1. To access the services of operating system, the interface is provided by the

(a) System call (\*)

(b) API

(c) Assembly instructions

(d) Library

2. What is the main function of the command interpreter?  
a) to get and execute the next user-specified command (\*)  
b) to provide the interface between the API and application program  
c) to handle the files in the operating system  
d) none of the mentioned

3 In the operating system, each process has its own?  
a) address space and global variables  
b) open files  
c) signals and signal handlers  
d) all of the mentioned (\*)

4. A process may be terminated due to  
a) normal exit  
b) fatal error  
c) killed by another process  
d) all of the mentioned (\*)

5. What is the ready state of a process?  
a) when the process is scheduled to run after some execution (\*)  
b) when the process is unable to run until some task has been completed  
c) when the process is using the CPU  
d) none of the mentioned

6. What is interprocess communication?  
a) communication within the process  
b) communication between two processes (\*)  
c) communication between two threads of the same process  
d) none of the mentioned

7. Which system call creates the child process and returns the process identifier of a terminated child?  
a) fork & wait (\*)  
b) fork & exit  
c) wait & fork   
d) fork and sleep

8. The address of the next instruction to be executed by the current process is provided by the  
a) CPU registers  
b) Program counter (\*)  
c) Process stack  
d) Pipe

9. A Process Control Block (PCB) does not contain which of the following?  
a) Code  
b) Stack  
c) Bootstrap program (\*)  
d) Data

10. The number of processes completed per unit time is known as   
a) Output  
b) Throughput (\*)  
c) Efficiency  
d) Capacity

11. The state of a process is defined by  
a) the final activity of the process  
b) the activity just executed by the process  
c) the activity to next be executed by the process  
d) the current activity of the process (\*)

12. The entry of all the PCBs of the current processes is in   
a) Process Register  
b) Program Counter  
c) Process Table (\*)  
d) Process Unit

13. What is the degree of multiprogramming?  
a) the number of processes executed per unit time  
b) the number of processes in the ready queue  
c) the number of processes in the I/O queue  
d) the number of processes in memory (\*)

14. What is the objective of multiprogramming?  
a) Have multiple processes running at all times   
b) Have multiple programs waiting in a queue ready to run  
c) To minimize CPU utilization  
d) At least one process available to a run all the time (\*)

15. Which of the following do not belong to queues for processes?  
a) Job Queue  
b) PCB queue (\*)  
c) Device Queue  
d) Ready Queue

16. When the process issues an I/O request   
a) It is placed in an I/O queue (\*)  
b) It is placed in a waiting queue  
c) It is placed in the ready queue  
d) It is placed in the Job queue

17. What is a long-term scheduler?  
a) It selects which process has to be brought into the ready queue (\*)  
b) It selects which process has to be executed next and allocates CPU  
c) It selects which process to remove from memory by swapping  
d) None of the mentioned

18. If all processes I/O bound, the ready queue will almost always be \_\_\_\_\_\_ and the Short term Scheduler will have a \_\_\_\_\_\_ to do.  
a) full, little  
b) full, lot  
c) empty, little (\*)  
d) empty, lot

19. The only state transition that is initiated by the user process itself is \_\_\_\_\_\_\_\_\_\_  
a) block (\*)  
b) wakeup  
c) dispatch  
d) none of the mentioned

20. Suppose that a process is in the “Blocked” state waiting for some I/O service. When the service is completed, it goes to the   
a) Running state  
b) Ready state (\*)  
c) Suspended state  
d) Terminated state

21. When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called?  
a) dynamic condition  
b) race condition (\*)  
c) essential condition  
d) critical condition

22. Which of the following requires a device driver?   
a) Register  
b) Cache  
c) Main memory  
d) Disk (\*)

23.  Cascading termination refers to the termination of all child processes before the parent terminates  
a) Normally (\*)  
b) Abnormally  
c) Normally or abnormally  
d) None of the mentioned

24. With \_\_\_\_\_\_\_\_\_\_\_\_\_ only one process can execute at a time; meanwhile, all other processes are waiting for the processor. With \_\_\_\_\_\_\_\_\_\_\_\_\_\_ more than one process can be running simultaneously each on a different processor.  
a) Multiprocessing, Multiprogramming  
b) Multiprogramming, Uniprocessing  
c) Multiprogramming, Multiprocessing (\*)  
d) Uniprogramming, Multiprocessing

25. In indirect communication between processes P and Q \_\_\_\_\_\_\_\_\_\_  
a) there is another process R to handle and pass on the messages between P and Q  
b) there is another machine between the two processes to help communication  
c) there is a mailbox to help communication between P and Q (\*)  
d) none of the mentioned

26. In the Zero capacity queue \_\_\_\_\_\_\_\_\_\_  
a) the queue can store at least one message  
b) the sender blocks until the receiver receives the message (\*)  
c) the sender keeps sending and the messages don’t wait in the queue  
d) none of the mentioned

27. How does the software trigger an interrupt?  
a) Sending signals to CPU through the bus  
b) Executing a special operation called system call (\*)  
c) Executing a special program called system program  
d) Executing a special program called interrupt trigger program

28. What is a trap/exception?  
a) hardware generated interrupt caused by an error  
b) software-generated interrupt caused by an error (\*)  
c) user-generated interrupt caused by an error  
d) none of the mentioned

29. Consider a set of n tasks with known runtimes r1, r2, … rn to be run on a uniprocessor machine. Which of the following processor scheduling algorithms will result in the maximum throughput?   
(a) Round-Robin  
(b) Shortest-Job-First (\*)  
(c) Highest-Response-Ratio-Next  
(d) First-Come-First-Served

30. A process executes the following code

for (i = 0; i < n; i++)

fork();

The total number of child processes created is   
(A) n  
(B) 2^n – 1 (\*)  
(C) 2^(n-1)  
(D) 2^(n+1) - 1;