UNIT I – INTRODUCTION TO OPERATING SYSTEM (50 MCQs)

1 Computer System & OS Overview (5 Questions)

1. The operating system acts as A) Application software B) Interface between user and hardware C) Compiler D) Text editor Answer: B

2. The primary goal of an OS is A) Increase hardware cost B) Manage resources efficiently C) Replace CPU D) Delete files Answer: B

3. The OS is loaded into memory during A) Editing B) Booting C) Printing D) Compiling Answer: B

4. The core part of the OS is called A) Shell B) Kernel C) Driver D) BIOS Answer: B

5. An interrupt is used to A) Stop CPU permanently B) Inform CPU about an event C) Delete memory D) Increase RAM Answer: B

2 Objectives & Functions of OS (5 Questions)

6. One objective of OS is A) Virus creation B) Convenience C) Disk failure D) Hardware damage Answer: B

7. Efficiency in OS means A) Proper resource utilization B) Increasing RAM size C) Deleting files D) Reducing CPU Answer: A

8. Process management is a function of A) Compiler B) Operating System C) Browser D) Editor Answer: B

9. Memory management is responsible for A) Allocating RAM B) Disk formatting C) CPU shutdown D) File printing Answer: A

10. File system management handles A) CPU scheduling B) File creation and deletion C) Thread creation D) Cache control Answer: B

3 Evolution of Operating System (5 Questions)

11. The earliest OS were A) Time-sharing systems B) Batch systems C) Real-time systems D) Distributed systems Answer: B

12. Multiprogramming increases A) CPU idle time B) CPU utilization C) Disk errors D) Thrashing Answer: B

13. Time-sharing systems are designed to A) Support single user B) Share CPU among users C) Eliminate OS D) Remove memory Answer: B

14. Real-time OS is mainly used in A) Games B) Embedded systems C) Browsers D) Word processors Answer: B

15. Distributed OS manages A) Single computer B) Multiple computers C) Only CPU D) Only RAM Answer: B

4️⃣ Operating System Structures (5 Questions)

16. In monolithic structure A) OS services are separated B) Single large kernel handles all services C) No kernel exists D) Multiple OS run Answer: B

17. Layered structure improves A) Complexity B) Modularity C) Disk size D) Hardware cost Answer: B

18. Microkernel keeps A) All services in kernel B) Minimal services in kernel C) No services D) Only drivers Answer: B

19. Modular kernel design improves A) Maintenance B) Disk damage C) CPU failure D) RAM error Answer: A

20. Microkernel improves A) Reliability B) Fragmentation C) Thrashing D) Starvation Answer: A

5️⃣ Operating System Services (5 Questions)

21. OS provides program execution service to A) Delete program B) Load and run program C) Format disk D) Increase RAM Answer: B

22. I/O service allows A) Direct hardware access without OS B) Controlled device access C) Remove CPU D) Delete files Answer: B

23. Error detection service helps to A) Crash system B) Identify hardware/software faults C) Increase RAM D) Format disk Answer: B

24. Resource allocation service ensures A) Fair distribution of resources B) Delete processes C) Reduce memory D) Stop CPU Answer: A

25. Protection service prevents A) Unauthorized access B) CPU scheduling C) Paging D) Swapping Answer: A

6 User Operating System Interface (5 Questions)

26. CLI stands for A) Command Line Interface B) Central Logic Interface C) Core Line Integration D) Control Link Interface Answer: A

27. GUI stands for A) General Utility Interface B) Graphical User Interface C) Global User Internet D) Graph Unit Integration Answer: B

28. The command interpreter is also called A) Kernel B) Shell C) Loader D) BIOS Answer: B

29. MS-DOS is an example of A) GUI B) CLI-based OS C) Distributed OS D) Microkernel Answer: B

30. Windows OS primarily uses A) CLI B) GUI C) No interface D) Batch Answer: B

7 System Calls (5 Questions)

31. System calls provide A) Direct hardware access B) Interface to OS services C) File deletion only D) Disk formatting Answer: B

