

[My Courses](#) / [CSC041502-F21R-5046](#) / [Final Exam](#) / [Final Exam - Part 1](#)

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Time taken 24 mins 25 secs

Grade 47.00 out of 50.00 (94%)

Question **1**

Complete

1.00 points out of 1.00

Memory compression is a useful alternative to paging

Select one:

- ☐ a. when the compression algorithm is can achieve the best possible compression ratio.
- ☐ b. when the speed of the compression algorithm fastest.
- ☐ c. when the system has slow magnetic disks but not faster SSDs.
- ☒ d. even when the system has faster SSDs.

Question **2**

Complete

1.00 points out of 1.00

WAFL (write-anywhere file layout)

Select one:

- ☒ a. is a distributed file system
- ☐ b. can provide files via NFS, but not via CIFS
- ☐ c. is a file system dedicated to single user operating systems
- ☐ d. cannot provide files via NFS

Question **3**

Complete

1.00 points out of 1.00

_____ is the algorithm implemented on most systems.

Select one:

- ☐ a. Most frequently used
- ☒ b. LRU
- ☐ c. FIFO
- ☐ d. Least frequently used

Question **4**

Complete

1.00 points out of 1.00

A file may be associated with several images at the same time in:

Select one:

- ☐ a. file systems consistent with Windows Semantics.
- ☒ b. file systems consistent with Session Semantics.
- ☐ c. file systems consistent with UNIX Semantics.
- ☐ d. file systems consistent with NFS (Network File System) Semantics.

Question **5**

Complete

1.00 points out of 1.00

All processes in UNIX first translate to a zombie process upon termination.

Select one:

- ☒ a. True
- ☐ b. False

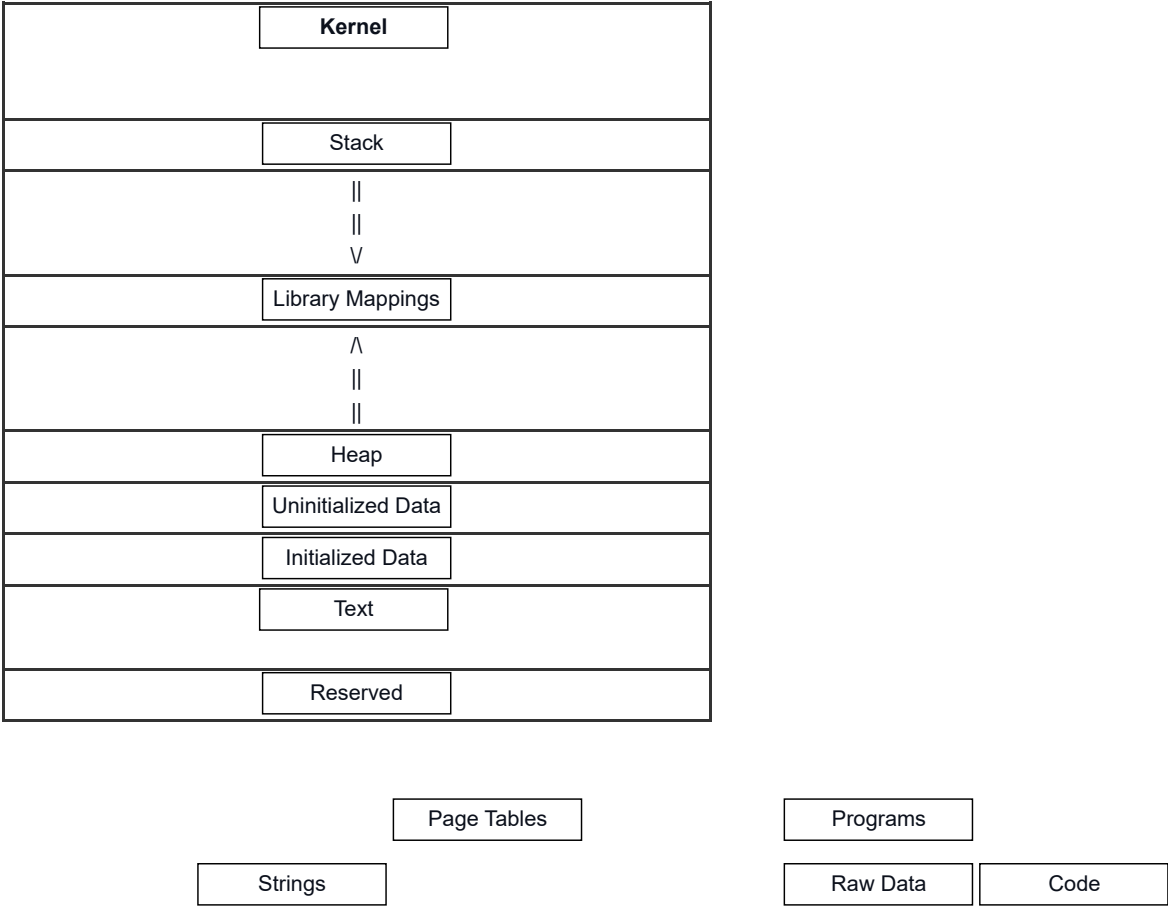
Question **6**

Complete

1.00 points out of 1.00

Correctly fill in the diagram to show the Linux process memory layout.

Linux Process Memory Layout



Question **7**

Complete

1.00 points out of 1.00

Which algorithm evaluation method yields the best results?

Select one:

- ☐ a. Queueing Models
- ☐ b. Deterministic Evaluation
- ☐ c. Implement new scheduler and test in real systems
- ☒ d. Simulations

Question 8

Complete

1.00 points out of 1.00

Hashed page tables are commonly used when handling addresses larger than 32 bits.

Select one:

- ☒ a. True
☐ b. False

Question 9

Complete

1.00 points out of 1.00

Assuming that pages are 128 integers (words) in size, consider the C program to initialize every element of a 128x128 integer array to zero.

```
int i, j;
int [128][128] data;
for (j = 0; j < 128; j++)
    for (i = 0; i < 128; i++)
        data[i][j] = 0;
```

There will be page faults as a result if there is only one frame available. But, changing the last line to will result in only page faults. Thus it is important for a programmer to understand how memory is laid out.

<input type="text" value="4096"/>	<input type="text" value="data[i][i+j] = 0;"/>	<input type="text" value="2048"/>	<input type="text" value="32768"/>	<input type="text" value="256"/>	<input type="text" value="data[i+j] = 0;"/>	<input type="text" value="1024"/>
<input type="text" value="512"/>	<input type="text" value="8192"/>					

Question 10

Complete

1.00 points out of 1.00

13. Systems that do not permit access to the files of another user do not need protection

Select one:

- ☒ a. True
☐ b. False

Question 11

Complete

1.00 points out of 1.00

One important principle is the separation of policy from mechanism.

Select one:

- ☒ a. True
☐ b. False

Question **12**

Complete

1.00 points out of 1.00

_____ is a mobile operating system designed for the iPhone and iPad.

Select one:

- ☒ a. iOS
- ☐ b. UNIX
- ☐ c. Mac OS X
- ☐ d. Android

Question **13**

Complete

1.00 points out of 1.00

In a swap map in Linux

Select one:

- ☒ a. counter value 5 indicates that the page slot is occupied and the page is shared by five processes.
- ☐ b. counter value -1 indicates that the page slot is available.
- ☐ c. counter value 0 indicates that the page slot is occupied by a swapped page.
- ☐ d. counter value -5 indicates that the page slot was occupied by a page that was shared by five processes, and is now available.

Question **14**

Complete

1.00 points out of 1.00

Which of the following options to deliver signals in multithreaded program should be applied to a synchronous signal?

Select one:

- ☐ a. deliver the signal to every thread in the process
- ☐ b. assign a specific thread to receive all signals for the process
- ☒ c. deliver the signal to the thread to which the signal applies
- ☐ d. all of the other answers
- ☐ e. deliver the signal to certain threads in the process

Question **15**

Complete

1.00 points out of 1.00

moving the file pointer to a specified position

best describes the action of seek.

Question **16**

Complete

1.00 points out of 1.00

Which of the following system calls is used to let the parent process create a child process?

Select one:

- ☐ a. abort();
- ☐ b. wait();
- ☒ c. fork();
- ☐ d. exec().

Question **17**

Complete

1.00 points out of 1.00

In Pthreads, a parent uses the `pthread_join()` function to wait for its child thread to complete. What is the equivalent function in Win32?

Select one:

- ☒ a. WaitForSingleObject()
- ☐ b. wait()
- ☐ c. win32_join()
- ☐ d. join()

Question **18**

Complete

1.00 points out of 1.00

Which of the following is a user interface where human fingers slide across the screen or press buttons to select choices?

