GROUP ASSIGNMENT 3

OBJECTIVE QUESTIONS FOR CHAPTERS 1-10

GROUP 9 | OPERATING SYSTEMS | October 2, 2017

CHAPTER ONE: INTRODUCTION

1. A program that manages a computer's hardware and also provides a basis for application programs and acts as an intermediary between the computer user and the computer hardware is a/an.............................
   A. systems
   B. application programs
   C. operating systems
   D. control program
   E. central processing unit

   ANSWER=C

2. A/an .... Manages the execution of user programs to prevent errors and improper use of the computer.
   A. Operating systems
   B. CPU
   C. Resource allocator
   D. Control program
   E. Hardware

   ANSWER=D

3. A set of software frameworks that provides additional services to application developers is ....
   A. CPU
   B. Middleware
   C. Applications programs
   D. Systems
   E. Mobile

   ANSWER=B

4. A computer system consists of one or more CPUs and a number of device controllers connected through a common ....that provides access to shared memory.
   A. Kernel
   B. Network
   C. Bus
   D. Drive
   E. Middleware

   ANSWER=C

5. The occurrence of an event is usually signaled by a/an...................... from either the hardware or the software.
   A. Interrupt
   B. System call
   C. Monitor call
   D. Bus
   E. System daemons

   ANSWER=A

6. Software may trigger an interrupt by executing a special operation called a/an...........................
   A. System daemons
   B. Kernel
   C. Interrupt vector
   D. Vector
   E. System call

   ANSWER=E

7. A........................... loses its contents when the power to the device is removed.
   A. Nonvolatile
   B. Interrupt
   C. Ram
   D. Volatile
   E. Rom

   ANSWER=D

8. .... Can be installed to improve performance where a large disparity in access time or transfer rate exists between two components.
    A. Drivers
    B. Trap
    C. Cores
    D. Caches
    E. Exceptions

    ANSWER=D

9. If several jobs are ready to be brought into memory, and if there is not enough room for all of them, then the system must choose among them. Making this decision involves job scheduling
    A. Interactive
    B. Multitasking
    C. Clustering
    D. Parallelization
    E. Job scheduling

    ANSWER=E

10. A/an............................... Is a software-generated interrupt caused either by an error (for example, division by zero or invalid memory access) or by a specific request from a user program that an operating-system service be performed.
    A. Trap
    B. Process
    C. Loop
    D. Program counter
    E. Scheduling

    ANSWER=A

CHAPTER TWO: OPERATING –SYSTEM STRUCTURES

1. On systems with multiple command interpreters to choose from, the interpreters are known as
   A. Kernels
   B. Shells
   C. Command line
   D. Schedulers
   E. Interpreter

   ANSWER=B

2. The main function of the command interpreter is to
   A. Provide similar functionality as the shells
   B. Get and execute the next user-specified commands
   C. Define the resources to be allocated
   D. Run when a job is initiated
   E. None of the above

   ANSWER=B

3. Run-time support system is a system provided by
   A. System programs
   B. Processes
   C. Mostly written call routines
   D. System call interfaces
   E. Kernel

   ANSWER=D

4. A programmer accesses an API via
   A. A library of codes
   B. Shells
   C. Schedulers
   D. Command line
   E. Interpreter

   ANSWER=A

5. In a standard API, on a successful read, the number of bytes is
    A. Executed
    B. Discarded
    C. Returned
    D. Truncated
    E. Re-used

    ANSWER=C

6. Which of the following is not a category of system calls?
    A. Process control
    B. Maintainance
    C. File manipulation
    D. Information manipulation
    E. Protection

    ANSWER=D

7. In process control, the dump is written to a disk and examined by
    A. A debugger
    B. A bug
    C. An interpreter
    D. Cache memory
    E. Kernel

    ANSWER=A

8. System programs are also known as
    A. System calls
    B. System resources
    C. Threads
    D. System utilities
    E. Programs

    ANSWER=D

9. If a process fails, most operating systems write the error information to a
    A. Cache
    B. Debugger
    C. Script
    D. Text file
    E. Log file

    ANSWER=E

10. The facility that dynamically adds probes to a running system, both in user processes and in the kernel is called
   A. PTrace
   B. QTrace
   C. FTrace
   D. STrace
   E. Dtrace

   ANSWER=E

CHAPTER THREE: PROCESSES

1. Which among the following is not a process manager function?
   A. Implements CPU sharing
   B. Must allocate resources to processes in conformance with certain policies

   C. Implements process synchronization and inter-process communication
   D. Implements deadlock strategies and protection mechanisms