32. fork() system call is used to A) Delete process B) Create new process C) Allocate disk D) Print output Answer: B

33. exec() system call is used to A) Replace process memory B) Shutdown system C) Increase RAM D) Schedule CPU Answer: A

34. read() and write() are examples of A) File management system calls B) Scheduling algorithms C) Paging methods D) Deadlock methods Answer: A

35. System calls are executed in A) User mode B) Kernel mode C) Cache D) BIOS Answer: B

8 System Programs (5 Questions)

36. System programs provide A) Hardware B) Environment for program development C) CPU scheduling D) Paging Answer: B

37. Compiler is an example of A) Application program B) System program C) Kernel D) Device Answer: B

38. Loader is responsible for A) Running OS B) Loading program into memory C) Scheduling CPU D) Swapping Answer: B

39. File utilities belong to A) System programs B) Hardware C) Threads D) Cache Answer: A

40. Editors are used for A) CPU control B) Writing programs C) Disk scheduling D) Memory allocation Answer: B

9 OS Design & Implementation (5 Questions)

41. OS design depends on A) Hardware architecture B) System goals C) Programming language D) All of the above Answer: D

42. Separation of policy and mechanism improves A) Flexibility B) Fragmentation C) Disk damage D) Starvation Answer: A

43. Dual-mode operation provides A) Two CPUs B) Protection mechanism C) Two OS D) Extra RAM Answer: B

44. Kernel mode has A) Limited access B) Full access to hardware C) No access D) Only user access Answer: B

45. User mode restricts A) File access B) Privileged instructions C) Scheduling D) Paging Answer: B

10 Protection & Security (5 Questions)

46. Protection mechanism ensures A) Secure resource sharing B) CPU failure C) Disk damage D) Thrashing Answer: A

47. Authentication verifies A) File size B) User identity C) CPU speed D) RAM size Answer: B

48. Access control prevents A) Authorized use B) Unauthorized access C) Paging D) Scheduling Answer: B

49. Accounting service tracks A) Resource usage B) Disk errors C) CPU shutdown D) Deadlock Answer: A

50. The ultimate role of OS is to A) Replace hardware B) Manage system resources efficiently C) Delete files D) Increase virus Answer: B

UNIT II – PROCESS MANAGEMENT

1 **Processes & Process Concept (5 Questions)**

1. A process is defined as A) Program in memory B) Program in execution C) Compiled code D) Batch job Answer: B

2. The Process Control Block (PCB) contains A) Process state B) Program counter C) CPU registers D) All of the above Answer: D

3. Which state indicates the process is waiting for CPU? A) Running B) Ready C) Waiting D) Terminated Answer: B

4. Context switching occurs when A) One process replaces another in CPU B) RAM increases C) Disk fails D) OS shuts down Answer: A

5. The unique identifier assigned to a process is called A) PID B) TID C) UID D) PCB Answer: A

2 **Process Scheduling (5 Questions)**

6. Process scheduling selects process from A) Job queue B) Ready queue C) I/O queue D) Disk queue Answer: B

7. Long-term scheduler selects processes from A) Ready queue B) Job pool C) I/O queue D) CPU Answer: B

8. Short-term scheduler is also called A) Job scheduler B) CPU scheduler C) I/O scheduler D) Memory scheduler Answer: B

9. Dispatcher is responsible for A) Process creation B) Context switch C) Memory allocation D) I/O control Answer: B

10. Scheduling improves A) CPU utilization B) Disk size C) RAM cost D) Virus attack Answer: A

3 **Inter-Process Communication (5 Questions)**

11. IPC allows processes to A) Compete B) Communicate C) Delete memory D) Increase CPU Answer: B

12. Shared memory is an IPC method where A) Processes share RAM B) Separate memory used C) Only kernel used D) No synchronization needed Answer: A

