It has started	Monday, June 16, 2025, 10:39 AM
Condition	Completed
Completed	Monday, June 16, 2025, 11:52 AM
Time used	1 hour 13 minutes
Points	40.00/40.00
Rate	**25.00** points out of 25.00 possible points (**100** %)

Question **1**

Correctly

Points: 1.00 out of 1.00

Discontinuous allocation is the result of:

Select all correct:

- and. relocation
- b. compaction
- c. segmentation ✔
- d. paging ✔

Your answer is correct.

The correct answers are: paging, segmantation

Question **2**

Correctly

Points: 1.00 out of 1.00

Interrupt vector:

Select all correct:

- and. contains the ID of the process that should be restarted
- b. contains minimal information that cannot be saved programmatically ✔
- c. contains the instruction counter, condition bits, interrupt mask, and general purpose registers
- d. it is saved automatically when an interrupt is accepted ✔

Your answer is correct.

The correct answers are: it is saved automatically when an interrupt is accepted, contains minimal information that cannot be saved programmatically

Pytanie 3

Poprawnie

Punkty: 1,00 z 1,00

WORST-FIT algorithm:

Wybierz wszystkie poprawne:

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

Twoja odpowiedź jest poprawna.

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 4

Poprawnie

Punkty: 1,00 z 1,00

Which of the following memory allocation schemes causes external fragmentation?

- a. Multiple contiguous fixed partitions of various sizes ✔
- b. Multiple contiguous fixed partitions of equal size
- c. Paging
- d. Sweeping ✔

Prawidłowymi odpowiedziami są: Sweeping, Multiple contiguous fixed partitions of various sizes

Pytanie 5

Poprawnie

Punkty: 1,00 z 1,00

What is true about system level threads?

- a. Thread switching does not require interaction with the operating system.
- b. All threads of the process execute physically simultaneously.
- c. All process threads share the same address space. ✔
- d. All process threads can share the same set of open files. ✔

Prawidłowymi odpowiedziami są: All process threads can share the same set of open files., All process threads share the same address space.

Pytanie 6

Poprawnie

Punkty: 1,00 z 1,00

For concurrency in OS:

- a. cache memory is necessary
- b. timer interrupts are necessary
- c. special processor support is required
- d. interrupt handling is necessary ✔

Poprawna odpowiedź to: interrupt handling is necessary

Pytanie 7

Poprawnie

Punkty: 1,00 z 1,00

The interrupt acceptance sequence consists of (in the sequence):

Wybierz wszystkie poprawne:

- a. identification of the interrupt level, saving the interrupt vector, performing a jump according to the interrupt table
- b. identification of the interrupt level, performing a jump according to the interrupt table, saving the interrupt vector
- c. identification of the interrupt level, saving the interrupt vector, performing a jump with a trace according to the interrupt table ✔
- d. identification of the interrupt level, performing a jump with the trace according to the interrupt table, saving the interrupt vector

Twoja odpowiedź jest poprawna.

Poprawna odpowiedź to: identification of the interrupt level, saving the interrupt vector, performing a jump with a trace according to the interrupt table

Pytanie 8

Poprawnie

Punkty: 3,00 z 3,00

For the disk operation scheduling Cyclic SCAN method, the currently being executed operation is in 30 cylinder. The direction in the Cyclic SCAN method is ascending. The next scheduled operations (in the order of their queuing) are:

Operation number	1	2	3	4	5
Cylinder number	41	24	25	34	40

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

Odpowiedź: 4 ✔

Poprawna odpowiedź to: 4

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

Poprawnie

Punkty: 3,00 z 3,00

page	M	R	belongs to process
1	0	1	3
2	1	1	3
3	0	0	4
4	1	0	6
5	0	1	2
6	0	1	5
7	1	1	5
8	0	0	5

Using the above table of the history of R bit for the pages in NRU swapping, with global frame allocation rule, which page will be sent to the disk first? The pages are scanned starting from the top. The process for which the frame is needed is 2. Provide a page number.

