UNIT IV FILE SYSTEMS
AND I/O SYSTEMS

1. In _____ information is recorded magnetically on platters.
a) magnetic disks
b) electrical disks
c) assemblies
d) cylinders
Answer: a
Explanation: None.

2. The heads of the magnetic disk are attached to a _____ that moves all the heads as a unit.
a) spindle
b) disk arm
c) track
d) none of the mentioned
Answer: b
Explanation: None.

3. The set of tracks that are at one arm position make up a _____
a) magnetic disks
b) electrical disks
c) assemblies
d) cylinders
Answer: d
Explanation: None.

4. The time taken to move the disk arm to the desired cylinder is called the _____

a) positioning time
b) random access time
c) seek time
d) rotational latency
Answer: c
Explanation: None.
5. The time taken for the desired sector to rotate to the disk head is called _____
a) positioning time
b) random access time
c) seek time
d) rotational latency
Answer: d
Explanation: None.
6. When the head damages the magnetic surface, it is known as _____
a) disk crash
b) head crash
c) magnetic damage
d) all of the mentioned
Answer: b
Explanation: None.
7. A floppy disk is designed to rotate _____ as compared to a hard disk drive.
a) faster
b) slower
c) at the same speed
d) none of the mentioned

Answer: b
Explanation: None.
8. What is the host controller?
a) controller built at the end of each disk
b) controller at the computer end of the bus
c) all of the mentioned
d) none of the mentioned
Answer: b
Explanation: None.
9. _____ controller sends the command placed into it, via messages to the _____ controller.
a) host, host
b) disk, disk
c) host, disk
d) disk, host
Answer: c
Explanation: None.
10. What is the disk bandwidth?
a) the total number of bytes transferred
b) total time between the first request for service and the completion on the last transfer
c) the total number of bytes transferred divided by the total time between the first request for service and the completion on the last transfer
d) none of the mentioned
Answer: c
Explanation: None.
1. Whenever a process needs I/O to or from a

disk it issues a _____
a) system call to the CPU
b) system call to the operating system
c) a special procedure
d) all of the mentioned
Answer: b
Explanation: None.
2. If a process needs I/O to or from a disk, and if the drive or controller is busy then _____
a) the request will be placed in the queue of pending requests for that drive
b) the request will not be processed and will be ignored completely
c) the request will be not be placed
d) none of the mentioned
Answer: a
Explanation: None.
3. Consider a disk queue with requests for I/O to blocks on cylinders.
98 183 37 122 14 124 65 67
Considering FCFS (first cum first served) scheduling, the total number of head movements is, if the disk head is initially at 53 is?
a) 600
b) 620
c) 630
d) 640
Answer: d

Explanation: None.
4. Consider a disk queue with requests for I/O to blocks on cylinders.
98 183 37 122 14 124 65 67
Considering SSTF (shortest seek time first) scheduling, the total number of head movements is, if the disk head is initially at 53 is?
a) 224
b) 236
c) 245
d) 240
Answer: b
Explanation: None.
5. Random access in magnetic tapes is _____ compared to magnetic disks.
a) fast
b) very fast
c) slow
d) very slow
Answer: d
Explanation: None.
6. Magnetic tape drives can write data at a speed _____ disk drives.
a) much lesser than
b) comparable to
c) much faster than
d) none of the mentioned
Answer: b
Explanation: None.

7. On media that use constant linear velocity (CLV), the _____ is uniform.
a) density of bits on the disk
b) density of bits per sector
c) the density of bits per track
d) none of the mentioned
Answer: c
Explanation: The farther a track is from the center of the disk.
8. SSTF algorithm, like SJF _____ of some requests.
a) may cause starvation
b) will cause starvation
c) does not cause starvation
d) causes aging
Answer: a
Explanation: None.
9. In the _____ algorithm, the disk arm starts at one end of the disk and moves toward the other end, servicing requests till the other end of the disk. At the other end, the direction is reversed and servicing continues.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK
Answer: b
Explanation: None.
10. In the _____ algorithm, the disk head moves from one end to the other, servicing

requests along the way. When the head reaches the other end, it immediately returns to the beginning of the disk without servicing any requests on the return trip.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK
Answer: c
Explanation: None.
11. In the _____ algorithm, the disk arm goes as far as the final request in each direction, then reverses direction immediately without going to the end of the disk.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK
Answer: a
Explanation: None.
1. The process of dividing a disk into sectors that the disk controller can read and write, before a disk can store data is known as _____
a) partitioning
b) swap space creation
c) low-level formatting
d) none of the mentioned
Answer: c
Explanation: None.

