Operating System Quiz-2

*Required

Email address *

maheeth2000@gmail.com

Name *

Maramreddy Maheeth Reddy

Roll Number *

1801CS31

1- What is Dynamic loading?

- a) loading multiple routines dynamically
- b) loading a routine only when it is called
- c) loading multiple routines randomly
- d) none of the mentioned

Clear selection

2- Which of the following is TRUE?

- a) Overlays are used to increase the size of physical memory
- b) Overlays are used to increase the logical address space
- c) When overlays are used, the size of a process is not limited to the size of the physical memory
- d) Overlays are used whenever the physical address space is smaller than the logical address space

Clear selection

3- Which of the following page replacement algorithms suffers from Belady's anomaly?

- a) FIFO
- b) LRU
- c) Optimal Page Replacement
- d) Both LRU and FIFO

Clear selection

4- Increasing the RAM of a computer typically improves performance because:

- a) Virtual memory increases
- b) Larger RAMs are faster
- c) Fewer page faults occur
- d) Fewer segmentation faults occur

Clear selection

5- In contiguous memory allocation _____

- (●) a) each process is contained in a single contiguous section of memory
- ( ) b) all processes are contained in a single contiguous section of memory
- ( ) c) the memory space is contiguous
- ( ) d) none of the mentioned

Clear selection

6- The relocation register helps in _____

- ( ) a) providing more address space to processes
- ( ) b) a different address space to processes
- (●) c) to protect the address spaces of processes
- ( ) d) none of the mentioned

Clear selection

7- The time taken to move the disk arm to the desired cylinder is called the _____

- ( ) a) positioning time
- ( ) b) random access time
- (●) c) seek time
- ( ) d) rotational latency

Clear selection

8- The time taken for the desired sector to rotate to the disk head is called _____

- a) positioning time
- b) random access time
- c) seek time
- d) rotational latency

Clear selection

9- What is the mounting of file system?

- a) crating of a filesystem
- b) deleting a filesystem
- c) attaching portion of the file system into a directory structure
- d) removing the portion of the file system into a directory structure

Clear selection

10- When the valid – invalid bit is set to valid, it means that the associated page _____

- a) is in the TLB
- b) has data in it
- c) is in the process's logical address space
- d) is the system's physical address space

Clear selection

11- A computer system supports 32-bit virtual addresses as well as 32-bit physical addresses. Since the virtual address space is of the same size as the physical address space, the operating system designers decide to get rid of the virtual memory entirely. Which one of the following is true?

- a) Efficient implementation of multi-user support is no longer possible
- b) The processor cache organization can be made more efficient now
- c) Hardware support for memory management is no longer needed
- d) CPU scheduling can be made more efficient now

Clear selection

12- A CPU generates 32-bit virtual addresses. The page size is 4 KB. The processor has a translation look-aside buffer (TLB) which can hold a total of 128 page table entries and is 4-way set associative. The minimum size of the TLB tag is:

- a) 11
- b) 13
- c) 15
- d) 20

Clear selection

13- Assume that there are 3 page frames which are initially empty. If the page reference string is 1, 2, 3, 4, 2, 1, 5, 3, 2, 4, 6, the number of page faults using the optimal replacement policy is_____.

- a) 5
- b) 6
- c) 7
- d) 8

Clear selection

14- Normally user programs are prevented from handling I/O directly by I/O instructions in them. For CPUs having explicit I/O instructions, such I/O protection is ensured by having the I/O instructions privileged. In a CPU with memory mapped I/O, there is no explicit I/O instruction. Which one of the following is true for a CPU with memory mapped I/O?

- a) I/O protection is ensured by operating system routine(s)
- b) I/O protection is ensured by a hardware trap
- c) I/O protection is ensured during system configuration
- d) I/O protection is not possible

Clear selection

15- CPU generally handles an interrupt by executing an interrupt service routine

- a) As soon as an interrupt is raised
- b) By checking the interrupt register at the end of fetch cycle.
- c) By checking the interrupt register after finishing the execution of the current instruction.
- d) By checking the interrupt register at fixed time intervals.