Odpowiedź: 3 ✔

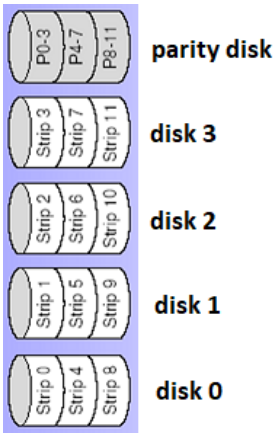
Poprawna odpowiedź to: 3

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
1	1	1	1	1	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 corrupted and always reads 1. After replacing the disk with a new one, what values should I 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

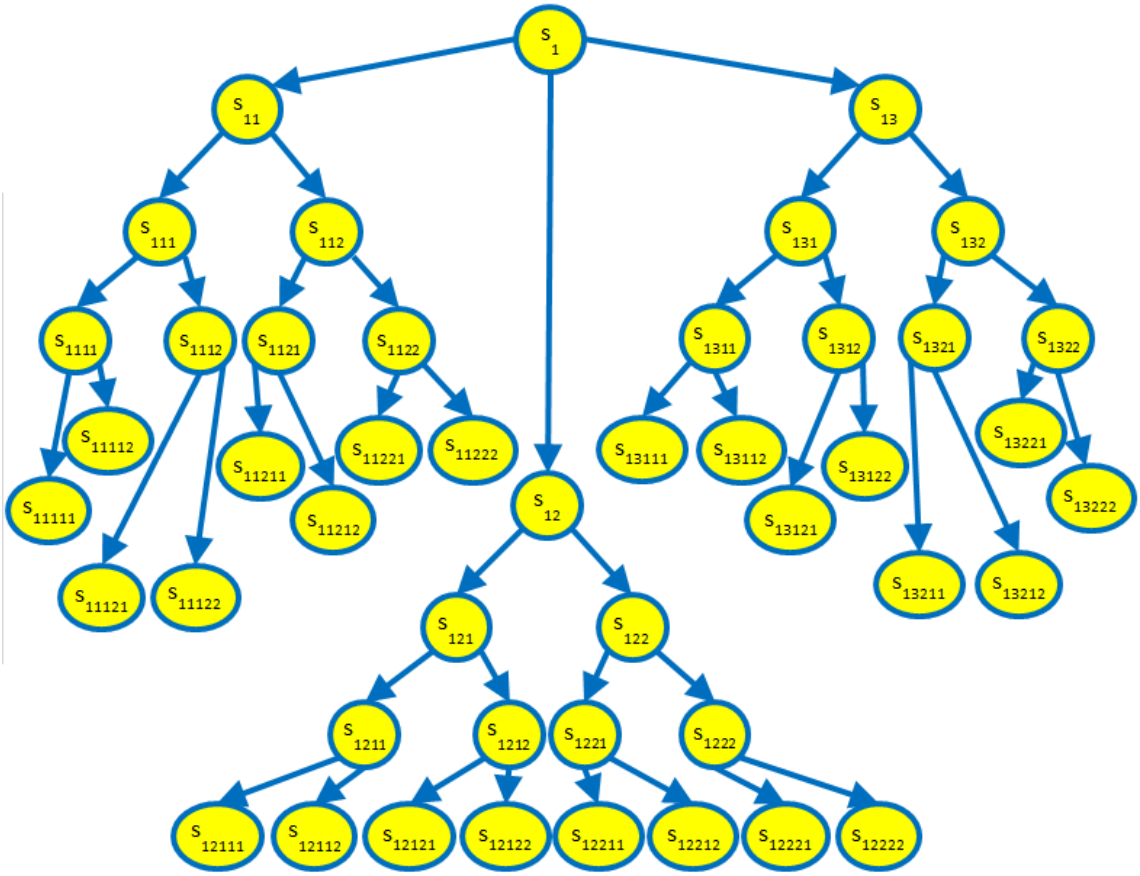
Pytanie 12

Poprawnie

Punkty: 3,00 z 3,00

The stack frame of which subroutine (specify the index) will be pointed by the static link in the frame of the subroutine S1222, that is called from the subroutine S12?

If the call is not possible, enter index -1.



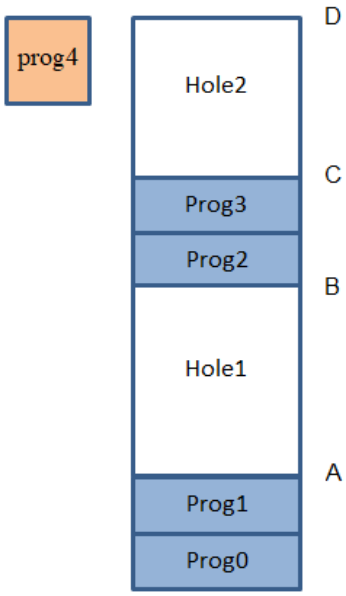
Odpowiedź: -1 ✔

Poprawna odpowiedź to: -1

Pytanie 13

Poprawnie

Punkty: 3,00 z 3,00



In the above memory allocation state, 4 programs are already in memory, and 5th program is waiting to be loaded into the memory. The borders of the holes are:

A - 4K
B - 6K
C - 15K
D - 17K

The memory is allocated to the programs in the worst-fit rule, without making a new hole if the allocated block is larger than the demand.

