CHAPTER ONE

1. To access the services of operating system, the interface is provided by the

a) system calls

b) API

c) library

d) assembly instructions

e) dispatch

Answer: A

2. Which one of the following is not true?

a) kernel is the program that constitutes the central core of the operating system

b) kernel is the first part of operating system to load into memory during booting

c) kernel is made of various modules which cannot be loaded in running operating system

d) kernel remains in the memory during the entire computer session

e) kernel is a where the operating system loads into the memory

Answer: C

3. In Unix, which system call creates the new process?

a) fork

b) create

c) new

d) start

e) adjust

Answer: A

4. When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called

a) dynamic condition

b) race condition

c) essential condition

d) critical condition

e) exact condition

Answer: B

5. What is the ready state of a process?

a) when process is scheduled to run after some execution

b) when process is unable to run until some task has been completed

c) when process is using the CPU

d) when a process is using the CPU as well as the memory

e) when the process is done with CPU and moving into the main memory

Answer: A

6. The address of the next instruction to be executed by the current process is provided by the

a) CPU registers

b) program counter

c) process stack

d) pipe

e) cache

Answer: B

7. The objective of multi-programming is to: (choose two)

a) Have some process running at all times

b) Have multiple programs waiting in a queue ready to run

c) To minimize CPU utilization

d) To maximize CPU utilization

e)To control CPU utilization

Answer: A and D

8. If a process is executing in its critical section, then no other processes can be executing in their critical section. This condition is called

a) mutual exclusion

b) critical exclusion

c) synchronous exclusion

d) asynchronous exclusion

e) asymmetric exclusion

Answer: A

9. When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called

a) priority inversion

b) priority removal

c) priority exchange

d) priority modification

e) priority extension

Answer: A

10.If a process fails, most operating system write the error information to a

a) another running process

b) new file

c) log file

d) load file

e) process file

Answer: C

CHAPTER TWO

1. Which shell does not form part of the different shell available to users of UNIX and LINUX system?.....

a. Bourne Shell
b. Korn Shell
c. C Shell
d. Born-Again Shell
e. Fish shell

2. Which operating system function is not helpful to the user

a. Protection and Security
b. I/O interface
c. File-System Manipulation
d. Program Execution
e. User Interface

3. Application developers design programs according to a/an----
   a. Graphic User Interface
   b. Command Line Interface
   c. Application programming Interface
   d. Kernel Processes
   e. System Library

4. System services include the following except:
   a. File-System Manipulation
   b. Accounting
   c. Communications
   d. Application Switching
   e. Error Detection

5. Which of these pair frequently use the command-line Interface
   i. Programmers
   ii. System Administrators
   iii. Power users
   iv. General users

      a. i only
      b. ii and iii
      c. i,ii and iii
      d. i and iii
      e. I,ii,iii and iv

6. ---------- provide an interface to the services made available by an operating system.
   a. System Structure
   b. System calls
   c. User Program
   d. System Program
   e. System Library

7. The Most common API available to application programmer includes
   a. POSIX API and SERVER API
   b. Windows API and Java API
   c. SERVER API and Java API
   d. Windows API and STANDARD API
   e. STANDARD API and POSIX API

8. System calls categories include all the following except……..

a. Device Manipulation
b. Process Control
c. Information Maintenance
d. File Manipulation
e. Generic Processes

9. Which system calls is used to halt program execution normally…….
   a. Exit()
   b. Stop()
   c. End()
   d. Abort()
   e. Terminate()

10. For integrity of the data being shared, operating systems often provide system calls allowing a process to ……shared data.
    a. Rotate
    b. Lock
    c. Time
    d. Prioritize
    e. Index

CHAPTER THREE

Processes Q&A by Michael Selby, 2569114

1. A batch system executes
   a. Tasks
   b. Processes
   c. Jobs
   d. Heap
   e. Stack

2. A time-shared system executes
   a. Tasks
   b. Processes
   c. Heap
   d. Stack

e. Jobs

3. In many respects, jobs, and user programs or tasks are similar and so we call all of them
    a. Heap
    b. Stack
    c. Jobs
    d. Processes
    e. Tasks

4. A _____ is basically a program in execution.
    a. Process
    b. Text section
    c. Stack
    d. Counter
    e. Executable file.