13. Message passing is useful in A) Distributed systems B) Single CPU only C) No OS D) Batch systems Answer: A

14. Pipes are used for A) Scheduling B) IPC C) Paging D) Deadlock prevention Answer: B

15. Direct communication requires A) Process naming B) Shared disk C) No OS D) Multiple CPUs Answer: A

4️⃣ CPU Scheduling Criteria & Algorithms (5 Questions)

16. Which scheduling algorithm is non-preemptive? A) Round Robin B) FCFS C) Priority (preemptive) D) Multilevel queue Answer: B

17. Round Robin uses A) Priority B) Time quantum C) FIFO only D) No CPU Answer: B

18. SJF scheduling minimizes A) Turnaround time B) Waiting time C) CPU time D) Response time always Answer: B

19. Starvation occurs in A) FCFS B) Priority scheduling C) Round Robin D) FIFO Answer: B

20. Throughput refers to A) CPU speed B) Number of processes completed C) RAM size D) Disk speed Answer: B

5️⃣ Threads & Multithreading Models (5 Questions)

21. A thread is A) Lightweight process B) Heavyweight process C) CPU D) Memory block Answer: A

22. Threads share A) Separate memory B) Address space C) Different OS D) Different CPU Answer: B

23. Many-to-One model maps A) Many user threads to one kernel thread B) One to many C) One to one D) Many to many Answer: A

24. One-to-One model provides A) Parallelism B) No concurrency C) No kernel support D) Single process Answer: A

25. Thread cancellation refers to A) Creating thread B) Terminating thread C) Scheduling thread D) Blocking thread Answer: B

6 Process Synchronization & Critical Section (5 Questions)

26. Critical section is A) Part of code accessing shared resource B) Whole program C) OS kernel D) Scheduler Answer: A

27. Race condition occurs when A) Single process runs B) Multiple processes access shared data simultaneously C) CPU idle D) Disk fails Answer: B

28. Mutual exclusion ensures A) Only one process enters critical section B) All processes run C) No CPU D) Disk sharing Answer: A

29. Synchronization is required to A) Prevent inconsistency B) Increase disk size C) Reduce RAM D) Speed monitor Answer: A

30. Critical section problem has how many requirements? A) 1 B) 2 C) 3 D) 4 Answer: C

7 Synchronization Hardware, Semaphores & Mutex (5 Questions)

31. Test-and-set instruction is used for A) Scheduling B) Synchronization C) Paging D) File allocation Answer: B

32. Semaphore was introduced by A) Dijkstra B) Tanenbaum C) Stallings D) Dennis Ritchie Answer: A

33. Binary semaphore is also called A) Counting semaphore B) Mutex C) Monitor D) Thread Answer: B

34. wait() operation is also called A) Signal B) P-operation C) V-operation D) Stop Answer: B

35. signal() operation is also called A) P-operation B) V-operation C) wait D) block Answer: B

8 Classical Problems & Monitors (5 Questions)

36. Producer-Consumer problem is example of A) Scheduling B) Synchronization C) Paging D) Swapping Answer: B

37. Dining Philosophers problem deals with A) Deadlock B) Paging C) Disk scheduling D) Booting Answer: A

38. Monitor provides A) High-level synchronization B) Scheduling C) Memory allocation D) Paging Answer: A

39. Condition variable is used in A) Monitor B) Paging C) Disk scheduling D) IPC only
Answer: A

40. Bounded buffer problem is related to A) Memory leak B) Synchronization C) Deadlock recovery D) Thrashing Answer: B

9 Deadlock – Concepts & Conditions (5 Questions)

41. Deadlock requires how many necessary conditions? A) 2 B) 3 C) 4 D) 5 Answer: C

42. Mutual exclusion is A) Optional B) Necessary condition for deadlock C) Scheduling criteria D) Paging issue Answer: B

43. Circular wait means A) Single process waiting B) Processes waiting in cycle C) CPU waiting D) Disk failure Answer: B

44. No preemption means A) Resources cannot be taken forcibly B) CPU fast C) Disk shared D) Paging done Answer: A

45. Hold and wait means A) Process holds resource and waits for another B) Releases all resources C) No memory D) Scheduling issue Answer: A

