Q1. Which of the following is single user, single tasking Operating System.

a) Linux
b) DOS
c) Windows Xp
d) Windows 98

Correct answer is b)

Q2. Linux Operating System was written by

a) Linux Trovald
b) Bill Gates
c) Dennis Ritchie
d) Bill Joy

Correct answer is a)

Q3. Main advantage of Multiprocessor system is

a) Increase throughput
b) Economy of scale
c) Increase reliability
d) All the above

Correct answer is b)

Q4. _____ guarantees that critical task be completed on time.

a) Hard real time
b) Soft real time
c) Both a, b
d) None of them

Correct answer is c)

Q5. UNIX OS supports

a) User Level Thread
b) Kernel Level Thread
c) Both
d) None

Correct answer is c)

Q6. Short term scheduling refers to

a) Job scheduling
b) CPU scheduling
c) Disk scheduling
d) None of the above

Correct answer is b)

Q7. The process of CPU switching to other process is called as _____ switching

a) Context
b) Process
c) Scheduler
d) Thread

Correct answer is a)

Q8. Which of the scheduling algorithms have best response time?

a) First come first serve
b) Time sharing
c) Shortest job first
d) Priority Algorithm

Correct answer is b)

Q9. The solution to Critical Section problem must satisfy

a) Mutual Exclusion
b) Progress
c) Bounded wait
d) All the above

Correct answer is d)

Q10. Which of them is not necessary condition for deadlock?

a) Mutual Exclusion
b) Preemption
c) Hold and wait
d) Circular wait

Correct answer is b)

Q11. The address generated by CPU is commonly referred as _____ address

a) Physical
b) Logical
c) Relocatable
d) Absolute

Correct answer is b)
It is also known as 'virtual' address

Q12. Compaction is the solution to _____

a) Internal Fragmentation

b) External Fragmentation
c) Segmentation
d) Paging

Correct answer is b)

Q13. Virtual memory is separation of user _____ memory from _____ memory.

a) Program, Data
b) Physical, Local
c) Static, Dynamic
d) Physical, Logical

Refer first two pages of "virtual memory" chapter (galvin)

Q14. High Paging activity is called _____.

a) Framing
b) Thrashing
c) Buffering
d) Mapping

Correct answer is b)

Q15.Cycle Stealing can _____ CPU computation.

a) Increase
b) Decrease
c) Will not effect
d) Depends upon degree of programming

Correct answer is a)

Q16. The first block on the disk is

a) Super Block
b) Boot Block
c) Data Block
d) Free Block

Correct answer is b)

Q17. _____ system call is used to create a file in LINUX

a) create
b) open
c) make
d) cat

Correct answer is a)

Q18. RAID level 3 is also called as _____

a) Memory style correction code organization
b) Bit-interleaved parity organization
c) Block-interleaved parity organization
d) Block-interleaved distributed parity

Q19. On DOS when you club all the commands into one file, than the file is called as

a) Batch
b) Executable
c) Com
d) Text

Correct answer is a)

Q20. Echo is a

a) External command
b) Internal command
c) Shell command
d) None of the above

Correct answer is b)

Q21. _____ shell script is always executed when the user log in

a) .bashrc
b) .bashprofile
c) .bashhistroy
d) .gconf

Correct answer is a)

Q22. GRUB is a

a) Operating system
b) Shell script
c) Library routine
d) Boot Loader

Correct answer is d)

Q23. For a shell script ___ gives the number of parameter passed.

a) $#
b) $$
c) $*
d) $@

Correct answer is a)

Q24. _____ used to evaluate an arithmetic expression is shell script.

a) Expr
b) Export
c) Eval
d) Set

Correct answer is a)

Q25. _____ command is used to pass control information to device drivers

a) Open
b) Close
c) Read
d) Ioctl

Correct answer is d)

