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State	Finished
Completed on	Wednesday, 19 June 2024, 1:57 PM
Time taken	1 hour 41 mins
Marks	37.58/75.00
Grade	**20.04** out of 40.00 (**50.11**%)

Question **1**

Correct

Mark 1.00 out of 1.00

The root directory of the disk should be located:

- a. in a place hard-coded in the structures of the operating system
- b. in a place designated by the data structure in a fixed location on the disk ✔
- c. at a fixed address in main memory
- d. in a permanent place on the disk

The correct answer is: in a place designated by the data structure in a fixed location on the disk

Question **2**

Partially correct

Mark 0.67 out of 1.00

Twins algorithm:

Select one or more:

- a. Causes external fragmentation ✔
- b. Causes less fragmentation than static division into equal blocks
- c. Causes internal fragmentation ✔

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 2.

The correct answers are: Causes internal fragmentation, Causes external fragmentation, Causes less fragmentation than static division into equal blocks

Question 3

Correct

Mark 1.00 out of 1.00

The kernel (microkernel) is responsible for:

Select one or more:

- a. task control ✔
- b. memory allocation and freeing
- c. interrupt handling (at the elementary level, then they are passed on to other layers). ✔
- d. synchronization of processes and devices with processes ✔

Twoja odpowiedź jest poprawna.

The correct answers are: task control, synchronization of processes and devices with processes, interrupt handling (at the elementary level, then they are passed on to other layers).

Question 4

Partially correct

Mark 0.67 out of 1.00

In UNIX, access rights are specified:

Select one or more:

- a. Separately for write, read and execute/search ✔
- b. Separately for the user, the group to which the user belongs and for all others ✔
- c. Individually for each file
- d. At the same time, for all files in a given directory owned by the user

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 2.

The correct answers are: Individually for each file, Separately for the user, the group to which the user belongs and for all others, Separately for write, read and execute/search

Question 5

Incorrect

Mark 0.00 out of 1.00

The logical address is also:

Select one or more:

- a. Relative address ✖
- b. Effective address ✔
- c. Physical address ✖
- d. Absolute address

Twoja odpowiedź jest niepoprawna.

The correct answer is: Effective address

Question 6

Incorrect

Mark 0.00 out of 1.00

Internal fragmentation consists in:

Select one or more:

- a. The program does not use all the memory allocated to it
- b. Dividing the memory allocated to the program into a data area and a code area
- c. Free memory blocks between allocated blocks ✖
- d. Discontiguous file allocation on disk

Twoja odpowiedź jest niepoprawna.

The correct answer is: The program does not use all the memory allocated to it

Question 7

Correct

Mark 1.00 out of 1.00

Which scheduling is used to organize concurrency?

Select one or more:

- a. medium-term
- b. short-term ✔
- c. preempting
- d. long-term

Twoja odpowiedź jest poprawna.

The correct answer is: short-term

Question 8

Incorrect

Mark 0.00 out of 1.00

Which of the following few common services can be partially provided by software other than the operating system?

- a. I/O operations ✖
- b. Manipulating the file system ✔
- c. Security and protection
- d. Running programs

The correct answers are: Security and protection, Manipulating the file system

Question 9

Correct

Mark 1.00 out of 1.00

The return from interrupt instruction:

Select one or more:

- a. restores general purpose registers
- b. restores the interrupt vector ✔
- c. always jumps to the process that was interrupted
- d. restores the stack pointer

Twoja odpowiedź jest poprawna.

The correct answer is: restores the interrupt vector

Question 10

Correct

Mark 1.00 out of 1.00

Operation V on a raised binary semaphore:

Select one or more:

- a. It is stored in order to be able to perform as many operations P as there were V
- b. It does not change the value of the semaphore ✔
- c. Increases semaphore value by 1

Twoja odpowiedź jest poprawna.

The correct answer is: It does not change the value of the semaphore

Question 11

Incorrect

Mark 0.00 out of 1.00

The effective address is at the same time:

Select one or more:

- a. relative address
- b. indirect address ✖
- c. logical address
- d. physical address

Twoja odpowiedź jest niepoprawna.

