Linker
- 3) c) Loader
- 4) d) Interpreter
- 132) The process of allocating CPU time to various processes is called:
 - 1) a) I/O Scheduling
 - 2) + b) Process Scheduling
 - 3) c) Memory Paging
 - 4) d) Deadlock Prevention

133) Which of the following OS services handles inter-process communication?

- 1) ____a) File Management
- 2) + b) Process Synchronization
- 3) c) Networking
- 4) d) Program Execution
- 134) The main role of the command interpreter is to:
 - 1) a) Manage memory
 - 2) + b) Execute user commands
 - 3) c) Allocate disk space
 - 4) d) Handle network requests

135) he operating system service that loads a program into memory for execution is called:

- 1) a) File Management
 - 2) b) Memory Management
 - 3) + c) Program Loader
 - 4) d) Device Management
- 136) Which OS service is responsible for handling interrupts?
 - 1) a) Memory Management
 - 2) + b) Interrupt Handling System
 - 3) c) CPU Scheduling
 - 4) d) File System Management
- 137) The primary role of the OS service "Virtual Memory" is to:
 - 1) _____a) Enable processes to run on multiple processors
 - 2) + b) Simulate more memory than physically available
 - 3) c) Schedule CPU processes
 - 4) d) Provide a graphical interface
- 138) Which of the following is the main responsibility of the OS service "I/O Management"?
 - 1) _____a) Allocating CPU time
 - 2) + b) Managing device communication and data transfer
 - 3) c) Organizing files into directories
 - 4) d) Handling virtual memory page
- 139) The operating system service "File Management" includes:





- 1) + a) Access control, file storage, and directory structures
- 2) b) Process scheduling and memory allocation
- 3) c) Virtual memory management
- 4) d) I/O buffering and paging
- 140) Which of the following OS services handles error detection and management?
 - 1) a) Device Management
 - 2) b) File Management
 - 3) _____ c) Process Management
 - 4) + d) Error Handling
- 141) Which service is required for an operating system to handle system calls and user requests?
 - 1) a) Interrupt Handling
 - 2) + b) Kernel Services
 - 3) c) Memory Allocation
 - 4) d) File Handling
- 142) The operating system service that helps in managing the allocation and deallocation of resources to running processes is called:
 - 1) a) Memory Management
 - 2) + b) Resource Allocation
 - 3) c) Process Management
 - 4) d) Device Management
- 143) Which OS service is responsible for ensuring that no process exceeds its allocated resources?
 - 1) a) Process Scheduling
 - 2) + b) Memory Protection
 - 3) c) File Management
 - 4) d) Deadlock Prevention
- 144) Which service of the operating system is used to provide a user-friendly interface?
 - 1) + a) User Interface Management
 - 2) b) File Management
 - 3) c) Network Management
 - 4) d) Process Synchronization
- 145) Which service is responsible for tracking system resources, such as CPU usage and disk space?
 - 1) a) Resource Allocation
 - 2) + b) Accounting
 - 3) c) File Management
 - 4) d) Process Scheduling
- 146) The operating system service "Security" is responsible for:
 - 1) a) Allocating CPU time to processes
 - 2) + b) Protecting the system and user data from unauthorized access
 - 3) c) Scheduling the execution of user programs
 - 4) d) Managing I/O devices and data transfers
- 147) Which of the following is NOT a function of an operating system?
 - 1) a) Managing hardware resources
 - 2) b) Providing user interface
 - 3) c) Executing user programs
 - 4) + d) Compiling application programs
- 148) The operating system service that maintains detailed records of system usage for performance monitoring is:
 - 1) + a) Accounting
 - 2) b) Logging
 - 3) c) Security







- 4) d) File Management
- 149) Which of the following is NOT an operating system service?
 - 1) a) Process Management
 - 2) b) Memory Management
 - 3) + c) Network Browsing
 - 4) d) File System Management
- 150) In a file system, a hard link:
 - 1) + a) Points directly to the file's inode
 - 2) b) Creates a duplicate copy of a file
 - c) Stores metadata separately from the file
 - 4) d) Provides network file access
- 151) What does the OS use to manage concurrent processes effectively?
 - 1) + a) Thread Synchronization
 - 2) b) Virtual Memory
 - 3) c) I/O Buffering
 - 4) d) Deadlock Detection
- 152) The service that manages hardware communication and control is:
 - 1) + a) Device Management
 - 2) b) File Management
 - 3) c) Memory Allocation
 - 4) d) CPU Scheduling
- 153) The process of swapping data between RAM and disk storage when memory is full is called:
 - 1) + a) Virtual Memory
 - 2) b) File Management
 - 3) c) I/O Scheduling
 - 4) d) Deadlock Prevention
- 154) Which OS service is used for organizing files into directories?
 - 1) + a) File System Management
 - 2) b) Process Scheduling
 - 3) c) I/O Buffering
 - 4) d) Memory Paging
- 155) A user interface that allows typing commands for execution is called:
 - 1) ____a) Graphical User Interface (GUI)
 - 2) + b) Command Line Interface (CLI)
 - 3) c) Process Scheduler
 - 4) d) File Manager
- 156) Which operating system service manages the execution of system-level programs and software utilities?
 - 1) + a) Program Execution
 - 2) b) System Resource Allocation
 - 3) c) Network Management
 - 4) d) Security
- 157) The OS service that ensures that the system runs efficiently even with multiple programs running concurrently is called:
 - 1) + a) Process Scheduling
 - 2) b) Memory Management
 - 3) c) Virtual Memory
 - 4) d) Device Management
- 158) The OS service "Network Management" is responsible for:
 - 1) a) Managing CPU resources