Q26. The size of /dev/null file is always

a) Zero
b) 1 Block size
c) Infinite
d) 8 Byte

Q27. By default LINUX always opens _____ file

a) stdin
b) stdout
c) stderr
d) All the above

Correct answer is d)

Q28. ls –l commands give ___ column

a) 6
b) 7
c) 8
d) 9

Q29. For debugging a C file in gdb. The C file must be compiled with _____option.

a) c
b) d
c) g
d) b

Correct answer is c)

Q30. _____ is used to create a child process

a) Fork
b) Exec
c) Create
d) Open

Correct answer is a)

Q31. File with permission –r-xr-xr-x can never be

a) Executed
b) Read
c) Write
d) Appended

Correct answer is c)

Q32. Which one is invalid

a) x=`expr $x + 1`
b) x=`expr $x - 1`
c) x=`expr $x * 1`
d) x=`expr $x / 1`
all are valid

Q33 . _____ is used to make a line comment line is shell script

a) #
b) ;
c) //
d) /* Comment */

Correct answer is a)

Q34. On a 32 bit machine size of Integer in C is

a) 2 Byte
b) 4 Byte
c) 6 Byte
d) 8 Byte

Correct answer is b)

Q46. The command to copy 5 lines in vi editor is _____-

a) 5dd
b) 5cc
c) 5yy
d) None of the above.

Correct answer is c)

Q47. Variables defined in parent shell are accessible is child shell if they are

a) Imported
b) Exported
c) Forked
d) Global

Correct answer is b)

Q48. The file descriptor associated with stdin is

a) 0
b) 1
c) 2
d) 3

Correct answer is a)

Q49. To run the job is background on a Linux system we use

a) $
b) ..
c) ~
d) &

Correct answer is d)

Q50. Which of the environment variable stores the LINUX prompt.

a) HOME
b) LOGNAME
c) PS1
d) PS2

Correct answer is c)

1) Instructions of a program are executed when it is in the _____ state.

    1) wait
    2) new
    3) ready
    4) all of the above
    5) none of the above

    Answer 5

2) The FCFS CPU scheduling policy can be conveniently implemented using the following data structure:

    1) LIFO-stack
    2) Binary tree

3) Directed acylic graph
4) Queue
5) None of the above

Answer 4

3) LINUX uses _____ mechanism.

1) Deadlock prevention by providing process termination
2) Banker's algorithm for deadlock avoidance
3) Deadlock prevention by providing resource pre-emption
4) All of the above
5) None of the above

Answer 5

4) The memory management scheme used by 8085 microprocessor is _____.

1) Paging (using the higher order address bus lines A9 to A16)
2) Segmentation (using B-C and H-L register pairs to hold information related to number of segments and base address of each segment)
3) Both paging as well as segmentation
4) None of the above

Answer 4

5) _____ is the time for the disk arm to move the heads to the cylinder containing the desired sector.

1) Turn-around time
2) Rotational latency
3) Seek time
4) None of the above

Answer 3

6) FAT in the context of file systems expands to _____.

1) File Access Tree
2) File Access Table
3) File Allocation Table
4) None of the above

Answer 3

7) Linux uses _____ type of directory structures.

1) single level
2) two level

3) tree structured
4) all of the above
5) none of the above

Answer 3

8) Which of the following statements are TRUE with respect to DMA (Direct Memory Access)?

a) Requires a DMA Controller (hardware device)
b) Requires a DMA Controller (simulated by system software)
c) Used to avoid Programmed I/O for large data movement
d) Bypasses CPU to transfer data directly between I/O device and memory

1) a) and b)
2) a), c) and d)
3) a), b) and d)
4) all are true
5) all are un-true

Answer 2

9) "Programs, users and systems should be given just enough privileges to perform their tasks". This principle is more popularly known as _____.

1) Principle of least privilege
2) Banker's principle for allocation of permissions
3) Belady's algorithm for granting permissions
4) None of the above

Answer 1

10) The Segment-Table-Length-Register (STLR) specifies _____.