   E. To help people to find errors in operating-system behavior.

   ANSWER=E

2. A process generally also includes the process stack which contains temporary data such as the following except;
   A. Function parameters
   B. Return addresses
   C. Global variables
   D. Local variables
   E. Stack

   ANSWER=C

3. When a process is in the new state what does it mean?
   A. The process is been created
   B. Instructions are been executed
   C. The process is waiting for some event to occur
   D. The process is waiting to be assigned a processor
   E. The process has finished execution

   ANSWER=A

4. Information about a process is maintained in a _____.
   A. Stack
   B. Translation lookaside buffer
   C. Process control block
   D. Process manager function
   E. Program control block

   ANSWER=C

5. . A program at the time of executing is called _____.
   A. Dynamic program
   B. Static program
   C. Binded program
   D. Process
   E. Stack
   ANSWER=D

6. A process said to be in _____ state if it was waiting for an event that will never occur.
   A. Safe
   B. Unsafe
   C. Starvation
   D. Deadlock
   E. Ready
   ANSWER=D

7. The removal of process from active contention of CPU and reintroduce them into memory later is known as _____.
   A. Interrupt
   B. Swapping
   C. Signal
   D. Thread
   E. Context switch
   ANSWER=B

8. Which is not the state of the process?
   A. Blocked
   B. Running
   C. Ready
   D. Privileged
   E. New

   ANSWER=D

9. The state of a process after it encounters an I/O instruction is _____.
   A. Ready
   B. Waiting
   C. Idle
   D. Running
   E. New

ANSWER=B

10. The collection of processes on the disk that is waiting to be brought into memory for execution forms the _____
    A. Ready queue
    B. Device queue
    C. Input queue
    D. Priority queue
    E. Privileged queue

    ANSWER=C

CHAPTER FOUR: THREADS

1. Which one of the following is not shared by threads?
   A. Stack
   B. Program counter
   C. A and B
   D. Time
   E. None of the above

   ANSWER=C

2. Multithreading refers to ability of an operating system to support multiple
   A. Execution
   B. Updating
   C. Completion
   D. None of the above
   E. All of the above

   ANSWER=A

3. User threads are supported above kernel and managed without
   A. Registers
   B. Memory
   C. Operating systems
   D. Kernel support
   E. None of the above

   ANSWER=D

4. A thread is....
   A. Lightweight process where context switch is low
   B. Lightweight process where context switch is high
   C. Used to speed up paging
   D. Used in deadlocks
   E. A and B

   ANSWER=A

5. The kernel is _____ of user threads.
   A. A part
   B. Unaware
   C. Aware
   D. The creator
   E. The controller

   ANSWER=B

6. Because the kernel thread management is done by the Operating System itself
   A. Kernel threads are easier to manage as well as create then user threads
   B. Kernel threads are faster to create than user threads
   C. Kernel threads are slower to create than user threads
   D. C and B
   E. None of the above

   ANSWER=C

7. If a kernel thread performs a blocking system call, _____.
   A. The kernel must schedule another thread of the same application on a different processor.
   B. The kernel must schedule another thread of a different application for execution.
   C. The kernel cannot schedule another thread in the same application for execution.
   D. The kernel can schedule another thread in the application for execution.
   E. None of the above

   ANSWER=D

8. The register context and stacks of a thread are reallocated when the thread
   A. Terminates
   B. Spawns
   C. Blocks
   D. Unblocks
   E. Blocks and Spawns

   ANSWER=A

9. The jacketing technique is used to
   A. The jacketing technique is used to
   B. Create a new thread
   C. Communicate between threads
   D. Convert a blocking system call into nonblocking system call
   E. None of the above

   ANSWER=D

10. A process can be
    A. Single thread
    B. Multithreaded
    C. All of the above
    D. None of the above
    E. B only

    ANSWER=C

CHAPTER FIVE: PROCESS SYNCHRONIZATION

1. .... Is 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
   A. Race factor
   B. Race condition
   C. Conditional race
   D. Concurrency
   E. Conditional factor

   ANSWER=B

2. To guard against the phenomenon in 1. above, only ...... can be manipulating the ....
   A. Two processes, counter
   B. One counter, process
   C. One process, counter
   D. Thread, counter
   E. One process, thread

   ANSWER=C

3. Each process has an important segment of code known as the ....
   A. Critical Section
   B. Critical State
   C. Code Segment
   D. Process code
   E. Code section

   ANSWER=A

4. A typical process has ... sections of code
   A. 5
   B. 7
   C. 9
   D. 4
   E. 2

   ANSWER=D

5. A solution to the critical-section problem must have the following requirements except
   A. Progress
   B. Shared memory
   C. Mutual exclusion
   D. Bounded waiting
   E. All of the above