The correct answer is: logical address

Question 12

Correct

Mark 1.00 out of 1.00

The hardware resources of a computer system are:

Select one or more:

- a. Windows on the screen
- b. Peripheral devices ✔
- c. Processor time ✔
- d. Primary memory ✔

Twoja odpowiedź jest poprawna.

The correct answers are: Processor time, Primary memory, Peripheral devices

Question 13

Partially correct

Mark 0.50 out of 1.00

The following paging exceptions allow for returning to the program after they occur:

Select one or more:

- a. attempting to write to a write-protected frame
- b. attempt to read from the frame storing the code
- c. page fault ✔
- d. interrupt on write (IOW)

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 1.
The correct answers are: page fault, interrupt on write (IOW)

Question 14

Incorrect

Mark 0.00 out of 1.00

How does the operating system call the task completion subroutine?

4. sets the trace in the terminating subroutine to the current position ✖
2. builds the frame of the terminating subroutine on the task stack ✖
1. builds an interrupt vector on the system stack pointing to the terminating subroutine code ✖
3. recreates the context programmatically and executes the IRET instruction ✖

Twoja odpowiedź jest niepoprawna.

The correct answer is: 4. → recreates the context programmatically and executes the IRET instruction, 2. → sets the trace in the terminating subroutine to the current position, 1. → builds the frame of the terminating subroutine on the task stack, 3. → builds an interrupt vector on the system stack pointing to the terminating subroutine code

Question 15

Correct

Mark 1.00 out of 1.00

Dynamic relocation requires the use of:

Select one or more:

- a. limit register
- b. status register
- c. base register (DATUM) ✔
- d. program counter

Twoja odpowiedź jest poprawna.

The correct answer is: base register (DATUM)

Question 16

Incorrect

Mark 0.00 out of 1.00

What mechanism is used to desynchronize processes with different relative speeds?

Select one or more:

- a. buffer
- b. preempting
- c. interrupts ✖
- d. scheduling

Twoja odpowiedź jest niepoprawna.

The correct answer is: buffer

Question 17

Correct

Mark 1.00 out of 1.00

Which of the following information is stored on task switching?

- a. I/O status information ✔
- b. Contents of datum, limit and other registers inaccessible to the program ✔
- c. scheduler data ✔
- d. Contents of general purpose registers, program counter, and similar registers available to the program ✔

The correct answers are: I/O status information, scheduler data, Contents of datum, limit and other registers inaccessible to the program, Contents of general purpose registers, program counter, and similar registers available to the program

Question 18

Correct

Mark 1.00 out of 1.00

The direct resume rule means that:

Select one or more:

- a. The resuming process gets a critical region after the resumed process exits the critical region
- b. The resuming process applies for the critical region just like other processes waiting to enter the critical region ✔
- c. The resuming process loses the critical region ✔

Twoja odpowiedź jest poprawna.

The correct answers are: The resuming process loses the critical region, The resuming process applies for the critical region just like other processes waiting to enter the critical region

Question 19

Partially correct

Mark 0.50 out of 1.00

Static relocation is performed by:

- a. Special registers (DATUM)
- b. Loader ✔
- c. Compiler
- d. Segment descriptors

The correct answers are: Compiler, Loader

Question 20

Partially correct

Mark 0.50 out of 1.00

For address translation, the following is used:

Select one or more:

- a. reference and protection bits
- b. translation register
- c. associative translation buffer ✔
- d. index table

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 1.
The correct answers are: index table, associative translation buffer

Question 21

Correct

Mark 1.00 out of 1.00

The system stack must provide space for:

Select one or more:

- a. CPU registers
- b. Processor registers in as many copies as there are devices in the system +1
- c. Processor registers in as many copies as there are interrupt lines +1 ✔
- d. Processor registers in as many copies as there are interrupt lines and possible software interrupts

Twoja odpowiedź jest poprawna.