10 Deadlock Handling Methods (5 Questions)

46. Deadlock prevention breaks A) At least one necessary condition B) All processes C) CPU D) Disk Answer: A

47. Banker's algorithm is used for A) Prevention B) Avoidance C) Detection D) Recovery Answer: B

48. Deadlock detection uses A) Resource allocation graph B) Paging C) Swapping D) Disk scheduling Answer: A

49. Recovery from deadlock can be done by A) Process termination B) Resource preemption C) Both A and B D) None Answer: C

50. Safe state means A) Deadlock present B) Deadlock possible C) No deadlock D) CPU idle Answer: C

UNIT III – MEMORY MANAGEMENT

1️⃣ Main Memory (5 Questions)

1. Main memory is also called A) Secondary memory B) RAM C) Cache D) ROM Answer: B

2. Main memory is volatile because A) Data is permanent B) Data is lost when power off C) It is slow D) It is external Answer: B

3. The OS keeps track of memory using A) Memory table B) File table C) Disk table D) CPU table Answer: A

4. Memory protection prevents A) Disk errors B) Unauthorized access C) CPU scheduling D) Booting Answer: B

5. Base and limit registers are used for A) Paging B) Memory protection C) Disk scheduling D) Deadlock Answer: B

2️⃣ Swapping (5 Questions)

6. Swapping moves processes between A) CPU and RAM B) RAM and Disk C) Disk and Printer D) Cache and CPU Answer: B

7. Swap space is located in A) RAM B) Cache C) Hard disk D) CPU Answer: C

8. Roll-out roll-in technique is used in A) Paging B) Swapping C) Segmentation D) Scheduling Answer: B

9. Swapping increases A) CPU speed B) Multiprogramming level C) Disk size D) Monitor speed Answer: B

10. Excessive swapping leads to A) Thrashing B) Deadlock C) Starvation D) Fragmentation Answer: A

3️⃣ Contiguous Memory Allocation (5 Questions)

11. In contiguous allocation, each process occupies A) Non-adjacent blocks B) Adjacent memory block C) Cache D) Disk only Answer: B

12. External fragmentation occurs in A) Paging B) Contiguous allocation C) Virtual memory D) Threads Answer: B

13. First-fit algorithm allocates A) Largest hole B) Smallest hole C) First suitable hole D) Last hole Answer: C

14. Best-fit algorithm selects A) Largest hole B) Smallest sufficient hole C) First hole D) Random hole Answer: B

15. Worst-fit algorithm selects A) Largest hole B) Smallest hole C) Middle hole D) First hole Answer: A

4 Paging & Structure of Page Table (5 Questions)

16. Paging eliminates A) Internal fragmentation B) External fragmentation C) Deadlock D) Starvation Answer: B

17. Logical address is divided into A) Page number and offset B) Base and limit C) Frame and disk D) None Answer: A

18. Page table stores A) Process IDs B) Frame numbers C) Disk blocks D) CPU registers Answer: B

19. Page size is usually A) Fixed B) Variable C) Infinite D) Zero Answer: A

20. TLB stands for A) Translation Lookaside Buffer B) Table Link Block C) Thread Local Buffer D) Transfer Logic Block Answer: A

5 Segmentation & Segmentation with Paging (5 Questions)

21. Segmentation divides memory into A) Fixed size blocks B) Logical segments C) Frames D) Pages only Answer: B

22. Segment table contains A) Page number B) Base and limit C) Frame number D) PID Answer: B

23. Segmentation supports A) Logical view of program B) Physical view only C) No memory D) Disk scheduling Answer: A

24. Segmentation suffers from A) Internal fragmentation B) External fragmentation C) Thrashing D) Deadlock Answer: B

25. Segmentation with paging combines A) Advantages of both B) Only paging C) Only segmentation D) No mapping Answer: A

6️⃣ Virtual Memory & Demand Paging (5 Questions)