Select one:

- ☐ a. command line
- ☐ b. voice control
- ☒ c. touch screen
- ☐ d. graphical user interface

Question **19**

Complete

1.00 points out of 1.00

Every object in Java has associated with it a single lock.

Select one:

- ☒ a. True
- ☐ b. False

Question **20**

Complete

1.00 points out of 1.00

Which of the following are efforts to towards developing scalable, efficient tools that address the demands of concurrent programming?

Select one:

- ☐ a. improving the performance of existing libraries and APIs
- ☐ b. designing compilers that generate more efficient code
- ☒ c. all of the other answers
- ☐ d. developing languages that provide support for concurrent programming

Question **21**

Complete

1.00 points out of 1.00

An address generated by a CPU is referred to as a ____.

Select one:

- ☐ a. post relocation register address
- ☐ b. physical address
- ☐ c. Memory-Management Unit (MMU) generated address
- ☒ d. logical address

Question **22**

Complete

0.00 points out of 1.00

Which of the following is an inter-process communication that requires two processes share memory?

Select one:

- ☐ a. all of the other answers
- ☐ b. shared memory
- ☐ c. socket communication
- ☒ d. message passing

Question **23**

Complete

1.00 points out of 1.00

There is no universally accepted definition of an operating system.

Select one:

- ☒ a. True
- ☐ b. False

Question **24**

Complete

1.00 points out of 1.00

The instruction that causes a page fault needs to be re-executed after the fault has been handled.

Select one:

- ☒ a. True
☐ b. False

Question **25**

Complete

1.00 points out of 1.00

The logical file system module includes the free-space manager.

Select one:

- ☐ a. True
☒ b. False

Question **26**

Complete

1.00 points out of 1.00

Which of the following may cause a liveness failure?

Select one:

- ☒ a. all of the other answers
☐ b. an infinite loop
☐ c. a busy waiting loop
☐ d. a deadlock

Question **27**

Complete

1.00 points out of 1.00

Replacement question: With segmentation in IA-32 architecture, a logical address consists of ____.

Select one:

- ☒ a. segment number, GDT or LDT indicator, protection and offset
☐ b. segment number, page number, GDT/LDT, protection and offset
☐ c. segment number, page number and offset
☐ d. segment number and offset

Question **28**

Complete

1.00 points out of 1.00

The single benefit of a thread pool is to control the number of threads.

Select one:

- ☐ a. True
- ☒ b. False

Question **29**

Complete

0.00 points out of 1.00

A Flash Translation Layer

Select one:

- ☐ a. tracks which physical block contains only invalid pages.
- ☐ b. translates user data to a format that can be written on the NVM.
- ☒ c. tracks which physical block contains only valid pages.
- ☐ d. tracks which physical block contains the most number of consecutive invalid pages.

Question **30**

Complete

1.00 points out of 1.00

In a multithreaded server architecture, which of the following is used to service a new user request?

Select one:

- ☒ a. a new created thread
- ☐ b. the same process for prior users
- ☐ c. none of the other answers
- ☐ d. a new created process

Question **31**

Complete

1.00 points out of 1.00

What is the degree of multiprogramming for a single-processor system?

Select one:

- ☐ a. 0
- ☐ b. 3
- ☐ c. 2
- ☒ d. 1

Question **32**

Complete

1.00 points out of 1.00

Reentrant code is easier to share when paging is used, because

Select one:

- ☐ a. All of the above.
- ☐ b. each process can modify that code its own way.
- ☒ c. the code doesn't change during execution.
- ☐ d. the code changes are identical for each process.

Question **33**

Complete

1.00 points out of 1.00

The CPU catches the interrupt and _____ it to the interrupt handler

Select one:

- ☒ a. dispatches
- ☐ b. clears
- ☐ c. raises
- ☐ d. catches

Question **34**

Complete

1.00 points out of 1.00

Indexed allocation

Select one:

- ☐ a. supports direct access
- ☐ b. none of the other answers
- ☐ c. does not suffer from external fragmentation.
- ☒ d. all of the other answers

Question **35**

Complete

1.00 points out of 1.00

Which of the following is a software-based solution to the critical-section problem?

Select one:

- ☐ a. test_and_set
- ☐ b. compare_and_swap
- ☒ c. Peterson's solution
- ☐ d. all of the other answers

Question **36**

Complete

1.00 points out of 1.00

What pointer is used for writing a file?