The correct answer is: Processor registers in as many copies as there are interrupt lines +1

Question 22

Correct

Mark 1.00 out of 1.00

Connection with segmentation consists in:

Select one or more:

- [x] a. The use of a segment table or pool of segment registers treated as an additional, superior level of paging ✔
- [ ] b. Dividing pages into segments
- [ ] c. Generating a "frame error" interrupt when the frame containing the page does not belong to the current segment
- [ ] d. Identifying segments with pages

Twoja odpowiedź jest poprawna.

The correct answer is: The use of a segment table or pool of segment registers treated as an additional, superior level of paging

Question 23

Incorrect

Mark 0.00 out of 1.00

What type of code can multiple processes execute simultaneously?

Select one or more:

- [x] a. reentrant ✔
- [ ] b. binary
- [ ] c. self-modifying
- [x] d. dynamically relocated ✖

Twoja odpowiedź jest niepoprawna.

The correct answer is: reentrant

Question 24

Incorrect

Mark 0.00 out of 1.00

a page fault interrupt is issued when:

Select one or more:

- a. the program is accessing a page that is not in the cache ✖
- b. the program accesses the page
- c. the program accesses a page that is not in the primary memory ✔
- d. an error has occurred on the current page

Twoja odpowiedź jest niepoprawna.

The correct answer is: the program accesses a page that is not in the primary memory

Question 25

Correct

Mark 1.00 out of 1.00

The scheduler decisions take the form:

Select one or more:

- a. change from ready to active state ✔
- b. change from waiting to active state
- c. change from active to ready state
- d. change from waiting to ready state

Twoja odpowiedź jest poprawna.

The correct answer is: change from ready to active state

Question 26

Correct

Mark 1.00 out of 1.00

Using the Test-And-Set instruction in synchronization:

Select one or more:

- a. Requires organizing inactive waiting in queues
- b. It requires processes to actively wait ✔
- c. Requires an explicit relinquishment of the processor to another process
- d. Stops the processor if 0 is read

Twoja odpowiedź jest poprawna.

The correct answer is: It requires processes to actively wait

Question 27

Correct

Mark 1.00 out of 1.00

Address translation aims to:

Select one or more:

- a. converting a physical address to a virtual one
- b. converting a virtual address to a physical one ✔
- c. detecting the phenomenon of locality of references
- d. Generating a "frame error" interrupt when the page is out of memory

Twoja odpowiedź jest poprawna.

The correct answer is: converting a virtual address to a physical one

Question 28

Incorrect

Mark 0.00 out of 1.00

System/user threads:

Select one or more:

- a. User-level threads share the same stack. ✖
- b. User-level threads share the same execution context.
- c. System level thread descriptors are stored in the operating system kernel. ✔

Twoja odpowiedź jest niepoprawna.

The correct answers are: System level thread descriptors are stored in the operating system kernel., User-level threads share the same execution context.

Question 29

Incorrect

Mark 0.00 out of 1.00

The program must be specially compiled to run in paged memory.

- True ✖
- False

The correct answer is 'False'.

Question 30

Incorrect

Mark 0.00 out of 1.00

The mechanism for moving programs between parimary memory and mass storage is called:

- a. sweeping
- b. swapping ✖
- c. leaching
- d. leading out

The correct answer is: sweeping

Question 31

Incorrect

Mark 0.00 out of 1.00

The internal state of the file system layer is available for:

- a. Applications ✖
- b. User programs ✖
- c. OS kernel ✔
- d. Program supervisor layer

The correct answers are: OS kernel, Program supervisor layer

Question 32

Correct

Mark 1.00 out of 1.00

Sequence of actions when starting a new task:

1. filling in the descriptor in the kernel ✔
2. memory allocation if this is the first task of the program ✔
3. initialize the stack, fill the first frame ✔
4. instruction to transfer control to the task ✔

Twoja odpowiedź jest poprawna.

The correct answer is: 1. → filling in the descriptor in the kernel, 2. → memory allocation if this is the first task of the program, 3. → initialize the stack, fill the first frame, 4. → instruction to transfer control to the task

Question 33

Correct

Mark 1.00 out of 1.00

The page index table address is stored in:

Select one or more:

- a. program counter
- b. page register
- c. stack pointer
- d. page table base register ✔

Twoja odpowiedź jest poprawna.