26. Virtual memory allows execution of A) Large programs B) Small programs only C) No programs D) Threads only Answer: A

27. Demand paging loads page into memory A) At compile time B) When needed C) At shutdown D) Always fully Answer: B

28. Page fault occurs when A) Page is in memory B) Page not in memory C) Disk fails D) CPU stops Answer: B

29. Valid-invalid bit is used to A) Detect page presence B) Detect disk error C) Increase RAM D) Prevent deadlock Answer: A

30. Effective access time increases due to A) No page fault B) Page fault C) Large RAM D) Fast CPU Answer: B

7️⃣ Page Replacement & Allocation of Frames (5 Questions)

31. FIFO page replacement may suffer from A) Thrashing B) Belady's anomaly C) Deadlock D) Starvation Answer: B

32. Optimal page replacement replaces A) Oldest page B) Future unused page C) Random page D) First page Answer: B

33. LRU replaces A) Most recently used B) Least recently used C) Oldest D) Random Answer: B

34. Frame allocation can be A) Equal allocation B) Proportional allocation C) Priority allocation D) All of the above Answer: D

35. Thrashing occurs when A) Low paging B) High paging C) No memory D) Disk idle Answer: B

8️⃣ File System Structure & Directory Implementation (5 Questions)

36. File system organizes A) CPU B) Disk data C) RAM D) Cache Answer: B

37. Directory contains A) File names B) File attributes C) Location info D) All of the above Answer: D

38. Single-level directory supports A) Multiple users efficiently B) No name conflict C) Name conflict D) Distributed system Answer: C

39. Tree-structured directory allows A) Hierarchical structure B) Flat structure C) No files D) Only one user Answer: A

40. File descriptor contains A) File metadata B) CPU data C) RAM info D) Printer info Answer: A

9 Allocation Methods & Free Space Management (5 Questions)

41. Contiguous allocation is simple but suffers from A) Fragmentation B) Thrashing C) Deadlock D) Paging Answer: A

42. Linked allocation removes A) Internal fragmentation B) External fragmentation C) Thrashing D) Deadlock Answer: B

43. Indexed allocation uses A) Index block B) Linked list C) FIFO D) LRU Answer: A

44. Free space can be managed using A) Bit map B) Linked list C) Grouping D) All of the above Answer: D

45. FAT is example of A) Indexed allocation B) Linked allocation C) Contiguous D) Paging Answer: B

10 I/O Systems, Disk Structure & Virtual Machines (5 Questions)

46. I/O hardware includes A) Device controller B) CPU C) Cache D) Kernel only Answer: A

47. Kernel I/O subsystem provides A) Buffering B) Caching C) Spooling D) All of the above Answer: D

48. Disk scheduling algorithm that reduces seek time is A) FCFS B) SSTF C) FIFO D) Round Robin Answer: B

49. SCAN algorithm is also called A) Elevator algorithm B) FIFO C) LRU D) Optimal Answer: A

50. Virtual machine provides A) Software-based hardware B) Physical CPU only C) RAM only D) Disk only Answer: A

UNIT IV – VIRTUALIZATION

1 **Introduction to Virtualization (5 Questions)**

1. Virtualization allows A) Single OS per hardware B) Multiple OS on single hardware C) No OS D) Only Linux OS Answer: B

2. Virtualization improves A) Resource utilization B) Disk failure C) Hardware damage D) CPU shutdown Answer: A

3. A virtual machine is A) Physical CPU B) Software implementation of computer C) Hard disk D) BIOS Answer: B

4. Virtualization provides A) Hardware abstraction B) File deletion C) CPU removal D) Disk formatting Answer: A

5. Main purpose of virtualization is A) Reduce RAM B) Increase cost C) Efficient hardware usage D) Delete OS Answer: C

2 **Types of Virtualization (5 Questions)**

6. Hardware virtualization creates A) Virtual hardware environment B) Real CPU C) Extra RAM physically D) No OS Answer: A

