Rozpoczęto	poniedziałek, 16 czerwca 2025, 10:52
Stan	Ukończone
Ukończono	poniedziałek, 16 czerwca 2025, 11:52
Wykorzystany czas	59 min. 43 sek.
Punkty	28,67/40,00
Ocena	**17,92** pkt. na 25,00 pkt. możliwych do uzyskania (**71,67**%)

Pytanie **1**

Poprawnie

Punkty: 1,00 z 1,00

Paging - the key in associative memory is:

Wybierz wszystkie poprawne:

- a. frame number
- b. the frame number concatenated with the page number
- c. page number ✔
- d. the page number concatenated with the frame number

Twoja odpowiedź jest poprawna.

Poprawna odpowiedź to: page number

Pytanie **2**

Częściowo poprawnie

Punkty: 0,50 z 1,00

WORST-FIT algorithm:

Wybierz wszystkie poprawne:

- a. Requires a descending sort of the list of free blocks ✔
- b. Requires sorting the cut part into the list of free blocks ✔
- c. It allows for fast determining whether there is a free block of the required size
- d. It is designed to reduce external fragmentation

Twoja odpowiedź jest częściowo poprawna.

Poprawnie wybrałeś (-łaś): 2.

Prawidłowymi odpowiedziami są: Requires a descending sort of the list of free blocks, It allows for fast determining whether there is a free block of the required size, It is designed to reduce external fragmentation, Requires sorting the cut part into the list of free blocks

Pytanie 3

Niepoprawnie

Punkty: 0,00 z 1,00

LRU algorithm consists in:

Wybierz wszystkie poprawne:

- a. Ejecting the most recently used page from memory
- b. Removing the least used page from memory ✖
- c. Downloading to memory the page that is most often needed
- d. Downloading to the memory of the page that will be needed as soon as possible

Twoja odpowiedź jest niepoprawna.

Poprawna odpowiedź to: Ejecting the most recently used page from memory

Pytanie 4

Częściowo poprawnie

Punkty: 0,67 z 1,00

The interrupt encoder is:

Wybierz wszystkie poprawne:

- a. a register that tells the processor the interrupt number to be handled
- b. a combinational circuit that calculates the value of a new individual interrupt mask
- c. a combinational circuit that computes the number of the reported and unmasked interrupt with the highest priority ✔
- d. a combinational circuit that transmits to the processor the number of the interrupt to be serviced ✔

Twoja odpowiedź jest częściowo poprawna.

Poprawnie wybrałeś (-łaś): 2.
Prawidłowymi odpowiedziami są: a combinational circuit that computes the number of the reported and unmasked interrupt with the highest priority, a combinational circuit that calculates the value of a new individual interrupt mask, a combinational circuit that transmits to the processor the number of the interrupt to be serviced

Pytanie 5

Częściowo poprawnie

Punkty: 0,50 z 1,00

Interrupt handling - sequence of actions:

1. saving a copy of the interrupt vector (PC and SR) ✔
2. switching to system mode (modification of PC and status register) ✔
3. switching to the system stack ✖
4. programmatic context saving ✖

Twoja odpowiedź jest częściowo poprawna.

Poprawnie wybrałeś (-łaś): 2.

Poprawna odpowiedź to: 1. → saving a copy of the interrupt vector (PC and SR), 2. → switching to system mode (modification of PC and status register), 3. → programmatic context saving, 4. → switching to the system stack

Pytanie 6

Poprawnie

Punkty: 1,00 z 1,00

The hardware mechanisms necessary for paging are

(note: "frame error" is also called "page fault", "frame fault"):

Wybierz wszystkie poprawne:

- a. Address translation, page index tables, "frame error" interrupt, associative memory, page swapper
- b. Address translation, page index tables, "frame error" interrupt ✔
- c. Address translation, page index tables, page reference bits, "frame error" interrupt
- d. Address translation, page index tables, page reference bits, "frame error" interrupt, associative memory

Twoja odpowiedź jest poprawna.