Clear selection

16- A particular disk unit uses a bit string to record the occupancy or vacancy of its tracks, with 0 denoting vacant and 1 for occupied. A 32-bit segment of this string has hexadecimal value D4FE2003. The percentage of occupied tracks for the corresponding part of the disk, to the nearest percentage is

- a) 12
- b) 25
- c) 38
- d) 44

Clear selection

17- In _____ disk scheduling algorithm, the disk head moves from one end to other end of the disk, serving the requests along the way. When the head reaches the other end, it immediately returns to the beginning of the disk without serving any requests on the return trip

- a) LOOK
- b) SCAN
- c) C-LOOK
- d) C-SCAN

Clear selection

18- If there are 32 segments, each of size 1Kb, then the logical address should have _____

- a) 13 bits
- b) 14 bits
- c) 15 bits
- d) 16 bits

Clear selection

19- When there is a large logical address space, the best way of paging would be _____

- a) not to page
- b) a two level paging algorithm
- c) the page table itself
- d) all of the mentioned

Clear selection

20- The mean time to failure of a mirrored disk depends on _____I) the mean time to failure of individual disks II) the mean time to repair

- a) Only I
- b) Only II
- c) Both I and II
- d) Neither I nor II

Clear selection

21- When two users keep a subdirectory in their own directories, the structure being referred to is _____

- a) tree structure
- b) cyclic graph directory structure
- c) two level directory structure
- d) acyclic graph directory

Clear selection

22- When the entries in the segment tables of two different processes point to the same physical location _____

- a) the segments are invalid
- b) the processes get blocked
- c) segments are shared
- d) all of the mentioned

Clear selection

23- Swapping _____ be done when a process has pending I/O, or has to execute I/O operations only into operating system buffers.

- a) must
- b) can
- c) must never
- d) maybe

Clear selection

24- Consider a storage disk with 4 platters (numbered as 0, 1, 2 and 3), 200 cylinders (numbered as 0, 1, ... , 199), and 256 sectors per track (numbered as 0, 1, ... 255). The following 6 disk requests of the form [sector number, cylinder number, platter number] are received by the disk controller at the same time: [120, 72, 2], [180, 134, 1], [60, 20, 0], [212, 86, 3], [56, 116, 2], [118, 16, 1] Currently head is positioned at sector number 100 of cylinder 80, and is moving towards higher cylinder numbers. The average power dissipation in moving the head over 100 cylinders is 20 milliwatts and for reversing the direction of the head movement once is 15 milliwatts. Power dissipation associated with rotational latency and switching of head between different platters is negligible. The total power consumption in milliwatts to satisfy all of the above disk requests using the Shortest Seek Time First disk scheduling algorithm is

- a) 45
- b) 80
- c) 85
- d) None of the above

Clear selection

25- Feedback queues

- a) are very simple to implement
- b) dispatch tasks according to execution characteristics
- c) are used to favour real time tasks
- d) require manual intervention to implement properly

Clear selection

26- The _____ time in a swap out of a running process and swap in of a new process into the memory is very high.

- (●) a) context – switch
- ( ) b) waiting
- ( ) c) execution
- ( ) d) all of the mentioned

Clear selection

27- Spooling _____

- ( ) a) holds a copy of the data
- ( ) b) is fast memory
- (●) c) holds the only copy of the data
- ( ) d) holds output for a device

Clear selection

28- If the number of cycles spent busy – waiting is not excessive, then _____

- ( ) a) interrupt driven I/O is more efficient than programmed I/O
- (●) b) programmed I/O is more efficient than interrupt driven I/O
- ( ) c) both programmed and interrupt driven I/O are equally efficient
- ( ) d) none of the mentioned

Clear selection

29- The _____ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory, and then starts the operating system.

- a) main
- b) bootloader
- c) bootstrap
- d) rom

Clear selection

30- In linked allocation _____

- a) each file must occupy a set of contiguous blocks on the disk
- b) each file is a linked list of disk blocks
- c) all the pointers to scattered blocks are placed together in one location
- d) none of the mentioned

Clear selection

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