5. A program by itself is not a process. A program is a(n) _____ entity such as a file containing a list of instructions stored on disk.
    a. Active
    b. Passive
    c. Random
    d. Stack
    e. Heap

6. In contrast, a process is a(n)_____ entity, with a program counter specifying the next instruction to execute and a set of associated resources.
    a. Active
    b. Passive
    c. Random
    d. Stack
    e. Heap

7. Although two processes may be associated with the same program, they are nevertheless considered as two _____ execution sequences.
    a. Identical
    b. Separate
    c. Large
    d. Small
    e. Queer

8. In most circumstances, a java execution program executes in a _____.
    a. JVM
    b. JDK
    c. FFK
    d. JJK

e. UFK

Select the best matching answer for the question 9 – 14

a. New
b. Running
c. Waiting
d. Ready
e. Terminated

9. The process waiting to be assigned a processor. D

10. The process is being created. A

11. The process is waiting for some event to occur (such as an I/O completion or reception of a signal). C

12. The process has finished execution. E

13. Instructions are being executed. B

CHAPTER FOUR

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OPERATING SYSTEM

MULTIPLE CHOICE (CHAPTER 4)

1.A thread comprises of a thread ID, a program counter, a register set, and

a) a file
b) a code
c) a stack
d) a heap
e) a data

2.What is the full meaning of RPC?

a) Resource Process Control
b) Remote Program Control
c) Remote Procedure Call
d) Resource Procedure Call
e) Remote Program Control

3.All the following are the benefits of multithreaded programming except

a) Economy
b) Responsiveness
c) Scalability
d) Resource sharing
e) Time sharing

4.In general, there are ……. of parallelism:

a) 4
b) 5
c) 3
d) 6
e) 2

5. The three main thread libraries are in use today:

a) POSIXPthreads, Windows, and Java.
b) POSIXPtreads, Linus and Java
c) POSIXPtreads, Solaris and Java
d) Windows, Linus and Java
e) POSIXPtreads, Solaris and Java

6. When clone() is invoked, it is passed a set of flags that determine how much sharing is to take place between the …….

I. Parent task
II. Child task
III. Root task
IV. Grandparents task
V. Siblings task

a) I, II and IV
b) II, IV and V
c) I and II only
d) I, and III only
e) I, and V only

7. A thread is the basic unit of the …….

a) Kernel
b) Multi-tasking
c) CPU utilization
d) Multicore Programming
e) Parallelism

8. Green threads—a thread library available for

a) Solaris systems
b) Linus systems
c) Windows systems
d) Tru64 Unix systems
e) Be OS systems

9. One variation on the many-to-many model still multiplexes many user level threads to a smaller or equal number of kernel threads but also allows a user-level thread to be bound to a kernel thread. This variation is sometimes referred to as the

a) One-level model
b) Two-level model
c) Three-level model
d) Our-level model
e) Five-model level

10. The acronym APCs stands for

a) Asynchronous procedure calls
b) Asynchronous process calls
c) Asynchronous program calls
d) Asynchronous processes calls
e) Asynchronous procedural calls

CHAPTER FIVE

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CHAPTER FIVE (5)

OPERATING SYSTEM

MULTIPLE CHOICE QUESTIONS

1.Processes can execute either concurrently or…….

a) Serial
b) Parallel
c) Vertical
d) Horizontal
e) Diagonal

2.The CPU scheduler switches rapidly between processes to provide concurrent execution. This means:

a) Two or more processes can execute before another process is scheduled.
b) Before a process can be scheduled, multiple processes must execute first.
c) One process may fully finish executing before another process can be scheduled.
d) **That one process may only partially complete execution before another process is scheduled**.
e) That one process may partially complete execution before another process is scheduled

3. A situation where 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) Atomicity
b) Race condition
c) Producer-consumer problem
d) Process synchronization
e) Process coordination

4. Each process has a segment of code, called a critical section, in which the process may be

i. changing common variables,
ii. updating a table,
iii. writing a file,
iv. deleting a file,
v. renaming a file
vi. saving a file

a) i, ii, and iv
b) iv, v, and vi
c) i, iii, v and vi
d) i, ii and iii
e) ii, iii, iv, v

5. Each process must request permission to enter its critical section. The section of code implementing this request is the

a) critical section
b) remainder section
c) entry section
d) exit section
e) progress section

6. Peterson's solution is restricted to two processes that alternate execution between their

a) exit sections and critical sections
b) remainder sections and exit sections
c) entry sections and progress sections
d) critical sections and progress sections
e) critical sections and remainder sections

7. We use the mutex lock to protect ……and thus prevent …….

a) critical region, process synchronization
b) remainder region, race condition
c) remainder region, process synchronization
d) critical region, race condition
e) entry region, process synchronization

8. If a semaphore value is negative, its magnitude is

a) The number of processes waiting on that semaphore
b) The number of processes waiting for execution
c) The number of processes waiting in the critical section
d) The number of processes waiting in the remainder section
e) The number of processes waiting in the entry section

9. A process that is blocked, waiting on a semaphore S, should be restarted when some other process executes a signal() operation. The process is restarted by a

a) wait()
b) signal()
c) wakeup()
d) turn()
e) flag()