The correct answer is: page table base register

Question 34

Incorrect

Mark 0.00 out of 1.00

Is IOW bit:

Select one or more:

- a. protection bit
- b. reference bit ✖
- c. enable bit

Twoja odpowiedź jest niepoprawna.

The correct answer is: protection bit

Question 35

Correct

Mark 1.00 out of 1.00

When starting a program, how is control passed to it from the operating system?

Select one or more:

- a. extracode
- b. jump with trace
- c. jump
- d. return from interrupt handler IRET ✔

Twoja odpowiedź jest poprawna.

The correct answer is: return from interrupt handler IRET

Question 36

Incorrect

Mark 0.00 out of 1.00

The software resources of a computer system are:

Select one or more:

- a. Files ✔
- b. Buffers ✔
- c. Semaphores ✔
- d. Primary memory ✖

Twoja odpowiedź jest niepoprawna.

The correct answers are: Files, Buffers, Semaphores

Question 37

Correct

Mark 1.00 out of 1.00

The main function of shared memory is:

- [x] a. inter-process communication ✔
- [ ] b. use working memory efficiently
- [ ] c. inter-process synchronization
- [ ] d. inter-process scheduling

The correct answer is: inter-process communication

Question 38

Incorrect

Mark 0.00 out of 1.00

Which of the following facilities or abilities are required to provide mutual exclusion support?

Select one or more:

- [ ] a. The relative speeds of the tasks must be taken into account.
- [x] b. Task scheduling must be considered. ✖
- [ ] c. A task that is performed outside the critical section must not affect the behavior of a task in the critical section.
- [x] d. The task stays in its critical section only for a finite amount of time. ✔

Twoja odpowiedź jest niepoprawna.

The correct answers are: A task that is performed outside the critical section must not affect the behavior of a task in the critical section., The task stays in its critical section only for a finite amount of time.

Question 39

Incorrect

Mark 0.00 out of 1.00

Allocation unit for file storage:

- a. must be constant across the disk partition
- b. may vary between partitions ✔
- c. may differ between files in a partition
- d. is any integer multiple of a sector (>0) ✖

The correct answers are: must be constant across the disk partition, may vary between partitions

Question 40

Incorrect

Mark 0.00 out of 1.00

Frame protection bits:

Select one or more:

- a. must be available for group clear
- b. must be readable ✖
- c. must be group readable
- d. must be available for writing ✔

Twoja odpowiedź jest niepoprawna.

The correct answer is: must be available for writing

Question 41

Correct

Mark 1.00 out of 1.00

The following situations cause "error" exceptions (processor internal interrupts)

Select one or more:

- a. extracode
- b. illegal instruction ✔
- c. instruction legal but prohibited in user mode ✔

Twoja odpowiedź jest poprawna.

The correct answers are: illegal instruction, instruction legal but prohibited in user mode

Question 42

Correct

Mark 1.00 out of 1.00

Precise interrupts are:

Select one or more:

- a. unblocked only in a stable state between the execution of successive instructions
- b. only issued in a stable state between executions of subsequent instructions
- c. accepted only in a stable state between the execution of successive instructions ✔
- d. transferred only in a stable state between the execution of successive instructions instrukcji

Twoja odpowiedź jest poprawna.

The correct answer is: accepted only in a stable state between the execution of successive instructions

Question 43

Correct

Mark 1.00 out of 1.00

What mechanism is used to preserve the states of preempted tasks?

- a. time slice
- b. batch work
- c. task period
- d. context switch ✔

The correct answer is: context switch

Question 44

Partially correct

Mark 0.25 out of 1.00

In the sweeping mechanism, a program should be loaded into memory when:

Select one or more:

- a. The programmatical condition for the continuation of the program was met by another program
- b. The device the program was waiting for has freed up ✔
- c. The time the program was supposed to be "wake up" has occurred
- d. The data transmission to the printer, ordered by the program, has ended

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 1.