2. The data structure for a sector typically contains _____
a) header
b) data area
c) trailer
d) all of the mentioned
Answer: d
Explanation: None.
3. The header and trailer of a sector contain information used by the disk controller such as _____ and _____
a) main section & disk identifier
b) error correcting codes (ECC) & sector number
c) sector number & main section
d) disk identifier & sector number
Answer: b
Explanation: None.
4. The two steps the operating system takes to use a disk to hold its files are _____

a) partitioning & logical formatting
b) swap space creation & caching
c) caching & logical formatting
d) logical formatting & swap space creation
Answer: a
Explanation: None.
5. The _____ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory,

and then starts the operating system.
a) main
b) bootloader
c) bootstrap
d) rom
Answer: c
Explanation: None.
6. For most computers, the bootstrap is stored in _____
a) RAM
b) ROM
c) Cache
d) Tertiary storage
Answer: b
Explanation: None.
7. A disk that has a boot partition is called a _____
a) start disk
b) end disk
c) boot disk
d) all of the mentioned
Answer: c
Explanation: None.
8. Defective sectors on disks are often known as _____
a) good blocks
b) destroyed blocks
c) bad blocks
d) none of the mentioned
Answer: c

Explanation: None.
9. In SCSI disks used in high end PCs, the controller maintains a list of _____ on the disk. The disk is initialized during _____ formatting which sets aside spare sectors not visible to the operating system.
a) destroyed blocks, high level formatting
b) bad blocks, partitioning
c) bad blocks, low level formatting
d) destroyed blocks, partitioning
Answer: c
Explanation: None.
10. The scheme used in the above question is known as _____ or _____
a) sector sparing & forwarding
b) forwarding & sector utilization
c) backwarding & forwarding
d) sector utilization & backwarding
Answer: a
Explanation: None.
11. An unrecoverable error is known as _____
a) hard error
b) tough error
c) soft error
d) none of the mentioned
Answer: a
Explanation: None.
1. If one or more devices use a common set of wires to communicate with the computer

system, the connection is called _____
a) CPU
b) Monitor
c) Wirefull
d) Bus
Answer: d
Explanation: None.

2. A ____ a set of wires and a rigidly defined protocol that specifies a set of messages that can be sent on the wires.
a) port
b) node
c) bus
d) none of the mentioned
Answer: c
Explanation: None.
3. When device A has a cable that plugs into device B, and device B has a cable that plugs into device C and device C plugs into a port on the computer, this arrangement is called a _____
a) port
b) daisy chain
c) bus
d) cable
Answer: b
Explanation: None.
4. The _____ present a uniform device-access interface to the I/O subsystem, much

as system calls provide a standard interface between the application and the operating system.
a) Devices
b) Buses
c) Device drivers
d) I/O systems
Answer: c
Explanation: None.
5. A _____ is a collection of electronics that can operate a port, a bus, or a device.
a) controller
b) driver
c) host
d) bus
Answer: a
Explanation: None.
6. An I/O port typically consists of four registers status, control, _____ and _____ registers.
a) system in, system out
b) data in, data out
c) flow in, flow out
d) input, output
Answer: b
Explanation: None.
7. The _____ register is read by the host to get input.
a) flow in
b) flow out

c) data in
d) data out
Answer: c
Explanation: None.
8. The _____ register is written by the host to send output.
a) status
b) control
c) data in
d) data out
Answer: d
Explanation: None.
9. The hardware mechanism that allows a device to notify the CPU is called _____
a) polling
b) interrupt
c) driver
d) controlling
Answer: b
Explanation: None.
10. The CPU hardware has a wire called _____ that the CPU senses after executing every instruction.
a) interrupt request line
b) interrupt bus
c) interrupt receive line
d) interrupt sense line

Answer: a
Explanation: None.

