KATHMANDU UNIVERSITY
End Semester Examination[C]
2014

Marks Scored:

Level : B. E. Course : COMP 307
Year : III Semester : I
Exam. Roll No: Time: 30 mins. F.M : 10

Registration No.: Date :

SECTION "A"
[20×0.5=10 marks]

1. In _____ OS, the response time is very critical.
   [ ] Multitasking [ ] Batch [ ] Online [ ] Real-time

2. In Priority Scheduling a priority number (integer) is associated with each process. The CPU is allocated to the process with the highest priority (smallest integer = highest priority). The problem of, Starvation? Low priority processes may never execute is resolved by _____.
   [ ] Terminating the process [ ] Aging
   [ ] Mutual Exclusion [ ] Semaphore

3. Super computers typically employ _____.
   [ ] Real time Operating system [ ] Multiprocessors OS
   [ ] desktop OS [ ] None of the above

4. A process refers to 5 pages, A, B, C, D, E in the order : A, B, C, D, A, B, E, A, B, C, D, E. If the page replacement algorithm is **LRU**, the number of page transfers with an empty internal store of 3 frames is :
   [ ] 8 [ ] 10 [ ] 9 [ ] 7

5. The program is known as _____ which interacts with the inner part of called kernel.
   [ ] Compiler [ ] Device Driver [ ] Protocol [ ] Shell

6. When a OS create a process at the explicit request of another process, the action is referred as v_____
   [ ] multithreading [ ] context switching
   [ ] spawning [ ] multiprocessing

7. The problem of fragmentation arises in _____.
   [ ] Static storage allocation [ ] Stack allocation storage
   [ ] Stack allocation with dynamic binding [ ] Heap allocation

8. Which one of the following scheduling algorithm has usually the better average response time in comparison to others.
   [ ] Round Robin [ ] First Come First Serve
   [ ] Shortest Run time First [ ] Shortest Job First

9. Routine is not loaded until it is called. All routines are kept on disk in a relocatable load format. The main program is loaded into memory & is executed. This type of loading is called _____
   [ ] Static loading [ ] Dynamic loading [ ] Dynamic linking [ ] Overlays

10. Which one of the process scheduling algorithms is preemptive?

[ ] Shortest Run time first and Shortest Job first
[ ] Round Robin and First Come First serve
[ ] Shortest Run time first and Round Robin
[ ] First Come First serve and Shortest Run time first

11. The mechanism that brings a page into memory only when it is needed is called _____
[ ] Segmentation [ ] Fragmentation
[ ] Demand Paging [ ] Page Replacement

12. The Banker's algorithm is used
[ ] to prevent deadlock in operating systems [ ] to detect deadlock in operating systems
[ ] to rectify a deadlocked state [ ] to avoid the deadlock

13. The number of processes completed per unit time is known as _____.
[ ] Output [ ] Throughput [ ] Efficiency [ ] Capacity

14. The state of a process after it encounters an I/O instruction is _____.
[ ]Ready [ ] Blocked/Waiting [ ] Idle [ ] Running

15. Multiprogramming systems _____.
[ ] Are easier to develop than single programming systems
[ ] Execute each job faster
[ ] Execute more jobs in the same time
[ ] Are used only on large main frame computers

16. If the Disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98,37,14,124,65,67.
[ ] 310 [ ] 324 [ ] 315 [ ] 321

17. The process related to process control, file management, device management, information about system and communication that is requested by any higher level language can be performed by _____.
[ ] Editors [ ] Compilers [ ] System Call [ ] Caching

18. Virtual memory is _____.
[ ]An extremely large main memory
[ ] An extremely large secondary memory
[ ] An illusion of extremely large main memory
[ ] A type of memory used in super computers.

19. The problem of thrashing is effected scientifically by _____.
[ ]Program structure [ ] Program size
[ ] Primary storage size [ ] None of the above

20. Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?
[ ] Time-sharing [ ] SPOOLing
[ ] Preemptive scheduling [ ] Multiprogramming

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SECTION "B"

[7Q×4=28 marks]

Attempt any ***SEVEN***

1. How does the lack of global clock affect Distributed Operating System?

2. How does DMA increase system concurrency? How does it complicate hardware design?

3. Some systems automatically delete all user files when a user logs off or a job terminates, unless the user explicitly requests that they be kept; other systems keep all files unless the user explicitly deletes them. Discuss the relative merits of each approach.

4. Describe the different types of Operating System with example.

5. What is Critical Section Problem? What condition(s) when hold, will avoid Critical Section Problem?

6. Suggest the five requirements that the memory managers should satisfy.

7. Explain the term page fault. Explain the nature of the graph for the page fault while implementing the FIFO page replacement algorithm.

8. What is file? Describe the data structure associated with the file.

SECTION "C"

[2Q×6=12 marks]

9. What do you mean by semaphore? Discuss how the implementation of semaphore solves the problem of critical section? Illustrate with code snippets.

10. What do you define a process in Operating System? Explain the multilevel feed-back queuing scheduling algorithm in detail.

ANSWERS

MCQ	Answer
1	D
2	B
3	A
4	B
5	D
6	C
7	D
8	A
9	C
10	C
11	C
12	A
13	B
14	B
15	C
16	D
17	C
18	C
19	A
20	D