

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI

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Course Title : OPERATING SYSTEMS

Course No CS C372

Component : Compre

Closed Book Component

Weightage : 12.5%

1. Pick the odd one out
 - a. Hold and wait
 - b. No preemption
 - c. Circular wait
 - d. Mutual exclusion
2. Which of the statement is true
 - a. WFG can be derived from RAG
 - b. RAG can be derived from WFG
 - c. Both RAG & WFG give the same amount of information
 - d. There is no connection between RAG & WFG
3. A deadlock victim is not chosen on the basis of
 - a. Priority of the process
 - b. how much work the process has done
 - c. How far it is from the completion
 - d. How many times it has been involved in the deadlocks
 - e. How many times it has been chosen as the deadlock victim
 - f. How many resources it is holding
4. Which of the statement is not true
 - a. In safe state, there can be no deadlocks
 - b. Transition from unsafe state to safe state is not possible
 - c. A deadlock is a sequence of unsafe state
 - d. Unsafe state guarantees deadlock
5. Mark the false statement. In deadlock prevention
 - a. We prevent the 3 necessary conditions of mutual exclusion, non preemption and hold and wait
 - b. We prevent circular wait
 - c. The degree of concurrency is more compared to deadlock avoidance
 - d. We do not require knowledge of future process resource request
6. If n processes were involved in a deadlock, aborting how many processes would resolve the deadlock
 - a. $n/2$
 - b. 1
 - c. $(n+1)/2$
 - d. Cannot say

7. If n processes were involved in a deadlock, the max. no of deadlock victims needed to resolve the deadlock is
- $n/2$
 - 1
 - $(n+1)/2$
 - Cannot say
8. Logical & physical addresses differs in
- Compile time binding
 - Load time binding
 - Execution time binding
 - All the above
 - B & c
9. For single page replacement the minimum no. of pointer changes required in LRU stack implementation is
- 1
 - 2
 - 3
 - 4
10. Which placement algorithm leaves the biggest hole?
- Best fit
 - First fit
 - Next fit
 - Worst fit
11. Internal fragmentation does not occur in
- Fixed partitioning
 - Dynamic partitioning
 - Paging
 - Demand Paging
12. External fragmentation occur in
- Paging
 - Segmentation
 - Demand paging
 - Fixed Partitioning
13. In CPU scheduling, starvation can occur in
- FCFS
 - SJF
 - RR
 - All the above

14. In CPU scheduling, waiting time of a process is
 - a. The time it spend on the process
 - b. The time it spend on I/O
 - c. The total time it spend in ready queue
 - d. Sum total of a, b and c
15. Chose the most appropriate statement concerning links in Unix
 - a. Hard links allow only files to be shared across the file systems
 - b. Hard links allow sharing of directories with in same file system
 - c. Soft links allow sharing of files across file system
 - d. Soft link allow sharing of files and directories across file system
16. Choose the most appropriate statement concerning links in Unix
 - a. Soft linked files have same inode number
 - b. Hard linked directories have same inode number
 - c. Soft linked files have diff inode number
 - d. Soft linking 2 files cause an increase number of links of either file.
17. CPU generates
 - a. Physical address
 - b. Logical address
 - c. Both physical and logical address
 - d. Neither physical nor logical
18. In simple paging, the size of the page table is governed by
 - a. Processor's address line
 - b. Processor's word size
 - c. Size of the program
 - d. All the above
19. Lower bound of the number of page faults given by
 - a. FIFO page replacement
 - b. Optimal page replacement
 - c. LRU page replacement
 - d. Second chance page replacement
20. Pick the odd one out
 - a. Additional ref. Bits page replacement
 - b. Enhanced second chance page replacement
 - c. LRU page replacement
 - d. Second chance page replacement

21. LRU is diff t implement becuz
- Time of ref of each page needs to be recorded
 - Needs H/W support beyond TLB register
 - Search of page table is required to find LRU page
 - All the above
22. A processes' logical address space is bigger than the physical address space. In order to execute the process we can
- Increase the size of the cache
 - Use TLB register
 - Increase the size of the hard disk
 - Use overlay
23. Aging is used
- Avoid starvation
 - Increase priority of the process
 - Decrease priority of the process
 - A & b
24. CPU protection in dual mode is done by
- Base and Limit regi
 - Privileged instructions
 - Timer
 - System calls
25. FCFS CPU scheduling works best in terms of average waiting time when (Random ordering of processes)
- There is a lot of skew in burst times of processes
 - There is less skew in burst times of the processes
 - Burst times of all processes are equal
 - Distribution of burst times does not affect the average waiting time
26. In RR CPU scheduling the average waiting time
- Does not depend on time quantum
 - Depends on time quantum
 - Independent of order of processes
 - Independent of order of processes and time quantum
27. Which of the following statement is true about Multi level queue scheduling
- Processes can move btw queues
 - All queues use the same scheduling algo
 - Ideal for s/m where there is clear cut classification of processes in terms of priority
 - All are true