11. The _____ determines the cause of the interrupt, performs the necessary processing and executes a return from the interrupt instruction to return the CPU to the execution state prior to the interrupt.
a) interrupt request line
b) device driver
c) interrupt handler
d) all of the mentioned
Answer: c
Explanation: None.
12. In general the two interrupt request lines are _____
a) maskable & non maskable interrupts
b) blocked & non maskable interrupts
c) maskable & blocked interrupts
d) none of the mentioned
Answer: a
Explanation: None.
13. The _____ are reserved for events such as unrecoverable memory errors.
a) non maskable interrupts
b) blocked interrupts
c) maskable interrupts
d) none of the mentioned
Answer: a
Explanation: None.
1. The _____ can be turned off by the CPU before the execution of critical instruction sequences that must not be

interrupted.
a) nonmaskable interrupt
b) blocked interrupt
c) maskable interrupt
d) none of the mentioned
Answer: c
Explanation: None.
2. The _____ is used by device controllers to request service.
a) nonmaskable interrupt
b) blocked interrupt
c) maskable interrupt
d) none of the mentioned
Answer: c
Explanation: None.
3. The interrupt vector contains _____
a) the interrupts
b) the memory addresses of specialized interrupt handlers
c) the identifiers of interrupts
d) the device addresses
Answer: b
Explanation: None.
4. Division by zero, accessing a protected or non existent memory address, or attempting to execute a privileged instruction from user mode are all categorized as _____
a) errors
b) exceptions

c) interrupt handlers
d) all of the mentioned
Answer: b
Explanation: None.
5. For large data transfers, _____ is used.
a) dma
b) programmed I/O
c) controller register
d) none of the mentioned
Answer: a
Explanation: None.
6. A character stream device transfers
_____
a) bytes one by one
b) block of bytes as a unit
c) with unpredictable response times
d) none of the mentioned
Answer: a
Explanation: None.
7. A block device transfers _____
a) bytes one by one
b) block of bytes as a unit
c) with unpredictable response times
d) none of the mentioned
Answer: b
Explanation: None.
8. What is a dedicated device?
a) opposite to a sharable device
b) same as a sharable device
c) can be used concurrently by several

processes
d) none of the mentioned
Answer: a
Explanation: None.
9. A keyboard is an example of a device that is accessed through a _____ interface.
a) block stream
b) set of blocks
c) character stream
d) none of the mentioned
Answer: c
Explanation: None.
10. In polling _____
a) busy – wait cycles wait for I/O from device
b) interrupt handler receives interrupts
c) interrupt-request line is triggered by I/O device
d) all of the mentioned
Answer: a
Explanation: None.
11. A non blocking system call _____
a) halts the execution of the application for an extended time
b) does not halt the execution of the application
c) does not block the interrupts
d) none of the mentioned
Answer: b
Explanation: None.

12. An asynchronous call _____
a) returns immediately, without waiting for the I/O to complete
b) does not return immediately and waits for the I/O to complete
c) consumes a lot of time
d) is too slow
Answer: a
Explanation: None.
1. Buffering is done to _____
a) cope with device speed mismatch
b) cope with device transfer size mismatch
c) maintain copy semantics
d) all of the mentioned
Answer: d
Explanation: None.
2. Caching is _____ spooling.
a) same as
b) not the same as
c) all of the mentioned
d) none of the mentioned
Answer: b
Explanation: None.
3. Caching _____
a) holds a copy of the data
b) is fast memory
c) holds the only copy of the data
d) holds output for a device
Answer: a
Explanation: None.

4. Spooling _____
a) holds a copy of the data
b) is fast memory

c) holds the only copy of the data
d) holds output for a device
Answer: c
Explanation: None.
5. The _____ keeps state information about the use of I/O components.
a) CPU
b) OS
c) kernel
d) shell
Answer: c
Explanation: None.
6. The kernel data structures include _____
a) process table
b) open file table
c) close file table
d) all of the mentioned
Answer: b
Explanation: None.
7. Windows NT uses a _____ implementation for I/O.
a) message – passing
b) draft – passing
c) secondary memory
d) cache

Answer: a
Explanation: None.
8. A _____ is a full duplex connection between a device driver and a user level process.
a) Bus
b) I/O operation
c) Stream
d) Flow
Answer: c
Explanation: None.
9. I/O is a _____ in system performance.
a) major factor
b) minor factor
c) does not matter
d) none of the mentioned
Answer: a
Explanation: None.
10. If the number of cycles spent busy – waiting is not excessive, then _____
a) interrupt driven I/O is more efficient than programmed I/O
b) programmed I/O is more efficient than interrupt driven I/O
c) both programmed and interrupt driven I/O are equally efficient
d) none of the mentioned
Answer: b
Explanation: None.