Poprawna odpowiedź to: Address translation, page index tables, "frame error" interrupt

Pytanie 7

Poprawnie

Punkty: 1,00 z 1,00

Conditional variables in a monitor

Wybierz wszystkie poprawne:

- a. They guard access to the critical region of the monitor
- b. They are used to suspend processes that cannot run because the conditions for their continuation are not met ✔
- c. They are used to check whether the conditions for process continuation are met

Twoja odpowiedź jest poprawna.

Poprawna odpowiedź to: They are used to suspend processes that cannot run because the conditions for their continuation are not met

Pytanie 8

Poprawnie

Punkty: 3,00 z 3,00

For the disk operation scheduling Cyclic SCAN method, the currently being executed operation is in 33 cylinder. The direction in the Cyclic SCAN method is descending. The next scheduled operations (in the order of their queuing) are:

Operation number	1	2	3	4	5
Cylinder number	42	41	30	31	25

For the next disk operation, enter the head travel distance (in cylinders) between the current and next operation.

Odpowiedź: 2 ✔

Poprawna odpowiedź to: 2

Pytanie 9

Poprawnie

Punkty: 3,00 z 3,00

When opening a file, we specify the opening mode and the sharing mode.

Let's encode the opening codes:

fmOpenRead	10
fmOpenWrite	01
fmOpenReadWrite	00
fmShareDenyWrite	10
fmShareExclusive	00
fmShareDenyRead	01
fmShareDenyNone	11

The first program opened the file in mode 01 and sharing mode 11

The second program wants to open the file in mode 00 and sharing mode 00

Will the second program be able to open the file (0-no, 1-yes, 2-it depends on other circumstances)?

Odpowiedź: 0 ✔

Poprawna odpowiedź to: 0

Pytanie 10

Niepoprawnie

Punkty: 0,00 z 3,00

frame	M	R	belongs to process (0-not used)
1	0	1	5
2	1	1	0
3	0	0	0
4	1	0	1
5	0	1	0
6	0	1	4
7	1	1	4
8	0	0	3

Using the above table, with the fixed frame allocation rule, which frame will be allocated to the process? The pages are scanned starting from the top. The process for which the frame is needed is 4. Provide a frame number.

Odpowiedź: 6 ✖

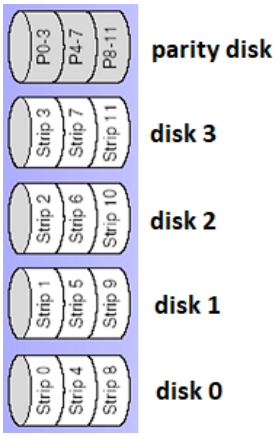
Poprawna odpowiedź to: 2

Pytanie **11**

Poprawnie

Punkty: 3,00 z 3,00

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?

Enter the values of the consecutive bits on disk 3, without any separators between them, for example 00000