The correct answers are: The data transmission to the printer, ordered by the program, has ended, The programmatical condition for the continuation of the program was met by another program, The device the program was waiting for has freed up, The time the program was supposed to be "wake up" has occurred

Question 45

Correct

Mark 1.00 out of 1.00

With indulgent scheduling, once a CPU is allocated to a task, the task keeps it until:

Select one or more:

- a. transition a task from the ready state to the active state
- b. releasing the processor by the task ✔
- c. task termination ✔
- d. transition a task from the active state to the ready state

Twoja odpowiedź jest poprawna.

The correct answers are: task termination, releasing the processor by the task

Question 46

Correct

Mark 1.00 out of 1.00

The thread is also called:

- a. heavy process
- b. lightweight process ✔
- c. data process
- d. overlay process

The correct answer is: lightweight process

Question 47

Incorrect

Mark 0.00 out of 1.00

In UNIX, access rights are attributes:

Select one or more:

- a. An entry in the I-node table
- b. User descriptor
- c. A directory entry for a file ✖
- d. A special table specifying access rights

Twoja odpowiedź jest niepoprawna.

The correct answer is: An entry in the I-node table

Question 48

Partially correct

Mark 0.50 out of 1.00

Discontinuous allocation is the result of:

Select one or more:

- a. compacting
- b. paging
- c. reloaction
- d. segmentation ✔

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 1.
The correct answers are: paging, segmentation

Question 49

Incorrect

Mark 0.00 out of 1.00

The behavior of the exchange algorithm opposite to that expected with the measures taken is called:

Answer: the exchange algorithm opposite to that expected with the measures taken is referred to as “sun ✖

The correct answer is: anomaly

Question 50

Partially correct

Mark 0.33 out of 1.00

Which of the following interrupts a running process?

- a. Hardaware interrupt
- b. Timer interrupts ✔
- c. Scheduler
- d. Power fail interrupt

The correct answers are: Hardaware interrupt, Timer interrupts, Power fail interrupt

Question 51

Correct

Mark 1.00 out of 1.00

Scheduling aims to optimize:

Select one or more:

- a. processor utilization ✔
- b. reaction time ✔
- c. wait time ✔
- d. system throughput ✔

Twoja odpowiedź jest poprawna.

The correct answers are: processor utilization, system throughput, wait time, reaction time

Question 52

Correct

Mark 1.00 out of 1.00

The multi-level interrupt controller includes:

Select one or more:

- a. The register of interrupt being serviced
- b. Priority encoder ✔
- c. Individual interrupt mask ✔
- d. Collective interrupt mask ✔

Twoja odpowiedź jest poprawna.

The correct answers are: Collective interrupt mask, Individual interrupt mask, Priority encoder

Question 53

Partially correct

Mark 0.50 out of 1.00

Using Test-And-Set or Compare-And-Swap in synchronization:

Select one or more:

- a. Stops the processor if 0 is read
- b. Requires organizing inactive waiting in queues
- c. It can only be applied in systems with shared memory
- d. It requires processes to actively wait ✔

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 1.
The correct answers are: It requires processes to actively wait,
It can only be applied in systems with shared memory

Question 54

Correct

Mark 1.00 out of 1.00

Scheduling algorithms can be:

- [x] a. indulgent ✔
- [x] b. preemptive ✔
- [ ] c. interrupting
- [ ] d. term changing

The correct answers are: indulgent, preemptive

Question 55

Incorrect

Mark 0.00 out of 1.00

The following situations trigger exceptions (processor internal interrupts) of the "error" type:

Select one or more:

- [x] a. an attempt to write to the page for which the "read only" bit was set ✔
- [x] b. memory reference beyond limit register value ✔
- [x] c. memory reference in the area of the page that is not in memory ✖
- [x] d. a reference to memory that is not in the address space ✔

Twoja odpowiedź jest niepoprawna.

The correct answers are: a reference to memory that is not in the address space, memory reference beyond limit register value, an attempt to write to the page for which the "read only" bit was set

Question 56

Partially correct

Mark 0.67 out of 1.00

What is included in the context that must be saved for a synchronous (inter-instruction) precision interrupt?