10. A semaphore S is an integer variable that, apart from initialization, is accessed only through two standard atomic operations

a) flag() and turn()
b) wait() and turn()
c) wakeup() and wait()
d) wait() and signal()
e) wait() and turn()

CHAPTER SIX

1. Which module gives control of the CPU to the process selected by the short-term scheduler?
   a) dispatcher
   b) interrupt
   c) scheduler
   d) intruder
   e) bootloader

2. The processes that are residing in main memory and are ready and waiting to execute are kept on a list called
   a) job queue
   b) ready queue
   c) execution queue
   d) process queue
   e) waiting queue

3. The interval from the time of submission of a process to the time of completion is termed as
   a) waiting time
   b) turnaround time
   c) response time
   d) throughput
   e) round robin

4. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?
   a) first-come, first-served scheduling
   b) shortest job scheduling
   c) priority scheduling
   d) last-in, last-out
   e) first-in, last-out

5. In priority scheduling algorithm
   a) CPU is allocated to the process with highest priority
   b) CPU is allocated to the process with lowest priority
   c) equal priority processes cannot be scheduled
   d) lower priority processes are considered first
   e) process are considered randomly

6. In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of
   a) all process
   b) currently running process
   c) parent process
   d) init process
   e) child processes

7. Time quantum is defined in
   a) shortest job scheduling algorithm

b) round robin scheduling algorithm
c) priority scheduling algorithm
d) multilevel queue scheduling algorithm
e) longest job scheduling algorithm

8. Process are classified into different groups in
   a) shortest job scheduling algorithm
   b) round robin scheduling algorithm
   c) priority scheduling algorithm
   d) multilevel queue scheduling algorithm
   e) single queuing scheduling algorithm

9. In multilevel feedback scheduling algorithm
   a) a process can move to a different classified ready queue
   b) classification of ready queue is permanent
   c) processes are not classified into groups
   d) processes are put in groups of two
   e) processes in block state are not considered

10. Which one of the following cannot be scheduled by the kernel?
    a) kernel level thread
    b) user level thread
    c) process
    d) multilevel thread
    e) single level thread

CHAPTER SEVEN

Chapter 7 - Operating System Questions & Answers – Deadlock

1. What is the reusable resource?
a) that can be used by one process at a time and is not depleted by that use
b) that can be used by more than one process at a time
c) that can be shared between various threads
d) none of the mentioned

Answer:a

2. Which of the following condition is required for deadlock to be possible?
a) mutual exclusion
b) a process may hold allocated resources while awaiting assignment of other resources
c) no resource can be forcibly removed from a process holding it
d) all of the mentioned

Answer:d

3. A system is in the safe state if
a) the system can allocate resources to each process in some order and still avoid a deadlock
b) there exist a safe sequence
c) both (a) and (b)
d) none of the mentioned

Answer:c

4. The circular wait condition can be prevented by
a) defining a linear ordering of resource types
b) using thread
c) using pipes
d) all of the mentioned

Answer:a

5. Which one of the following is the deadlock avoidance algorithm?
a) banker's algorithm
b) round-robin algorithm
c) elevator algorithm
d) karn's algorithm

Answer:a

6. What is the drawback of banker's algorithm?
a) in advance processes rarely know that how much resource they will need
b) the number of processes changes as time progresses
c) resource once available can disappear
d) all of the mentioned

Answer:d

7. For effective operating system, when to check for deadlock?
a) every time a resource request is made
b) at fixed time intervals
c) both (a) and (b)
d) none of the mentioned

Answer:c

8. A problem encountered in multitasking when a process is perpetually denied necessary resources is called

a) deadlock
b) starvation
c) inversion
d) aging

Answer:b

9. Which one of the following is a visual (mathematical) way to determine the deadlock occurrence?
a) resource allocation graph
b) starvation graph
c) inversion graph
d) none of the mentioned

Answer:a

10. To avoid deadlock
a) there must be a fixed number of resources to allocate
b) resource allocation must be done only once
c) all deadlocked processes must be aborted
d) inversion technique can be used

Answer:a

CHAPTER EIGHT

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Chapter 8

1. CPU fetches the instruction from memory according to the value of
   a) program counter
   b) status register
   c) instruction register
   d) program status word
   e) the stack
   Answer:a

2. A memory buffer used to accommodate a speed differential is called
   a) stack pointer
   b) cache
   c) accumulator

d) disk buffer
e) swap

Answer:b

3. Which one of the following is the address generated by CPU?
   a) physical address
   b) absolute address
   c) logical address
   d) none of the mentioned
   e) all the mentioned

   Answer:c

4. Run time mapping from virtual to physical address is done by
   a) memory management unit
   b) CPU
   c) PCI
   d) ALU
   e) none of the mentioned

Answer:a

5. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called
   a) fragmentation
   b) paging
   c) mapping
   d) translation
   e) none of the mentioned
   Answer:b