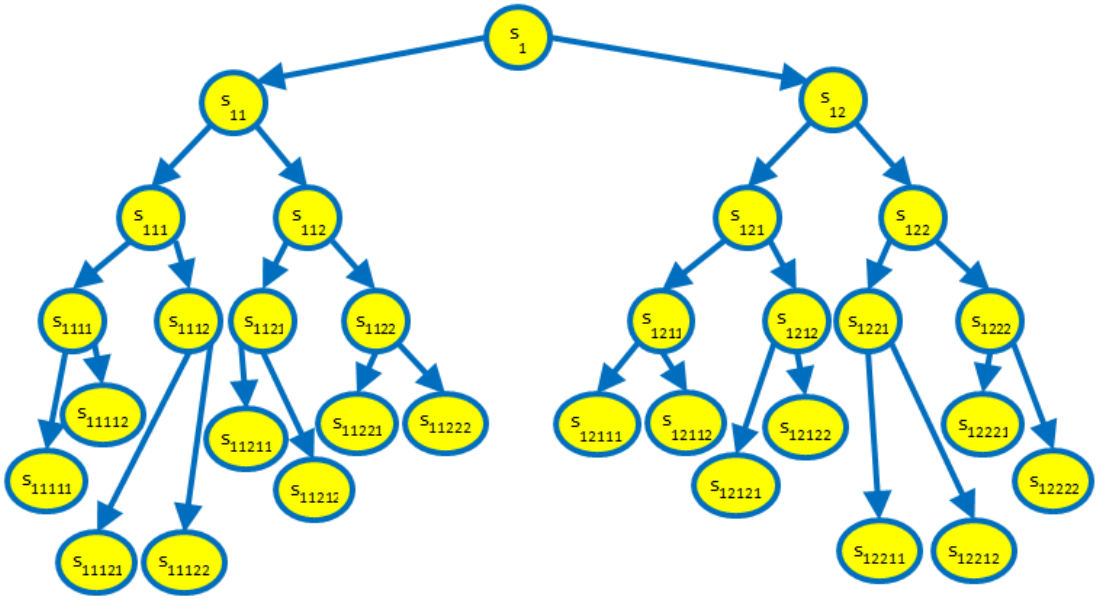
Odpowiedź: 10111 ✔

Poprawna odpowiedź to: 10111

Pytanie 12

Niepoprawnie

Punkty: 0,00 z 3,00



Above is the nesting structure of subroutines in some program.

Can there be a dynamic link in subroutine frame s11111 to subroutine frame s11111 ?

answer 0-no, 1-yes

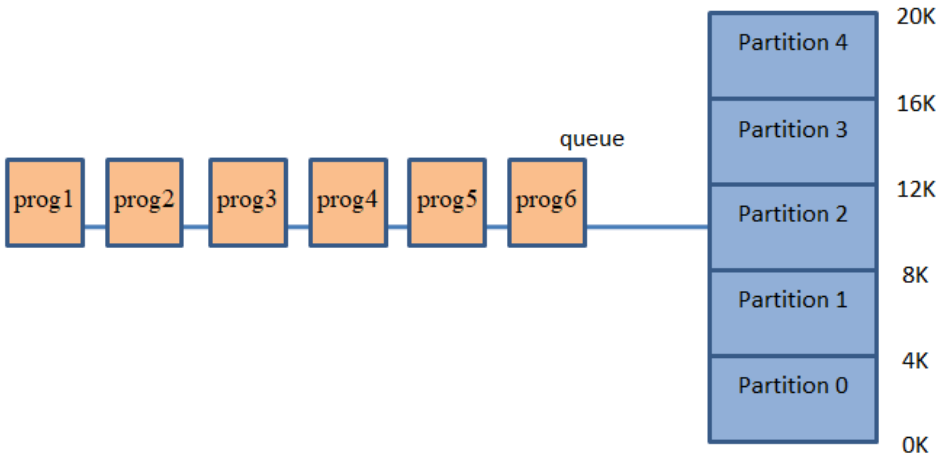
Odpowiedź: 0 ✖

Poprawna odpowiedź to: 1

Pytanie 13

Poprawnie

Punkty: 3,00 z 3,00



In the above memory division, the programs waiting to be loaded into memory have the following sizes:

prog1 - 4K
prog2 - 5K
prog3 - 4K
prog4 - 6K
prog5 - 6K
prog6 - 5K

Programs are loaded into memory partitions (if possible) in the reverse order of their numbers, from 6 to 1.

Specify, which program will face the internal fragmentation problem as the first. Provide only the program number. If the internal fragmentation cannot occur, enter 0.

Odpowiedź: 0 ✔

Poprawna odpowiedź to: 0

Pytanie **14**

Poprawnie

Punkty: 3,00 z 3,00

The virtual address consists of 6b page number and 10b offset. The page index table is shown below (index, content). For decimal address 6192, binary 0001 1000 0011 0000, specify 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	0
5	7
4	-1
3	9
2	5
1	3
0	-1

Odpowiedź: 0.048 ✔

Poprawna odpowiedź to: 0,048

Pytanie **15**

Poprawnie

Punkty: 3,00 z 3,00

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

task	1	2	3	4
processing time	3,4	5,3	2,3	1,1

Odpowiedź: 5.85 ✔

Poprawna odpowiedź to: 5,8

Pytanie 16

Poprawnie

Punkty: 3,00 z 3,00

The organization of memory and processor is word. A word means 16 bits (int also takes one 16-bit word). Hexadecimal values are preceded by a # character.

variable a has the value #a0c0

top of the stack (full descending, i.e. the stack pointer points to the most recently put element on the stack, and the stack expands towards lower addresses) is #c100

stack frame before calling subroutine A: #c105

address of subroutine A #1001

Calling rules: Parameters are put on the stack in accordance with the convention of the C language, i.e. starting from the last one, without a static link, the result of the function is passed in registers. The stack is shown after subroutine A is called, at label point C. Subroutine A is called A(a,a,a); from address #1050.

