

- 1) A process which has just terminated but has yet to relinquish its resources and parent yet has to clean this up is called
- A suspended process
 - A zombie process**
 - A blocked process
 - A terminated process
- 2) Which of the following defines response time?
- Time from the first character of input to the first character of output.
 - Time from the first character of input to the last character of output.
 - Time from the last character of input to the last character of output.
 - Time from the last character of input to the first character of output.**
- 3) In memory management, global page replacement is usually preferable to local page replacement because:
- most processes are well-behaved
 - most processes have small working sets
 - most processes have large working sets
 - the set of pages from which to choose is larger**
- 4) The Banker's Algorithm is an example of a technique for:
- deadlock prevention
 - deadlock avoidance**
 - deadlock detection
 - deadlock recovery
- 5) The threading model supported by the Linux operating system is:
- many-to-one
 - one-to-one**
 - one-to-many
 - many-to-many
- 6) Relocatable programs
- cannot be used with fixed partitions
 - can be loaded almost anywhere in memory**
 - do not need a linker
 - can be loaded only at one specific location
- 7) The following program: `main { if (fork () > 0) sleep(1000); }` results in the creation of
- an orphan process
 - zombie process**
 - a process that executes forever
 - none of the above
- 8) Consider the following program: `main () { int i =7; if (fork() == 0) { i += 10;} else { wait(0); printf ("%d", i);}}` . What will be the value of i
- 10
 - 7**
 - 17
 - Cannot be determined

9) High Paging Activity leads to

- A) Swapping
- B) Compaction
- C) Thrashing**
- D) External Fragmentation

10) The copy-on-write mechanism provides:

- A) an efficient way to create new processes
- B) a clever way to share virtual memory pages (at least temporarily)
- C) a way to avoid unnecessary page copying
- D) all of the above**

11) A user issues the following command sequence:

\$ a.out &

\$ bash

\$ a.out &

If the user kills the bash process, then which of the following is true?

- A. The second a.out process is also terminated**
- B. The second a.out process becomes a defunct process
- C. The first a.out process becomes a zombie process
- D. init process becomes parent of second a.out process

12) How many times printf() will be executed in the below mentioned program?

```
main() {  
    int i;  
    for (i = 0; i < 4; i++)  
        fork();  
    printf("my pid = %d\n", getpid());  
}
```

- A. 4
- B. 8
- C. 16**
- D. 32

13) When OS at the explicit request of another process creates a process, this action is

- A) Process Reentrancy
- B) Process Spawning**
- C) Process Synchronization
- D) Process preemtiveness

- 14) Deadlocks occur when sharing
- a. Reusable resources
 - b. Non-preemptable resources
 - c. Consumable resources
 - d. preemptable resources

A. a&d
B. a&c
C. b&d
D. a&b

15) Which technique was introduced because a single job could not keep the CPU and the I/O device busy :

- a)Time- Sharing
- b)SPOOLING
- c)Preemptive Scheduling
- d)Multiprogramming**

16) Consider the two concurrent processes P0 and P1 executes the respective codes :

Process P0 code

```
while(true)
{
W:_____
print('0');
print('0');
X:_____
}
```

Process P1 code

```
while(true)
{
Y:_____
print('1');
print('1');
Z:_____
}
```

What should be the semaphore operation on W,X,Y,Z to get the print O/P as 0011001100.....

- a) $W = p(T)$, $X = v(T)$, $Y = p(S)$, $Z = v(S)$ $S=T=1$;
- b) $W = p(T)$, $X = v(T)$, $Y = p(S)$, $Z = v(s)$ $S=1, T=0$;
- c) $W = p(T)$, $X = v(S)$, $Y = p(S)$, $Z = v(T)$ $S=T=1$;
- d) $W = p(T)$, $X = v(S)$, $Y = p(S)$, $Z = v(T)$ $T=1, S=0$;**

17) Which of the following memory allocation scheme suffers from External fragmentation?

- a)Segmentation**
- b)Pure demand paging
- c)Swapping
- d)Paging

18) Relocatable programs

- A) cannot be used with fixed partitions
- B) can be loaded almost anywhere in memory**
- C) do not need a linker
- D) can be loaded only at one specific location

19) Which signal is generated when we press ctrl-Z?