7. OS-level virtualization is also called A) Containerization B) Paging C) Scheduling D) Swapping Answer: A

8. Storage virtualization combines A) Multiple storage devices B) Multiple CPUs C) Multiple RAM D) Multiple monitors Answer: A

9. Network virtualization abstracts A) Physical network B) CPU C) RAM D) Disk scheduling Answer: A

10. Desktop virtualization provides A) Remote desktop access B) Extra hardware C) BIOS access D) File deletion Answer: A

3 **Hardware Emulation (5 Questions)**

11. Emulation simulates A) Hardware using software B) RAM only C) CPU only D) Disk only Answer: A

12. Emulation allows A) Running different architecture OS B) Same OS only C) No OS D) Kernel removal Answer: A

13. Emulation is slower because A) Direct hardware access B) Instruction translation C) Large RAM D) Small disk Answer: B

14. Emulator translates A) Source code B) Machine instructions C) Files D) Threads Answer: B

15. QEMU is an example of A) Emulator B) Compiler C) Editor D) Scheduler Answer: A

4️⃣ Full Virtualization with Binary Translation (5 Questions)

16. Full virtualization allows A) Modified guest OS B) Unmodified guest OS C) No OS D) Single process only Answer: B

17. Binary translation is used to A) Translate privileged instructions B) Delete files C) Increase RAM D) Schedule CPU Answer: A

18. Full virtualization requires A) Hypervisor B) Compiler C) Editor D) BIOS Answer: A

19. Guest OS in full virtualization A) Knows it is virtualized B) Does not know it is virtualized C) Controls hardware directly D) Deletes host OS Answer: B

20. VMware Workstation uses A) Full virtualization B) Paging C) Segmentation D) Swapping Answer: A

5️⃣ Hardware-Assisted Virtualization (5 Questions)

21. Hardware-assisted virtualization uses A) VT-x / AMD-V support B) Disk scheduling C) Paging D) FIFO Answer: A

22. Intel VT-x provides A) Hardware support for virtualization B) Disk partition C) Memory allocation D) Thread scheduling Answer: A

23. Hardware-assisted virtualization reduces A) Performance B) Translation overhead C) RAM D) Disk Answer: B

24. Guest OS in hardware-assisted virtualization A) Requires modification B) Does not require modification C) Cannot run D) Deletes kernel Answer: B

25. AMD-V is A) Hardware virtualization support B) File system C) CPU scheduler D) Monitor Answer: A

6 Operating System Virtualization (5 Questions)

26. OS virtualization shares A) Same kernel B) Different hardware C) Different BIOS D) Different CPU physically Answer: A

27. Containers are example of A) OS-level virtualization B) Hardware emulation C) Paging D) Segmentation Answer: A

28. OS-level virtualization is lightweight because A) No guest OS B) Separate OS per VM C) Extra hardware D) Disk scheduling Answer: A

29. Linux containers use A) Shared kernel B) Separate kernel C) No kernel D) Windows kernel Answer: A

30. Docker is used for A) Containerization B) Paging C) Scheduling D) Swapping Answer: A

7 OS-Assisted / Para Virtualization (5 Questions)

31. Paravirtualization requires A) Modified guest OS B) Unmodified OS C) No OS D) No hypervisor Answer: A

32. In paravirtualization, guest OS A) Communicates directly with hypervisor B) Controls hardware C) Deletes host D) Ignores hypervisor Answer: A

33. Paravirtualization improves A) Disk damage B) Performance C) CPU idle time D) Fragmentation Answer: B

34. Xen originally used A) Paravirtualization B) Paging C) Scheduling D) Swapping Answer: A

35. Hypercalls are used in A) Paravirtualization B) Paging C) Disk scheduling D) Swapping Answer: A

8 Benefits of Virtualization (5 Questions)

36. Virtualization reduces A) Hardware utilization B) Hardware cost C) RAM D) Disk Answer: B

37. Server consolidation is achieved using A) Virtualization B) Paging C) Swapping D) Scheduling Answer: A

38. Isolation between VMs improves A) Security B) Disk failure C) CPU damage D) Fragmentation Answer: A

39. Scalability is improved by A) Adding VMs B) Removing OS C) Deleting CPU D) Removing RAM Answer: A

40. Disaster recovery is easier with A) Snapshots B) Paging C) Swapping D) FIFO Answer: A

9 Performance & Overhead (5 Questions)

41. Virtualization overhead refers to A) Extra processing cost B) Disk formatting C) RAM removal D) CPU deletion Answer: A