- 2) + b) Controlling access to networked resources
- 3) c) File storage and retrieval
- 4) d) Interrupt handling
- 159) Which OS service is responsible for maintaining system logs and audit trails for security purposes?
 - 1) a) Process Management
 - 2) b) File Management
 - 3) + c) Security
 - 4) d) Accounting
- 160) The OS service responsible for allocating memory space for programs and managing the memory hierarchy is:
 - 1) ____ a) I/O Management
 - 2) + b) Memory Management
 - 3) c) Process Management
 - 4) d) File Management
- 161) In a multithreaded environment, multiple threads within the same process:
 - 1) + a) Share the same memory space and resources
 - 2) b) Have separate memory spaces
 - 3) c) Cannot communicate with each other
 - 4) d) Run on different processors exclusively
- 162) Which of the following OS services prevents multiple users from interfering with each other's activities on a shared system?
 - 1) a) Memory Protection
 - 2) + b) Process Synchronization
 - 3) c) Deadlock Prevention
 - 4) d) Virtual Memory
- 163) The primary purpose of synchronization in multithreading is to:
 - 1) + a) Prevent processes from interfering with each other
 - 2) b) Increase the number of threads running concurrently
 - 3) c) Allow multiple threads to access the same memory space without errors
 - 4) d) Assign resources to threads in a round-robin fashion
- 164) Which of the following is an advantage of multithreading?
 - 1) + a) Better resource utilization by sharing resources among multiple threads
 - 2) b) Increased memory requirements for each thread
 - 3) c) Less complexity in process scheduling
 - 4) d) Slower execution due to thread synchronization
- 165) What is a "thread pool"?
 - 1) + a) A collection of pre-created threads ready to execute tasks
 - 2) b) A set of resources allocated for a single thread
 - 3) c) A mechanism for controlling deadlocks
 - 4) d) A way to increase the number of threads in a process
- 166) What is the main disadvantage of using a large number of threads in a system?
 - 1) + a) Increased overhead due to context switching and synchronization
 - 2) b) More efficient use of memory
 - 3) c) Improved CPU utilization
 - 4) d) Easier process management

167) What is the function of the "join()" method in thread management?

- 1) + a) It makes the calling thread wait for the completion of another thread
- 2) b) It starts the execution of a thread
- 3) c) It terminates a running thread

 4) - d) It ensures that threads access shared resources in a safe manner 168) Which of the following is true about "parallelism" in multithreading? 1) + a) It refers to executing multiple threads concurrently on multiple processors 2) - b) It is the same as concurrency 3) - c) It is limited to single-core processors 4) - d) It eliminates the need for synchronization 109) Which thread scheduling algorithm prioritizes threads based on their importance and deadlines? 1) - a) Round Robin 2) + b) Priority Scheduling 3) - c) First Come First Serve (FCFS) 4) - d) Shortest Job First (SJF) 70) Which of the following is a key advantage of multithreading in an operating system? 1) - a) Reduced memory consumption 2) + b) More efficient CPU usage 3) - c) Increased disk space utilization 4) - d) Easier process management 1710) In multithreading, what is "context switching"? 1) - a) Switching between different tasks in a process 2) + b) The process of switching between different threads of the same process 3) - c) Changing the thread execution from one processor to another 4) - d) Assigning new priorities to threads 10 + b) Increased complexity due to synchronization and context switching 3) - c) Threads are unable to share data 4) - d) Threads are unable to share data 4) - d) Threads are unable to share data 4) - d) Threads are unable to share data 4) - e) Threads are unable to share data 4) - d) Threads are unable to share data 4) - d) Threads are unable to share data 4) - d) Threads are unable to share data 5) - c) Act as an antivirus program 4) - d) Optimize internet speed 174 What is the primary role of an operating system? 1) + a) Accore part of the OS that management 10 4) - d) macOS <li< th=""><th></th><th></th><th></th><th>الجمهورية اليمنية جامعة صنعاء مركز الاختبارات الالكترونية</th></li<>				الجمهورية اليمنية جامعة صنعاء مركز الاختبارات الالكترونية
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2) - b) Network OS	170)	1)	-	a) Real-time OS
		2)	-	b) Network OS

- 3) c) Embedded OS
- 4) + d) Bare-metal OS
- 177) Which operating system component is responsible for process scheduling?
 - 1) a) File Manager
 - 2) b) Memory Manager







- 3) + c) CPU Scheduler
- 4) d) Device Driver
- 178) The "Device Management" service in an OS is responsible for:
 - 1) a) Allocating memory blocks for programs
 - 2) b) Scheduling processes for execution
 - 3) + c) Controlling hardware devices and managing input/output operations
 - 4) d) Keeping track of files and directories
- 179) What does "multicore processing" allow in relation to multithreading?
 - 1) + a) It allows multiple threads to run on different cores concurrently, improving performance
 - 2) b) It allows threads to run only on a single core
 - 3) c) It reduces the number of threads created in an application
 - 4) d) It prevents threads from accessing shared memory
- 180) Which of the following is an example of a multithreaded application?
 - 1) + a) A web browser that loads different web pages simultaneously
 - 2) b) A text editor that edits one document at a time
 - 3) c) A database management system with no parallel queries
 - 4) d) A compiler that compiles one source code file sequentially