Regardless of the programming language, subroutine A has the form

```
A(int x,y,z);
{
        int q = x+0x20;
C: ...
}
```

Specify what cell #c0fe contains: parameter y ✔

Address	content	
#c100	????	
#c0ff	#a0c0	
#c0fe	#a0c0	
#c0fd	#a0c0	
#c0fc	#1051	
#c0fb	#c105	
#c0fa	#a0e0	
#c0f9	????	
#c0f8	????	

Twoja odpowiedź jest poprawna.

Poprawna odpowiedź to:

The organization of memory and processor is word. A word means 16 bits (int also takes one 16-bit word). Hexadecimal values are preceded by a # character.

variable a has the value #a0c0

top of the stack (full descending, i.e. the stack pointer points to the most recently put element on the stack, and the stack expands towards lower addresses) is #c100

stack frame before calling subroutine A: #c105

address of subroutine A #1001

Calling rules: Parameters are put on the stack in accordance with the convention of the C language, i.e. starting from the last one, without a static link, the result of the function is passed in registers. The stack is shown after subroutine A is called, at label point C. Subroutine A is called A(a,a,a); from address #1050.

Regardless of the programming language, subroutine A has the form

```
A(int x,y,z);
{
        int q = x+0x20;
C: ...
}
```

Specify what cell #c0fe contains:[parameter y]

Address	content	
#c100	????	
#c0ff	#a0c0	
#c0fe	#a0c0	
#c0fd	#a0c0	
#c0fc	#1051	
#c0fb	#c105	
#c0fa	#a0e0	
#c0f9	????	
#c0f8	????	

Pytanie **17**

Niepoprawnie

Punkty: 0,00 z 3,00

page nr	1	2	3	4	5	6	7	8	9
loaded	2	7	15	23	25	35	53	60	62
R bit	1	1	0	1	1	1	1	1	1

Using the above list for the FIFO-second chance swapping algorithm, what will be the bottom row after page replacement execution? The middle row is the number of a time slice in which a page was loaded to a frame. Provide a sequence of bits R for the pages; for example, before page replacement, the bottom row has the image 110111111. We assume that the loaded page gets R=0.

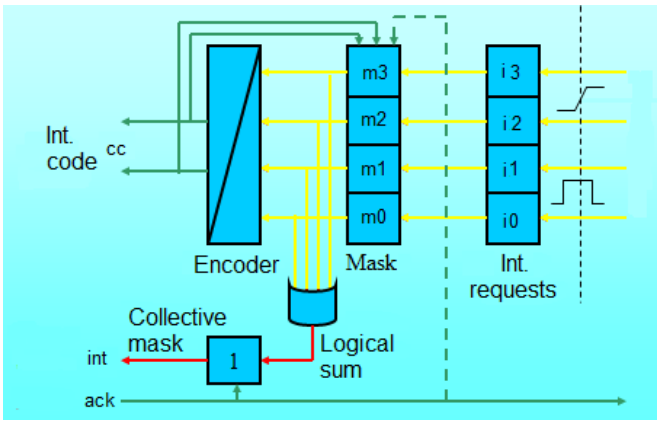
Odpowiedź: 000111111 ✖

Poprawna odpowiedź to: 111111100

Pytanie 18

Poprawnie

Punkty: 3,00 z 3,00



In the given interrupt controller structure, the interrupt mask is 1111 (from m3 to m0), and interrupts 1111 are reported (from i3 to i0).

The interrupt with index 3 has the highest priority.

What will be the value of the interrupt code cc sent to the processor (provide the code in decimal)?

If no interrupt is reported, enter -1

Odpowiedź: 3 ✔

Poprawna odpowiedź to: 3