28. In multilevel feedback queue scheduling
- I/O bound processes will get moved to low priority queue
 - CPU bound processes will get moved to low priority queue
 - Starvation can not be prevented
 - All queues have different scheduling algo
29. A CPU scheduling algo should ideally try to
- Max. CPU utilization, Max. throughput, Max response time, and Min avg waiting time.
 - Max Cpu utilization, throughput, response time, avg wait time
 - Max CPU utilization, throughput, Min response time, avg wait time
 - Max CPU utilization, response time, Min throughput, avg wait time
30. Which of the following is not a valid state transition
- New to ready
 - Ready to running
 - Ready to Exit
 - Blocked to running
 - Blocked to exit
31. Which of the following is not an element of PCB
- Process identifiers
 - Control & status regi
 - S/M stack
 - Stack pointers
 - Process privileges info
32. The diff btw interrupt & trap is
- Trap is associated with the execution of the current instruction while interrupt is external to execution of current instruction
 - Interrupt is associated with the execution of the current instruction while trap is external to execution of current instruction
 - Interrupt is associated with handling errors while trap is associated with handling external asynchronous events
 - There is no difference btw the 2

33. RR CPU scheduling algo favors
 - a. CPU bound processes
 - b. I/O bound processes
 - c. It is fair to all processes
 - d. Favors CPU bound processes with large time quantum

34. In the additional ref bit algo., the 8 bit history register value for a page is 11010000. This value indicates that
 - a. The page has not been used for last 4 units and is used 3 times in the last 8 units of time
 - b. The page has not been used for last 4 units and is used 3 times in the last 3 units of time
 - c. The page has not been used for last 2 units and is used 3 times in the last 4 units of time
 - d. The page has been used for last 2 units and is used 3 times in the last 4 units of time

35. Choose the most correct statement about the second chance LRU algorithm
 - a. When a page gets second chance its ref. Bit is set to 1
 - b. When all the page ref. Bits are found to be set to 1, the algo degenerates to FIFO
 - c. When all the page ref. Bits are found to be set to 0, the algo degenerates to FIFO
 - d. Both (a) and (b)

36. In case of Enhanced second chance algo, the ref bit and modify bit ordered pair for 2 pages, P1 & P2 are (0,0) & (1,1) respectively. then
 - a. P1 will be replaced
 - b. P2 will be replaced
 - c. Any of them could be replaced
 - d. None of the 2 pages can be replaced and a third page should be considered

37. Consider the following ref strings

{0,2,4,1,1,4,5,7}

{2,3,2,5,6,3,2,4}

FIFO page replacement algo with 3 frames would give lesser number of faults

 - a. String I
 - b. String II
 - c. Same for both strings
 - d. Insufficient data

38. Time to position the head on the disk is
- Seek time
 - Access time
 - Transmission time
 - Rotational latency
39. Analysis of a resource allocation graph results in the following resource and process dependency
- $P1 \rightarrow R1 \rightarrow P2 \rightarrow R2 \rightarrow P1$
 $P3 \rightarrow R2$
- P1 and P3 are in deadlock
 - P1 and P2 are in deadlock
 - P2 and P3 are in deadlock
 - There is no deadlock
40. What is the other name given to FCFS algo
- Elevator algo
 - Search algo
 - End to end algo
 - Cyclic algo
41. Which of the following is true
- A process can spawn many processes
 - A thread can spawn many processes
 - A thread is a light weight process
 - A user process can not spawn a thread
42. Which of the following statement about semaphore is false
- It is an integer that can act as counter
 - Its value depends on number of resources to be shared
 - Its value can be greater than 1
 - It can be used for process synchronization
43. Which of the following is not a stack algo
- FIFO
 - Clock
 - LRU
 - All the above
 - None of the above

44. A system with 32 bit logical address employs single level paging with page size of 4K will require a page table of size _____ assuming that each page table entry is 4 bytes long
- 4M
 - 4K
 - 8K
 - None of the above
45. Which of the following does not cause an asynchronous interrupt
- Check for burst exceeding time quantum each time a process is scheduled
 - S/m call
 - I/O completion
 - Power failure detection logic
 - None of the above
46. To combine paging and segmentation
- Each page is broken into multiple segments
 - Each segment is broken into multiple pages
 - Each segment corresponds to a page
 - A process can either apply paging or segmentation
47. The min. no. of frames allotted to a process is governed by
- Amount of physical memory available
 - Computer architecture
 - Both a & b
 - None
48. Logical to physical address translation can be done using
- Paging
 - Segment table
 - TLB regi
 - All
49. A linear page table typically indexed by
- logical page number
 - Physical page number
 - Logical page offset
 - Physical page offset
50. H/W support is needed for physical address relocation in order to
- Have accurate addressing
 - Speed up the process
 - Involve the processor
 - None