42. Type 1 hypervisor gives A) Better performance B) Lower performance C) No OS D) No virtualization Answer: A

43. Container performance is A) Close to native B) Very slow C) No execution D) Only disk Answer: A

44. Resource overcommitment means A) Allocating more virtual resources than physical B) Removing RAM C) Deleting OS D) Stopping CPU Answer: A

45. Hypervisor scheduling manages A) VM CPU allocation B) File system C) Disk format D) Swapping Answer: A

10 Virtualization Use Cases (5 Questions)

46. Cloud computing relies on A) Virtualization B) Paging C) Scheduling D) Swapping Answer: A

47. Testing multiple OS on single system uses A) Virtual machines B) Paging C) Segmentation D) Swapping Answer: A

48. Development environments use virtualization for A) Isolation B) Disk damage C) CPU removal D) RAM deletion Answer: A

49. Virtualization helps in A) Legacy application support B) Deleting OS C) Removing RAM D) CPU shutdown Answer: A

50. The main software managing VMs is called A) Hypervisor B) Compiler C) Loader D) Editor Answer: A

UNIT V – HYPERVISOR

1 Introduction to Hypervisor (5 Questions)

1. A hypervisor is A) Application software B) Virtual machine manager C) Compiler D) Editor Answer: B

2. Hypervisor enables A) Single OS only B) Multiple OS on same hardware C) No OS D) Hardware removal Answer: B

3. The main role of hypervisor is A) File management B) Resource allocation to VMs C) Paging D) Swapping Answer: B

4. Hypervisor is also called A) VMM B) OS loader C) Shell D) BIOS Answer: A

5. Hypervisor improves A) Isolation between VMs B) Disk errors C) CPU failure D) RAM damage Answer: A

2 Type 1 Hypervisor (5 Questions)

6. Type 1 hypervisor runs on A) Host OS B) Bare metal C) Application layer D) Browser Answer: B

7. Type 1 hypervisor is also called A) Hosted hypervisor B) Bare-metal hypervisor C) Guest OS D) Container Answer: B

8. Example of Type 1 hypervisor is A) VMware ESXi B) Notepad C) MS Word D) Chrome Answer: A

9. Type 1 hypervisor provides A) Better performance B) Low performance C) No isolation D) No VM Answer: A

10. Type 1 hypervisor directly controls A) Hardware resources B) Files only C) Applications only D) Printer only Answer: A

3 Type 2 Hypervisor (5 Questions)

11. Type 2 hypervisor runs on A) Hardware directly B) Host operating system C) BIOS D) ROM Answer: B

12. Type 2 hypervisor is also called A) Bare-metal B) Hosted hypervisor C) Container D) Microkernel Answer: B

13. Example of Type 2 hypervisor is A) VirtualBox B) ESXi C) Xen (bare metal) D) BIOS Answer: A

14. Type 2 hypervisor has A) Higher overhead B) Lower overhead C) No overhead D) No host OS Answer: A

15. Type 2 hypervisor depends on A) Host OS B) Guest OS C) BIOS only D) Disk only Answer: A

4️⃣ Paravirtualization (5 Questions)

16. Paravirtualization requires A) Modified guest OS B) Unmodified OS C) No OS D) No hypervisor Answer: A

17. In paravirtualization, guest OS communicates via A) Hypercalls B) Disk blocks C) Page faults D) FIFO Answer: A

18. Paravirtualization improves A) Performance B) Disk damage C) CPU failure D) Fragmentation Answer: A

19. Xen initially supported A) Paravirtualization B) Paging C) Scheduling D) Swapping Answer: A

20. Paravirtualization reduces A) Translation overhead B) RAM C) CPU D) Disk space Answer: A

5️⃣ Server Virtualization (5 Questions)