Select one or more:

- a. instruction register
- b. collective of individual interrupt mask
- c. program counter ✔
- d. general purpose registers ✔

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 2.
The correct answers are: general purpose registers, program counter, collective of individual interrupt mask

Question 57

Partially correct

Mark 0.50 out of 1.00

In a FAT-based disk system (without sharing allocation units by files), the number of files is directly limited by:

Select one or more:

- a. The size of the disk space
- b. Allocation unit size
- c. The number of bits of the field describing the size of the file
- d. The number of bits of the disk address
- e. FAT table size ✔

Twoja odpowiedź jest częściowo poprawna.

You have correctly selected 1.

The correct answers are: FAT table size, The size of the disk space

Question 58

Incorrect

Mark 0.00 out of 1.00

Which of the following memory allocation schemes cause external fragmentation?

- a. Sweeping
- b. Segmentation
- c. Paging
- d. Multiple contiguous fixed partitions of equal size ✖

The correct answers are: Segmentation, Sweeping

Question 59

Incorrect

Mark 0.00 out of 1.00

The sweeping mechanism consists in:

Select one or more:

- a. Loading pages into the primary memory and sending them to the disk
- b. Loading segments into primary memory and sending them to disk
- c. Merging adjacent free memory blocks
- d. Moving programs around in memory to eliminate fragmentation ✖

Twoja odpowiedź jest niepoprawna.

The correct answer is: Loading segments into primary memory and sending them to disk

Question 60

Correct

Mark 1.00 out of 1.00

Having two-level page index tables:

Select one or more:

- [ ] a. the content of a level I table element is added to the content of a level II table element
- [x] b. the content of a level I table element points to a level II table ✔
- [ ] c. the content of the level I table element is concatenated (combined) with the content of the level II table element
- [ ] d. the content of a level I table element is an index in a level II table

Twoja odpowiedź jest poprawna.

The correct answer is: the content of a level I table element points to a level II table

Question 61

Incorrect

Mark 0.00 out of 5.00

What is the average time in the system for tasks in the batch, using SJF algorithm?

task	1	2	3	4
processing time	3.3	6.8	2.4	1.2

Answer: 3.8 ✖

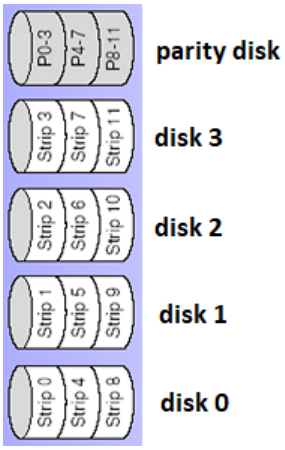
The correct answer is: 6.3

Question 62

Incorrect

Mark 0.00 out of 5.00

In RAID 4, data is placed in Strips that are "scattered" over the data disks, so that each subsequent strip is on the next data disk, modulo the number of disks. For this, there is a parity disk that holds the parity bits of zeroth bits, first bits, second bits, etc., equal-numbered strips divided by the number of data disks, for example, strips 0-3, 4-7, 8-11, etc.:



the start of strips 0,1,2,3 looks like this:

1	1	1	0	0	Parity disk
0	0	0	0	0	Disk 3
1	0	0	1	0	Disk 2
1	0	1	0	1	Disk 1
0	1	1	0	0	Disk 0

In the parity strip, the values are placed so that the parity bit keeps the corresponding strip bits 0-3 even.

Disk 3 has been damaged and reads only 0. After replacing the disk with a new one, what values should be put in the strip on disk 3?

Answer: 0000 ✖

The correct answer is: 10111

Question 63

Correct

Mark 5.00 out of 5.00

The virtual address consists of 8b page number and 8b offset. The page index table is shown below (index, content). For decimal address 384, binary 0000 0001 1000 0000, enter the physical address in the form: frame number.offset (as decimal numbers, offset in 3 digits). For example, for a physical address consisting of frame 0 and offset 18, specify 0.018. If there is no physical address for the given virtual address, then -1 should be specified.

7	12
6	-1
5	7
4	4
3	9
2	-1
1	3
0	2

Answer: 3.128 ✔

The correct answer is: 3.128