- A) SIGKILL
- B) SIGTSTP**
- C) SIGABRT
- D) SIGINT

20) Virtual memory is _____

- A) An extremely large main memory
- B) An extremely large secondary memory
- C) An illusion of extremely large main memory**
- D) A type of memory used in super computers

21) The Function “request_region” is used to

- A) Delete memory regions from the kernel
- B) Create new memory regions in the kernel
- C) Freezes the requested region so that it is unacceptable
- D) Allocates the I/O region to the driver**

22) I/O Mapped Memory means

- a) The I/O devices are mapped in the same Address Space thereby preventing memory access to those regions**
- b) The same address may be used for both I/O as well as Memory
- c) Only one instruction is required to talk to the hardware
- D) None of the above

23) inb_p is used to

- A) get a byte of data from specific port
- B) get a word of data from specific port
- C) get a byte of data from specific port with pausing**
- D) get a word of data from a specific port with pausing

24) Barriers in Device Drivers are used to

- A) Tell the compiler to maintain order before and after the barrier**
- B) Tell the compiler to maintain order only after the barrier
- C) Tell the compiler to ignore code around the barrier
- D) Tell the compiler to compile with greatest optimization

25) Which of the following functions should preferably be called when passing single value data from the user space to the kernel space in the IOCTL method implementation?

- A) copy_from_user
- B) copy_to_user
- C) put_user
- D) get_user**

26) Which of the following delayed execution methods allows sleeping inside the scheduled task?

- A) Work queues**
- B) Kernel timers
- C) Tasklets

D) Both (a) & (b)

- 27) The significance of `__put_user()` in GNU/Linux device driver is _____.
- a) facilitating slower data transfer to user space as compared to `__copy_to_user()`
 - b) facilitating slower data transfer to user space as compared to `copy_to_user()`
 - c) facilitating slower data transfer to user space as compared to `put_user()`
 - d) facilitating transfer of single values to user space without type checking**

28) `lsmod` works by reading the file

- A. `/proc/devices`
- B. `/proc/modules`**
- C. `/proc/device`
- D. `/proc/modinfo`

29) `register_chrdev()` does not require the argument

- A. device type**
- B. major number
- C. device name
- D. device operations

30) Choose the incorrect statement

- A. `ioctl` is a common interface used for device control.
- B. The implementation of `ioctl` is mostly done using a switch statement based on the command number
- C. The macro `_IOR(type,nr,datatype)` can be used to setup a `ioctl` command number with no arguments**
- D. The `ioctl` function has the format `unlock_ioctl(struct file *flip, unsigned int cmd, unsigned long arg)`

31) To debug the ports memory region through the `proc` file system, which file is concatenated

- A) interrupts
- B) devices
- C) `ioports`**
- D) `meminfo`

32) `jiffies` is abit variable

- A. 32
- B. 16
- C. 64**
- D. 8

33) Which one is implemented for blocking I/O operations in driver?

- A. `Waitqueue`**
- B. `Sleep`
- C. `wait`
- D. all of the above

34) What is the preferred mechanism to dynamically find out the IRQ number of a device?

- A) seeking
- B) Probing**
- C) Polling
- D) Masking

35) “kernel is tainted” message will be produced when the module is inserted without

- a)MODULE_AUTHOR
- b) MODULE_LICENSE**
- c) MODULE_VERSION
- d) MODULE_DESCRIPTION

36) IRQ Line Probing is applicable to

- a) sharable interrupt**
- b) non-sharable interrupt
- c) both
- d) none of the above

37) When using shared interrupts, if our driver handler is invoked but the hardware device has not generated the interrupt , what should the handler return

- a)IRQ_HANDLED
- b) IRQ_RESET
- c) IRQ_NONE**
- d) IRQ_CONTINUE

38) EXPORT_SYMBOL is used for

- a)export symbols to other modules**
- b) export symbols and hide it from other modules
- c) get symbols from other modules
- d) none of these

39) If you export any symbol from your driver, if you want to see the exported symbols,which file you need to refer_____

- a) /proc/ksyms
- b) /proc/symbols
- c) /proc/kallsyms**
- d) none of the above

40) Barriers in Device Drivers are used to

- A) Tell the compiler to maintain order before and after the barrier**
- B) Tell the compiler to maintain order only after the barrier
- C) Tell the compiler to ignore code around the barrier
- D) Tell the compiler to compile with greatest optimization

41) Which command is used to display disk consumption of a specific directory

- A. **du**
- B. ds
- C. dd
- D. dds

42) 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.

- a) 310
- b)324
- c)315
- d)321**

43)) Struct cdev *i_cdev field represents which kernel data structure of Device Driver ?

- A. file structure
- B. file operations structure
- C. inode structure**
- D. None of these

44) Header <linux/fs.h> is

- a) collection of file pointer
- b) collection of function pointer**
- c) objects of function
- d) its not a header file