1) Size of a segment in memory
2) Base address of a segment in memory
3) Size of a segment in the virtual address space
4) Base address of a segment in the virtual address space
5) None of the above

Answer 5

11) Potential security violation is known as _____.

1) Attack
2) Virus
3) Threat
4) Theft

5) None of the above

Answer 3

12) EIDE, ATA, SATA, USB, Fibre Channel, SCSI are _____.

1) Memory buses
2) I/O buses
3) Host controllers
4) Disk drivers
5) All of the above

Answer 2

13) One of the main objectives of Disk Scheduling is to _____.

1) Minimize seek time
2) Minimize turn around time
3) Maximize through-put
4) Maximize rotational latency
5) All of the above

Answer 1

14) Which of the following statements are TRUE with respect to an I/O request that is issued by a process?

a) Whether the operation is input or output
b) What the disk address for the transfer is
c) What the memory address for the transfer is
d) What the number of sectors to be transferred is

1. a) and b)
2. a), c) and d)
3. a), b) and d)
4. all are true
5. all are un-true

Answer 4

15) The Elevator Algorithm for disk scheduling is based on _____.

1) SSTF (Shortest Seek Time First)
2) SCAN
3) First Come First Serve (FCFS)
4) LOOK

Answer 2

16) The ability of an Operating System to execute different parts of a program simultaneously is known as _____.

1) Multi-tasking
2) Multi-programming
3) Multi-threading
4) Multi-scheduling

Answer 3

17) Maximize CPU utilization, maximize system throughput, minimize turnaround time and minimize waiting time are the main objectives of _____.

1) Paging
2) Segmentation
3) Both paging as well as segmentation
4) None of the above

Answer 4

18) Pre-emptive type of Shortest-Job-First (SJF) scheduling is also known as _____.

1) Shortest Remaining Time First
2) First Come First Serve
3) Priority Scheduling
4) Quantum based scheduling

Answer 1

19) Incase of race conditions, the outcome of the execution depends on _____.

1) the critical section
2) the sequence in which the access takes place
3) CPU Scheduling
4) proper synchronization mechanisms
5) None of the above

Answer 2

20) The four conditions for deadlocks to occur are given by _____.

1) mutual exclusion ; hold and wait ; pre-emption ; circular wait
2) mutual exclusion ; hold and wait ; no pre-emption ; circular wait
3) mutual exclusion ; hold and release ; pre-emption ; circular wait
4) mutual exclusion ; hold and release ;

no pre-emption ; circular wait

Answer 1

21) A pair of base and limit registers define the _____.

1) logical address space
2) physical address space
3) both logical as well as physical address space
4) None of the above

Answer 1

22) First-fit and best-fit algorithms for dynamic memory allocation are _____ than worst-fit in terms of storage utilization and speed.

1) worst
2) better
3) neither worst nor best
4) below average level

Answer 2

23) A vi editor can be stored as _____.

1) shared pages
2) segmented pages
3) both shared pages as well as segmented pages
4) all of the above

Answer 4

24) The LRU (Least Recently Used) algorithm for page replacement can be implemented using _____.

1) clocks and counters
2) FIFO queue
3) De-queue
4) None of the above

Answer 1

25) The objectives of Demand Paging are _____.

1) less I/O is needed
2) less memory is needed
3) faster response
4) more users
5) all of the above

Answer 5

Fill in the blanks:

1) A situation where several processes access and manipulate the same data concurrently is known as _____.
Correct answer is RACE CONDITION

2) If a shell script called **run** is executed as:
./run a b 1 2 c d 3 4 e f
then, **echo $10** in the shell script will print _____.
Correct answer is a0

3) The **L1 cache** is present in the _____.
Correct answer is CPU/PROCESSOR/MICRO-PROCESSOR

4) Auto-completion of Linux commands can be achieved by hitting the _____ key.
Correct answer is TAB