   ANSWER=B

6. Peterson's solution is a ……. Solution to the critical-solution problem
   A. Hardware
   B. Kernel mode
   C. User mode
   D. Software
   E. Personal mode

   ANSWER=D

7. A semaphore is a variable that provides ways for processes to …….. their activities
   A. Synchronize
   B. Lock
   C. Integrate
   D. Record
   E. Simulate

   ANSWER=A

8. ………… is a situation where two or more processes are waiting indefinitely for a resource
   A. Locks
   B. Deadlock
   C. Pipe
   D. Lockdown
   E. Pipe lock

   ANSWER=B

9. All are problems of synchronization with the exception of
   A. Bounded-Buffer problem
   B. Readers-Writers problem
   C. Dining-Philosophers problem
   D. The Cannibals problem
   E. Dining-buffer problem

   ANSWER=D

10. ..... provide a synchronization mechanism for sharing abstract data types
    A. Semaphores
    B. Mutex locks
    C. Monitors
    D. Spinlocks
    E. deadlocks

    ANSWER=C

CHAPTER SIX: CPU SCHEDULING

1. 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. Processes queue
   E. Waiting queue

   ANSWER=B

2. 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. Process time

   ANSWERS=B

3. Which module gives control of the CPU to the process selected by the short-term scheduler?
   A. Dispatcher
   B. Interrupt
   C. Scheduler
   D. All of the above
   E. None of the above

   ANSWER=A

4. Which one of the following cannot be scheduled by the kernel?
   A. Kernel level thread
   B. User level thread
   C. Process
   D. None of the above
   E. B and A

   ANSWER=B

5. The FIFO algorithm :
   A. first executes the job that came in last in the queue
   B. first executes the job that came in first in the queue
   C. first executes the job that needs minimal processor
   D. first executes the job that has maximum processor needs
   E. None of the above

   ANSWER=B

6. The strategy of making processes that are logically runnable to be temporarily suspended is called
   A. Non preemptive scheduling
   B. Preemptive scheduling
   C. Shortest job first
   D. First come First served
   E. Round robin

   ANSWER=B

7. There are 10 different processes running on a workstation. Idle processes are waiting for an input event in the input queue. Busy processes are scheduled with the Round-Robin timesharing method. Which out of the following quantum times is the best value for small response times, if the processes have a short runtime, e.g. less than 10ms?
   A. tQ = 15ms
   B. tQ = 40ms
   C. tQ = 45ms
   D. tQ = 50ms
   E. tQ = 30ms

   ANSWER=A

8. Under multiprogramming, turnaround time for short jobs is usually _____ and that for long jobs is slightly _____.
   A. Lengthened; Shortened
   B. Shortened; Lengthened
   C. Shortened; Shortened
   D. Unchanged; Unchanged
   E. Shortened; Unchanged

   ANSWER=B

9. The FCFS algorithm is particularly troublesome for _____.
   A. time sharing systems
   B. multiprogramming systems
   C. multiprocessor systems
   D. Operating systems
   E. Database systems

   ANSWER=B

10. 'Aging' is :
   A. keeping track of cache contents
   B. keeping track of what pages are currently residing in memory
   C. keeping track of how many times a given page is referenced
   D. Increasing the priority of jobs to ensure termination in a finite time
   E. None of the above

   ANSWER=D

CHAPTER SEVEN: DEADLOCKS

1. A process requests resources; if the resources are not available at that time, the process enters a waiting state. Sometimes, a waiting process is never again able to change state, because the resources it has requested are held by other waiting processes. This situation is known as………
   A. Traffic
   B. Deadlock
   C. Semaphore
   D. Mutex
   E. Steady

   ANSWER=B

2. A process may utilize a resource in how many sequences?
   A. 2
   B. 3
   C. 4
   D. 5
   E. 6

   ANSWER=B

3. When is a set of processes said to be in a deadlocked state?
   A. When one process in the set is requesting for an event
   B. When one process in the set finishes executing
   C. When every process in the set finishes executing
   D. When every process in the set is waiting for an event that can be caused only by another process in the set
   E. None of the above

   ANSWER=D

4. For effective operating system, when is it advisable 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 above
   E. Never

   ANSWER=C

5. To avoid deadlock...
   A. Inversion technique can be used
   B. Resource allocation must be done only once
   C. All deadlocked processes must be aborted
   D. There must be a fixed number of resource to allocate
   E. All of the above