6. The address of a page table in memory is pointed by
a) stack pointer
b) page table base register
c) page register
d) program counter
e) register set

Answer:b

7. Program always deals with
a) logical address

b) absolute address
c) physical address
d) relative address
e) base address

Answer:a

8. The page table contains
a) base address of each page in physical memory
b) page offset
c) page size
d) page id
e) none of the above

Answer:a

9. What is compaction?
a) a technique for overcoming internal fragmentation
b) a paging technique
c) a technique for overcoming external fragmentation
d) a technique for overcoming fatal error
e) a scaling technique

Answer:c

10. Operating System maintains the page table for
a) each process
b) each thread
c) each instruction
d) each address
e) each execution

Answer:a

CHAPTER NINE

CHAPTER NINE-VIRTUAL MEMORY

1. The logical view of how process is stored in memory is the
   a) Virtual address
   b) Virtual memory

c) Virtual address space
d) Virtual memory space
e) Virtual memory address

2. In Virtual memory systems ,the type of swapping in which pages of data are not copied from disk to RAM until they are needed is
a) Demand paging
b) Demand segmentation
c) Demand swapping
d) Paging
e) Segmentation
3. Swapper that deals with pages is a
a) Pager
b) Segmentation
c) Demand paging
d) Segmentation
e) Demand swapping
4. _____ never swaps a page into memory unless that page will be needed.
a) Wait paging
b) Pager
c) Lazy paging
d) Lazy swapper
e) Swapper
5. The type of exception raised by computer hardware when a running program accesses a memory page that is not currently mapped by MMU into the virtual address space of a process is
a) Page fault
b) Memory resident
c) Pure demand
d) Instruction restart
e) Segmentation
6. _____ allows both parent and child processes to initially share the same pages in memory
a) Zero-fill-on-demand
b) Pool
c) Page fault
d) Copy-on-Write
e) Write
7. Which of the following is not a stage in demand paging(Worse Case)
a) Trap to the operating system
b) Save the user registers and process state
c) Allow process state to share memory
d) Determine that the interrupt was a page fault
e) Check that the page reference was legal and determine the location of the page on the disk

8. Prevent _____ of memory by modifying page-fault service routine to include page replacement
    a) Pager
    b) Dirty bit
    c) Segmentation
    d) Modify
    e) **Over-allocation**
9. Use _____ to reduce overhead of page transfers – only modified pages are written to disk
    a) **Modify** (**dirty**) **bit**
    b) Over-allocation
    c) Segmentation
    d) Transfer bit
    e) Overhead bit
10. Frame-allocation algorithm determines
        i. How many frames to give each process
        ii. the reference string
        iii. lowest page-fault
        iv. Which frames to replace
        v. Replace page
    a) I and II
    b) I and IV
    c) I,IV and V
    d) IV only
    e) I,II and III

CHAPTER TEN

Chapter 10

1. Logically, the file system can be viewed as consisting of how many parts?
    a. 2
    b. 3
    c. 5
    d. 4
    e. 1

2. The rate at which data flows between the drive and the computer in a magnetic disk is ……
    a. Write speed
    b. Memory buffer
    c. Transfer rate

d. Random access time
e. Read only time

3. The **……** is the time for the disk arm to move the heads to the cylinder containing the desired sector.
   a. seek time
   b. transfer speed
   c. rotational latency
   d. bandwidth
   e. starvation

4. The …….. services all requests close to the head before moving the read write head far away to service other requests.
   a. First come First Serve
   b. Last In First Out (LIFO)
   c. shortest- seek- time -first (SSTS) algorithm
   d. Shortest-job-first algorithm

5. RAID stands for ……
   a. Read All Independent disks
   b. Redundant Array of Idle Disks
   c. Redundant Array of Independent Disks
   d. Removable Array of Independent Disks
   e. Removable independent disk

6. ……. is also known as memory-style error-correcting code (ECC) organization.
   a. RAID 2
   b. RAID 1
   c. RAID 3
   d. RAID 6
   e. RAID 5

7. Splitting the bits of bytes of huge data across multiple disks is known as …….
   a. Data splitting
   b. Bit-splitting
   c. Bit -level stripping
   d. Byte -level stripping
   e. Byte splitting

8. The most widely used non volatile disk for secondary storage is the ……..
   a. Magnetic disk
   b. Optical disk
   c. Vacuum tube
   d. Magnetic tape

9. The OS uses ……..as an optional memory to support the RAM.
    a. Logical Drive
    b. Primary partition
    c. Swap Area
    d. Cache memory
    e. System reserved

10. When a hard disk is partitioned, the ……..contains the operating system files and the device drivers.
    a. Boot partition
    b. Secondary partition
    c. Swap area
    d. Master Boot Record
    e. Primary Partition