**Test 1 – Operating System**

1. The fork() system call the return value to the parent process and the child process are respectively
2. PID of child process, 1
3. **PID of child process, 0**
4. PID of child process, PID of parent process
5. None of the above
6. Consider a vertical memory system with FIFO page replacement algorithm policy. For an arbitrary page, access pattern increasing the number of page frames in main memory will
   1. Always decrease the number of page faults
   2. **Always increase the number of page faults**
   3. Sometimes increases the number of page faults
   4. Never effects the number of page faults

Soln : Due to phenomenon of Belady’s anomaly.

1. The strategy that allocates the smallest possible chunk of disk space that is sufficient to the file is
2. Nearest fit
3. **Best fit**
4. Worst fit
5. First fit
6. Which of the following is not an advantage of thread?
7. **Inter Process Communication**
8. Less memory space occupied by thread
9. Less time to create and terminate than a process
10. Context switching is faster
11. Consider a system which has n resources of the same type. The m resources are shared among three processes A, B and C which have high demands of 3, 5, 6 respectively. For what value of n will deadlock not occur?
    1. 7
    2. 3
    3. 6
    4. **15**
12. Consider the following page trace: 4,3,2,1,4,3,5,4,3,2,1,5. What is the percentage of page faults using FIFO for 4 frames at a time in memory?
    1. 63%
    2. **75%**
    3. 83%
    4. 94%
13. What is the shortest form of inter process communication in unix?
    1. Semaphore
    2. Pipes
    3. **Signal**
    4. All of these
14. A system uses FIFO page replacement algorithm. It has 3 page frames with no page loaded. First 50 pages are accessed in some order and the same pages are accessed in the reverse order. What is the number of page faults?
    1. 98
    2. 96
    3. **97**
    4. 95
15. A process executes the following segment of code:

for (i=1;i<10;i++)

{

fork();

}

The number of new process created are?

1. 1024
2. **1023**
3. 1025
4. 1028

Soln : if fork is called for n times, the number of child process or new process created are : 2^n – 1.

1. Listed below are some operating system abstractions (in left column) and the hardware components. Which matching pairs is correct?
   1. Thread 1. Interrupt
   2. Virtual Address Space 2. Memory
   3. File system 3. CPU
   4. Signal 4. Disk
2. **a-2, b-4, c-3, d-1**
3. a-1, b-2, c-3, d-4
4. a-3, b-2, c-4, d-1
5. a-4, b-1, c-2, d-3
6. Starvation of longer jobs happens in which one of the following scheduling algorithm?
   1. **Shortest Run Time First**
   2. Round Robin
   3. Highest Response Ratio Next
   4. First Come First Served
7. M : 1 multi-threading model is used in which of the following operating systems?
   1. **Windows NT**
   2. Windows 95
   3. UNIX
   4. Ra
8. In which of the page table the logical address space is broken into multiple page table?
   1. Inverted Page Table
   2. **Hierarchical Page Table**
   3. Hashed Page Table
   4. None of the above
9. Cache and interleaved memories are ways of speeding up memory access between CPUs and slower RAM. Which memory models are best suited (i.e. improves performance the most ) for which program?
10. Cached memory is best suited for small loops.
11. Interleaved memory is best suited for small loops.
12. Interleaved memory is best suited for large loops.
13. Cache Memory is best suited for large sequential code.
14. i and ii are true
15. **i and iii are true**
16. iv and ii are true
17. iv and iii are true
18. The correct matching for the following pairs is :
19. Disk Scheduling 1. Round Robin
20. Batch Processing 2. SCAN
21. Time sharing 3. LIFO
22. Interrupt Processing 4. FIFO
    1. A-3, b-4, c-2, d-1
    2. A-4, b-3, c-2, d-1
    3. **A-2, b-4, c-1, d-3**
    4. A-2, b-1, c-4, d-3