   ANSWER=D

6. The number of resources requested by a process ....
   A. Must be equal to the number of resources available in the system
   B. Must always be less than the total number of resources available in the system
   C. Must exceed the total number of resources in the system
   D. Must not exceed the total number of resources available in the system.
   E. A and B

   ANSWER=D

7. To ensure no pre-emption, if a process is holding some resources and requests another resource that cannot be immediately allocated to it,
   A. Then the process waits for the resources to be allocated to it
   B. The process keeps sending requests until the resource is allocated to it
   C. Then all resources currently been held are pre-empted
   D. The process resumes executing without the resource being allocated to it
   E. None of the above

   ANSWER=C

8. All the following are examples of;
   Request(), Release(), Open(), Close(), Allocate(), Free(), Wait(), Signal(), Acquire() and Release()
   A. System calls
   B. Mutex functions
   C. Operation calls
   D. Functions
   E. System functions

   ANSWER=A

9. A deadlock situation can arise if all the following conditions hold simultaneously in a system except
   A. Mutual exclusion
   B. Resource allocation
   C. Hold and wait
   D. Circular wait
   E. None of the above

   ANSWER=B

10. To ensure that deadlock never occurs the system can either use a deadlock-prevention or .... scheme
    A. Deadlock security
    B. Deadlock-avoidance
    C. Deadlock-resistance
    D. Anti-deadlock
    E. Deadlock break

    ANSWER=B

CHAPTER EIGHT: MAIN MEMORY

1. Memory consists of a large number of array of bytes, each with its own_____
   A. Address
   B. Name
   C. Program counter
   D. Register
   E. Instructions

   ANSWER=A

2. The CPU fetches instructions from memory according to the value of the_____
   A. Swap memory
   B. Program counter
   C. Registers
   D. System bus
   E. Keyboard input

   ANSWER=B

3. Other programs linked before the new library was installed will continue using the older library, this system is known as_____
   A. Linked libraries
   B. System libraries
   C. Shared libraries
   D. Swapped libraries
   E. Local libraries

   ANSWER=C

4. An address generated by the CPU is commonly referred to as a _____
   A. Logical address
   B. MAC address
   C. IP address
   D. Physical address
   E. DNS address

   ANSWER=A

5. An address seen by the memory unit that is, the one loaded into the memory-address register of the memory is commonly referred to as a_____
   A. Physical address
   B. MAC address
   C. IP address
   D. DNS address
   E. Logical address
   ANSWER=A

6. What is the memory from 1K - 640K called?
   A. Extended memory
   B. Normal memory
   C. Low memory
   D. Fixed memory
   E. Conventional memory
   ANSWER=A

7. Virtual memory is _____.
   A. An extremely large main memory
   B. An extremely large secondary memory
   C. An illusion of extremely large main memory
   D. A type of memory used in super computers
   E. D and A
   ANSWER=C

8. One solution to the problem of external fragmentation is_____
   A. Compaction
   B. Swapping
   C. Fragmentation
   D. CPU utilization
   E. Virtualization
   ANSWER=A

9. The run-time mapping from virtual to physical addresses is done by a hardware device called the
   A. Memory management unit(MMU)
   B. Memory addressing unit
   C. Fragmentation
   D. Virtualization
   E. Conventional memory

   ANSWER=A

10. The_____ holds the smallest legal physical memory address;
    A. Base register
    B. Limit register
    C. Full register
    D. Address register
    E. Local register

    ANSWER=A

CHAPTER NINE: VIRTUAL MEMORY

1. Which Unit is responsible for mapping logical pages to physical page frames in memory
   A. Memory management unit
   B. Memory frame manager
   C. Frame-pages manager
   D. Memory scheduler
   E. Memory framing

   ANSWER=A

2. In virtual memory management Heaps are allow to grow .... As used for ......
   A. Upward, successive function calls
   B. Downward, successive function calls
   C. Upward, dynamic memory allocation
   D. Downward, dynamic memory allocation
   E. Upward and downward, dynamic memory allocation

   ANSWER=C

3. In virtual memory management stacks are allow to grow .... through ......
   A. Upward, successive function calls
   B. Downward, successive function calls
   C. Upward, dynamic memory allocation
   D. Downward, dynamic memory allocation
   E. Upward and downward, dynamic memory allocation

   ANSWER=B

4. Virtual address spaces that include holes are known as .... address spaces
   A. Pits
   B. Free
   C. Empty
   D. Sparse
   E. Null

   ANSWER=D

5. A page fault causes the following sequence to occur except
   A. Trap to the operating system
   B. Save the user registers and process states
   C. Determine that the interrupt was a page fault
   D. Determine that the interrupt was from the disk
   E. Execute the page as required

