OS TEST3 QUESTIONS NOV 20th 2020

1. Which of the following is not one of the simultaneous conditions for deadlocks to occur in a system?
(a) mutual exclusion (b) hold and wait (c) preemption (d) circular wait

2. Which of the following is a correct statement regarding the system resource allocation graphs?
(a) request edge points only to a resource (b) assignment edge points to a resource
(c) request edge points to an instance (d) assignment edge does not point to an instance

3. Which of the following is the correct method used in Linux for handling deadlocks?
(a) deadlock prevention/avoidance (b) ignore the deadlock (c) deadlock occurrence and recovery (d) uninstall the OS

4. We cannot prevent deadlocks by denying the mutual-exclusion condition, because
(a) some system resources are non-sharable (b) mutual exclusion is difficult to implement
(c) mutex lock is simultaneously shared by various threads (d) none of the above

5. Which of the following is the most practical method for deadlock prevention?
(a) no hold and wait (b) no circular wait (c) pre-emption (d) no mutual exclusion

6. Imposing a lock ordering cannot guarantee the prevention of deadlocks in a system, because
(a) lock ordering cannot be implemented (b) locks are ineffective in deadlock prevention
(c) locks can be acquired dynamically (d) there is a limit on the number of locks in the system

7. Low device utilization and reduced system throughput are possible side effects of deadlock _____
(a) prevention (b) detection (c) avoidance (d) mitigation

8. Which of the following techniques requires the knowledge of the complete sequence of requests and releases for each thread?
(a) deadlock prevention (b) deadlock detection (c) deadlock avoidance (d) deadlock mitigation

9. Which of the following algorithms requires each thread to declare the maximum number of resources of each type that it may need?
(a) deadlock prevention (b) deadlock detection (c) deadlock avoidance (d) deadlock mitigation

10. The resource-allocation state is defined by the number of available and allocated ____ and the maximum demands of the ____.
(a) resources, threads (b) threads, resources (c) instances, resources (d) threads, instances

11. This problem pertains to processes only accessing legal addresses. Let the base register value be 500050 and the limit register value be 122500. The legally accessible address for this program will be
(a) 622550 (b) 622549 (inclusive) (c) 622551 (d) 622500

12. Which of the following is a step wherein the binding of instructions and data to memory addresses cannot be done?
(a) compile time (b) load time (c) run time (d) schedule time

13. Which among the following solutions to the dynamic storage allocation problem is faster?
(a) first fit (b) best fit (c) average fit (d) worst fit

14. According to the 50-percent rule of memory allocation, ___ of the memory may turn out to be unusable.
(a) half (b) one-fourth (c) one-third (d) one-eighth

15. Given the size of the logical address space as 2^{10} and the size of a page as 2^2 bytes, then the page offset is ___ bits
(a) 10 (b) 8 (c) 12 (d) 2

16. The single system-wide data structure maintained by the OS to manage the allocation details of the physical memory is called
(a) page table (b) frame table (c) TLB (d) PCB

17. In the case of ___ while a process is executing, some pages will be in memory whereas some will be in the disk.
(a) swapping (b) paging (c) demand paging (d) fragmentation

18. Let the probability of page fault be 0, the memory access time be 10 nano seconds, then the effective access time will be ___ nano seconds
(a) 10 (b) 0.1 (c) 0 (d) 1

19. The technique which allows the parent and child processes initially to share the same pages is called
(a) copy-on-read (b) copy-on-write (c) read after write (d) write after read

20. Which of the following page replacement algorithms requires future knowledge of the reference string?
(a) LRU (b) FIFO (c) LFU (d) OPT

21. Consider the following command. What is this command most likely to do?
renice -n 30 -p 14345
a) change the nice value of process 14345 to 30
b) change the nice value of process 14345 to 0
c) throw an error
d) change the priority value of process 14345 to 19

22. The function sched_getparam returns:
a) a struct sched_param structure
b) an integer
c) nothing
d) a void pointer

23. The line pthread_attr_setschedpolicy(&tattr, SCHED_RR); in a C program will
a) Change the scheduling policy of the current process
b) Change the scheduling policy of the current thread
c) Change the scheduling policy of all subsequent threads created
d) Change the scheduling policy of subsequent threads depending on the arguments passed to pthread_create()

24. Which of the following members are supported in the sched_param structure in the POSIX implementation?
a) sched_priority
b) sched_policy
c) sched_nice
d) All of the above

25. The function sched_setparam(0, &sp)
a) Sets the priority of the process pointed to by sp to 0
b) Sets the policy of the process pointed to by sp to SCHED_OTHER
c) Sets the paramaters of the current process to the values in the structure sp
d) Sets the paramaters of all child processes to the values in the structure sp

26. Which flag is not associated with any scheduling policy when using chrt command ?
a) -o
b) -b
c) -d
d) -s

27. Which one of the following may be one of the outputs when you run “chrt -m” ?
a) SCHED_OTHER min/max priority : 1/99

b) SCHED_FIFO min/max priority : 0/0
c) SCHED_IDLE min/max priority: 1/99
d) SCHED_DEADLINE min/max priority: 0/0

28. Which of the following scheduling class implements SCHED_NORMAL and SCHED_BATCH policies?
a) kernel/sched.c
b) kernel/sched_fair.c
c) kernel/sched_rt.c
d) None of the above

29. Is it possible to view and adjust SCHED_RR quantum in newer Linux versions? Please select the correct option.
a)No, it is not possible.
b)Yes, it is possible. The default quantum is 100 ms.
c)Yes, it is possible. The default quantum is 10 ms.
d)Yes, it is possible. The default quantum is 50 ms.

30. Which of the following are possible errors that you can encounter while using pthread_attr_setschedparam() ?
a) EINVAL and ENOTSUP
b) ENXIO and ENOTSUP
c) ENOSYS and ENOTSUP
d) ENXIO and ENSYS