21. Server virtualization allows A) Multiple servers on single hardware B) Single server only C) No OS D) Only desktop OS Answer: A

22. Server consolidation reduces A) Hardware cost B) CPU speed C) RAM D) Disk Answer: A

23. Server virtualization improves A) Resource utilization B) Disk failure C) CPU crash D) Fragmentation Answer: A

24. Data centers widely use A) Server virtualization B) Paging C) Scheduling D) Swapping Answer: A

25. Virtual server is A) Physical server B) VM acting as server C) Hard disk D) BIOS Answer: B

6️⃣ Desktop Virtualization (5 Questions)

26. Desktop virtualization provides A) Remote desktop access B) Disk formatting C) CPU deletion D) RAM removal Answer: A

27. VDI stands for A) Virtual Desktop Infrastructure B) Virtual Disk Interface C) Virtual Data Index D) Variable Desktop Integration Answer: A

28. Desktop virtualization improves A) Centralized management B) Disk damage C) CPU crash D) Fragmentation Answer: A

29. Thin clients are used in A) Desktop virtualization B) Paging C) Swapping D) Scheduling Answer: A

30. Desktop virtualization enhances A) Security B) Disk failure C) CPU idle time D) Memory leak Answer: A

7️⃣ VM Portability & Management (Clones, Templates, Snapshots, OVF) (5 Questions)

31. Snapshot is used to A) Save VM state B) Delete VM C) Increase RAM D) Shutdown CPU Answer: A

32. Template is used for A) Creating multiple VMs B) Deleting OS C) Scheduling D) Paging Answer: A

33. Clone creates A) Copy of VM B) Disk failure C) CPU error D) Memory leak Answer: A

34. OVF stands for A) Open Virtualization Format B) Operating Virtual File C) Online Virtual Format D) Open Variable File Answer: A

35. VM portability allows A) Moving VM across platforms B) Deleting OS C) Removing RAM D) Disk formatting Answer: A

8️⃣ Hot and Cold Cloning (5 Questions)

36. Hot cloning is performed when VM is A) Running B) Powered off C) Deleted D) Idle CPU Answer: A

37. Cold cloning is done when VM is A) Running B) Powered off C) Crashed D) Suspended Answer: B

38. Hot cloning minimizes A) Downtime B) RAM C) CPU D) Disk Answer: A

39. Cold cloning ensures A) Consistency B) CPU deletion C) Disk error D) Fragmentation Answer: A

40. Cloning is mainly used for A) Backup and deployment B) Disk formatting C) Scheduling D) Paging Answer: A

9️⃣ High Availability & Protection (5 Questions)

41. High availability ensures A) Continuous service B) Disk damage C) CPU shutdown D) RAM failure Answer: A

42. Failover mechanism helps in A) Service continuity B) Disk formatting C) Memory leak D) CPU idle Answer: A

43. Backup protects against A) Data loss B) CPU speed C) Disk size D) Paging Answer: A

44. VM migration helps in A) Load balancing B) Disk crash C) RAM removal D) CPU deletion Answer: A

45. Live migration moves VM A) Without stopping it B) After shutdown C) After deletion D) During paging Answer: A

🔟 Lightweight Virtual Machine – Containers / Docker (5 Questions)

46. Container is A) Lightweight virtualization B) Heavy hypervisor C) Physical server D) BIOS Answer: A

47. Docker is a A) Container platform B) Hypervisor C) Scheduler D) Paging system Answer: A

48. Containers share A) Host OS kernel B) Separate kernel C) BIOS D) Hardware directly Answer: A

49. Containers start A) Faster than VMs B) Slower than VMs C) Same as hardware D) Never Answer: A

50. Lightweight virtualization improves A) Deployment speed B) Disk damage C) CPU crash D) RAM failure Answer: A