Select one:

- ☐ a. memory pointer
- ☐ b. shared--file pointer
- ☒ c. current-file-position pointer
- ☐ d. seek pointer

Question **37**

Complete

1.00 points out of 1.00

An NFS (Network File System) is building on a RPC (Remote Procedure Call) system.

Select one:

- ☒ a. True
- ☐ b. False

Question **38**

Complete

1.00 points out of 1.00

IBM's indexed sequential access method (ISAM)_____.

Select one:

- ☐ a. use the pointers (kept in memory) of the actual file blocks
- ☐ b. uses an index file for sequential access
- ☒ c. uses a small master index (kept in memory) that points to disk blocks of a secondary index, while the secondary index blocks point to the actual file blocks
- ☐ d. uses the pointers (kept in memory) that points to disk blocks of a master index which points to disk blocks of a secondary index, while the secondary index blocks point to the actual file blocks

Question **39**

Complete

1.00 points out of 1.00

Which of the following is FALSE about reapers?

Select one:

- ☐ a. They implement a global page replacement policy.
- ☒ b. They may swap out pages event when there are ample free frames available.
- ☐ c. They may swap out a page from a process even when that process is not running.
- ☐ d. They may use any page replacement algorithm to swap out pages.

Question **40**

Complete

1.00 points out of 1.00

Which of the following system architectures involves multiprocessor scheduling?

Select one:

- ☐ a. multithreaded cores
- ☐ b. heterogeneous multiprocessing
- ☒ c. all of the other answers
- ☐ d. NUMA systems
- ☐ e. multicore CPUs

Question **41**

Complete

1.00 points out of 1.00

Which of the following computing environments place rigid time requirements on the operation of a processor or the flow of data?

Select one:

- ☒ a. real-time embedded system
- ☐ b. client-server computing
- ☐ c. peer-to-peer computing
- ☐ d. traditional computing

Question **42**

Complete

1.00 points out of 1.00

Which of the following selects from among the processes that are in the ready queue to execute and allocate the CPU to one of them?

Select one:

- ☐ a. job scheduler
- ☐ b. context switch
- ☐ c. swapping
- ☒ d. CPU scheduler

Question **43**

Complete

1.00 points out of 1.00

The root-partition:

Select one:

- ☐ a. contains an operating system kernel and it is not necessary to be mounted.
- ☐ b. does not contain the operating system kernel, but it is the first mounted file system during the boot time.
- ☐ c. contains a list of the operating systems which may be booted.
- ☒ d. contains an operating system kernel and it is mounted during boot time.

Question **44**

Complete

1.00 points out of 1.00

What are the two components of positioning time?

Select one:

- ☐ a. cylinder positioning time + disk arm positioning time
- ☐ b. transfer time + transfer rate
- ☒ c. seek time + rotational latency
- ☐ d. effective transfer rate - transfer rate

Question **45**

Complete

1.00 points out of 1.00

Which of the following programs runs all the time on the computer?

Select one:

- ☐ a. assembler
- ☐ b. text editor
- ☐ c. compiler
- ☒ d. kernel

Question **46**

Complete

1.00 points out of 1.00

Sequential access can be optimized by

Select one:

- ☐ a. read-ahead technology
- ☐ b. none of the other answers
- ☒ c. all of the other answers
- ☐ d. free-behind technology

Question **47**

Complete

1.00 points out of 1.00

SMP systems that use multicore processors typically run faster than SMP systems that place each processor on separate cores.

Select one:

- ☐ a. False
- ☒ b. True

Question **48**

Complete

1.00 points out of 1.00

A significant problem with priority scheduling algorithms is _____.

Select one:

- ☐ a. determining the length of the next CPU burst
- ☐ b. complexity
- ☒ c. starvation
- ☐ d. determining the length of the time quantum

Question **49**

Complete

0.00 points out of 1.00

SCAN disk head scheduling offers no practical benefit over FCFS disk head scheduling.

Select one:

- ☒ a. True
- ☐ b. False

Question **50**

Complete

1.00 points out of 1.00

A file system may be mounted:

Select one:

- ☐ a. when the operating system is running.
- ☐ b. Only files systems included in a file systems table may be mounted when the operating system is running.
- ☐ c. during the boot time only.
- ☒ d. during the boot time or when the operating system is running.

[◀ Assignment 6 - Coding A Device Driver](#)

Jump to...

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