What will be the internal fragmentation after loading the program Prog4 of size 2K into memory?

Odpowiedź: 0 ✔

===== for teacher ======

2 2

Poprawna odpowiedź to: 0

Pytanie 14

Poprawnie

Punkty: 3,00 z 3,00

Assuming that memory cells are 1-byte, the page number in the address field is 13 bits, the offset is 13 bits, the frame number is 11 bits, and all entries in the TIS page index table are on a 4-byte word boundary, please specify:

- the maximum size of the physical memory in MB

Odpowiedź: 16 ✔

Poprawna odpowiedź to: 16

Pytanie 15

Poprawnie

Punkty: 3,00 z 3,00

We have the tasks with the following priorities in the access to a resource (a larger number is a higher priority):

Process number	1	2	3	4	5	6
Priority	45	44	39	38	42	31

The scheduling policy is preemptive, with the decision time constraint based on time slicing.

The current process is number 4. What process will get the resource in the nearest decision? Provide its priority.

Odpowiedź: 45 ✔

Poprawna odpowiedź to: 45

Pytanie 16

Poprawnie

Punkty: 3,00 z 3,00

The organization of memory and processor is word-based. A word means 16 bits. (int also takes 1 word) Hexadecimal values are preceded by a # character.

variable a has the value #a0c0

variable b has the value #a0a0

variable c has the value #a0a5

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): #c100

address of subroutine A #1010

stack frame before calling subroutine A #c105

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 contents of the stack at label point C. Subroutine A is called A(c,b,a); from address #10a0.

regardless of the programming language, the subroutine header A has the form

```
A(int x,y,z);
{
        int p = z-y;
        int q = x-y;
C: ...
}
```

The content of the cell at address #c0fb: dynamic link ✔

Address	content
#c100	????
#c0ff	#a0a5
#c0fe	#a0a0
#c0fd	#a0c0
#c0fc	#10a1
#c0fb	#c105
#c0fa	#0005
#c0f9	#0020
#c0f8	????

Twoja odpowiedź jest poprawna.

Poprawna odpowiedź to:

The organization of memory and processor is word-based. A word means 16 bits. (int also takes 1 word) Hexadecimal values are preceded by a # character.

variable a has the value #a0c0

variable b has the value #a0a0

variable c has the value #a0a5

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): #c100

address of subroutine A #1010

stack frame before calling subroutine A #c105

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 contents of the stack at label point C. Subroutine A is called A(c,b,a); from address #10a0.

regardless of the programming language, the subroutine header A has the form

```
A(int x,y,z);
{
        int p = z-y;
        int q = x-y;
C: ...
}
```

The content of the cell at address #c0fb:[dynamic link]

Address	content
#c100	????
#c0ff	#a0a5
#c0fe	#a0a0
#c0fd	#a0c0
#c0fc	#10a1
#c0fb	#c105
#c0fa	#0005
#c0f9	#0020
#c0f8	????

Pytanie 17

Poprawnie

Punkty: 3,00 z 3,00

page	history of R
0	011000
1	011100
2	010001
3	010110
4	001011
5	001100
6	000011
7	000100

Using the above table of the history of R bit for the pages in LRU swapping, which page will be sent to the disk first? The oldest bit R is on the left. Provide a page number.

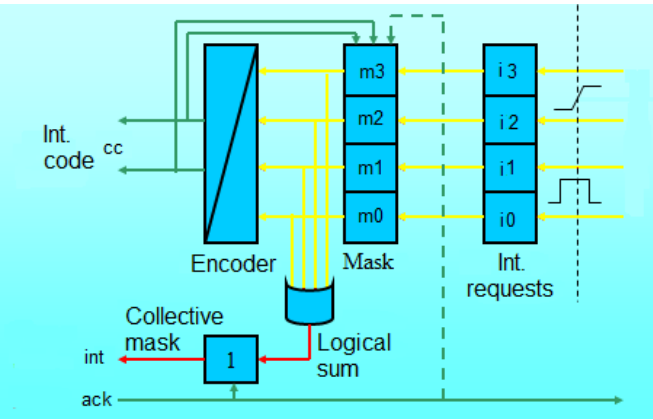
Odpowiedź: 6 ✔

Poprawna odpowiedź to: 6

Pytanie 18

Poprawnie

Punkty: 3,00 z 3,00



In the given interrupt controller structure, the interrupt mask is 1110 (from m3 to m0), and interrupts 0011 (from i3 to i0) are reported.

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: 1 ✔

Poprawna odpowiedź to: 1