   ANSWER=E

6. Effective access time =
   A. (1-p)*ma+p*page fault time
   B. (1-ma)*ma+p* page fault time
   C. (1-p)*ma+1* page fault time
   D. (2-p)*ma+p* page fault time
   E. (1-p)*ma+2p* page fault time

   ANSWER=A
7. In any case, we are faced with this major components of the page-fault service time:
   I.   Service the page-fault interrupt
   II.   Read in the page
   III.   Wait for the CPU to be allocated to this process again
   IV.   Restart the process
   V.   OS restart
           A. I and II only
           B. I,II and III only
           C. II,II and IV only
           D. I,II and IV only
           E. IV and V only

   ANSWER=C
8. The technique which works by allowing the parent and child processes initially to share the same pages is known as
   A. Pool
   B. Anonymous memory
   C. Demand paging
   D. Copy-on-write
   E. Zero-fill-on-demand

   ANSWER=D
9. Systems in which memory access times vary significantly are known collectively
   A. Equal memory access allocation
   B. Proportional memory access allocation
   C. Non-uniform memory access
   D. Global replacement and local replacement memory access
   E. Thrashing memory access

   ANSWER=C

10. which of the following is a reason why Kernel memory is often allocated from a free-memory pool different from the list used to satisfy ordinary user-mode processes
    A. The kernel requests memory for data structures of varying sizes, some of which are less than a page in size
    B. Pages allocated to user-mode processes necessarily have to be in contiguous physical memory.
    C. The kernel does not request for memory data structures of varying sizes, some of which are more than a page in size
    D. No memory is wasted due to fragmentation
    E. Memory requests can be satisfied quickly

    ANSWER=A

CHAPTER TEN: MASS STORAGE STRUCTURE

1. ....is the rate at which data flows within the computer and the drive.
   A. Random Access Time
   B. Positioning time
   C. Rational latency
   D. Transfer rate
   E. Seek time

   ANSWER=D

2. The positioning time consist of two parts, namely,....................and.........................
   A. Random access time and seek time
   B. Seek time and rational latency
   C. Head crash and seek time
   D. Rational latency and head crash
   E. None of the above

   ANSWER=B

3. All of the following statements about solid-state disks are true except
   A. Solid-state disks have no moveable parts
   B. Solid-state disks have longer life spans than hard disks
   C. They have no seek time and rational latency
   D. They consume more power than the traditional disks
   E. Solid-state disks are non-volatile memories used as hard disks

   ANSWER=D

4. The amount of time required to read a block of data from a disk into memory is composed of seek time, rotational latency, and transfer time. Rotational latency refers to
   A. the time it takes for the platter to make a full rotation
   B. the time it takes for the platter to rotate the correct sector under the head
   C. The time it takes for the read-write head to move into position over the appropriate track
   D. B and C
   E. None of the above

   ANSWER=A

5. Which RAID level refers to disk mirroring?

    A. 0
    B. 1
    C. 2
    D. 3
    E. 4
    ANSWER=B

6. Memory which loses contents because of power cut is classified as
    A. Volatile memory
    B. Nonvolatile memory
    C. Tertiary memory
    D. Traditional memory
    E. Secondary memory

    ANSWER=A

7. Storage capacity of computer system is measured in
    A. Megabytes
    B. Kilobytes
    C. Terabytes
    D. Gigabytes
    E. All of the above
    ANSWER=E

8. Storage media that is operated directly from computer's central processing unit is considered as
    A. Tertiary storage
    B. Primary storage
    C. Secondary storage
    D. Central storage
    E. Processor memory
    ANSWER=B

9. Kind of memories that use an array of platters of CD-ROM must be loaded on demand into drives are classified as
    A. Memory databases
    B. Main memory
    C. Optical jukebox memories
    D. Flash memory
    E. Array memory

    ANSWER=C

10. Type of memories used in MP3 players and cameras are called
    A. Mass storage
    B. Main memory
    C. Memory databases
    D. Flash memory
    E. Virtual memory

    ANSWER=D

LIST OF MEMBERS

NAME	INDEX NUMBER
• Agyei-Antwi David	2561314
• Akinlabi Lateef	1127613
• Ankrah Joseph	2561914
• Baidoo Adubea Mabel	2570214
• Bonsu Shadrack	2563514
• Dadzie Ebenezer Geoffery	2563914
• Dwamena Sandra	2564714
• Fuakye-Akyempim Charles	2565014
• Gyawu Kofi Baffour	2565114
• Osei Asibey Kennedy	2567614