5) The **Segment-Table-Length-Register (STLR)** specifies _____.
Correct answer is NUMBER OF SEGMENTS USED BY A PROGRAM/PROCESS

6) A pipe in a shell is similar to a _____ amplifier in electronics.
Correct answer is CASCADE

7) The page-replacement policy used by **Windows** O.S. is _____.
Correct answer is LRU [LEAST RECENTLY USED]

8) **REWIND, RESET, READ, TAR, LOCATE,** are operations usually carried out on _____.
Correct answer is TAPE DRIVES

9) **HOME, UID, PATH, DISPLAY,** are _____ variables.
Correct answer is ENVIRONMENT

10) _____ Operating Systems are used in Air Traffic Control.
Correct answer is REAL TIME

11) Processes on the same computer system can communicate with each other using _____ memory.
Correct answer is SHARED

12) Run-time allocation of memory for a program is done from the _____.
Correct answer is HEAP

State whether the following statements are true or false:

1) Multiprogramming decreases CPU utilization. FALSE

2) One of the objectives of CPU scheduling is to maximize the turnaround time. FALSE

3) Threads do not share the Instruction Pointer register. TRUE

4) A non-preemptive scheduler runs when the process blocks because of an I/O operation. TRUE

5) **Shortest-remaining-time-first** is also known as non- preemptive type of SJF policy. FALSE

6) The shell scripting language **DOES NOT** type-cast its variables. TRUE

7) The **DOWN** operation of a semaphore is implemented as follows:

```
P(S) { while S <= 0; // no-op
S++;}
```

FALSE

8) The **init** process will always have a process id of 1. TRUE

9) The **P** and **V** operations related to semaphores need not be indivisible. FALSE

10) The logical address is the one that is loaded into the memory address register of the memory. FALSE

11) The **worst-fit** algorithm is better in terms of speed and storage utilization as compared to **first-fit** technique. FALSE

12) Compared to a disk, a tape is less expensive and holds more data, but random access is much slower. TRUE

13) Using **FTP**, one can even access e-mail. TRUE

14) **WINE (WINdows Emulator)** program in Linux is used to integrate Windows and Linux/UNIX. FALSE

15) **vi** editor commands are case insensitive. FALSE

16) **init-login-getty-shell** is the sequence of execution of processes in a typical UNIX system. FALSE

17) All user jobs by default are started in the background. FALSE

Pick up the correct alternative(s) for each of the following questions:

1) The **FCFS** scheduling policy can be conveniently implemented using the following data structure:

a) LIFO-stack
b) Binary tree
c) Directed acylic graph
d) Circular queue
e) None of the above

3) **UNIX** uses _____ mechanism.

a) Deadlock prevention
b) Deadlock avoidance
c) Deadlock detection and recovery
d) All of the above
e) None of the above

4) Access mode 644 specifies _____.

a) rw-r-----
b) rw-r--r--
c) rw----r--

d) none of the above

5) _____ is the time for the disk arm to move the heads to the cylinder containing the desired sector.

a) Turn-around time
b) Rotational latency
c) Seek time
d) None of the above

6) The two options provided by **BASH** for debugging are _____.

a) -g and -x
b) -g and -v
c) -v and -x
d) -o and -g

What Linux commands are used to achieve the following:

1. Change the priority of a process
   nice/renice

2. Search for a particular pattern in a set of files
   grep

3. Display lines at the top of a file
   head

4. Display information on file contents
   file

5. Display the hostname
   hostname
   echo $HOSTNAME

6. Broadcast a common message to a set of users
   wall

What do the following acronyms stand for?

1.	FAT	FILE ALLOCATION TABLE
2.	DNS	DOMAIN NAME SERVICE
3.	AFS	ANDREW FILE SYSTEM
4.	CIFS	COMMON INTERNET FILE SYSTEM
5.	ACL	ACCESS CONTROL LIST
6.	USB	UNIVERSAL SERIAL BUS