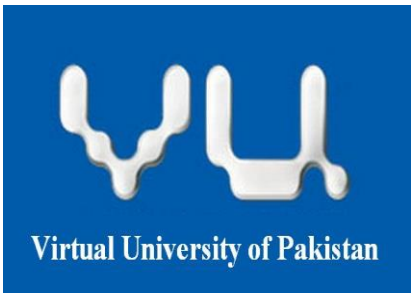

☺😐☹ **MUHAMMAD FAISAL** ☺😐☹

MIT 4th Semester

Al-Barq Campus (VGJW01) Gujranwala

faisalgrw123@gmail.com

Solved Reference MCQ's For Final TERM EXAMS

CS604- OPERATING SYSTEMS

Question No: 1 (Marks: 1) - Please choose one

_____ commands in Linux is used to copy file.

- Is
- **cp** **(Page#27)**
- mv
- mkdir

Question No: 2 (Marks: 1) - Please choose one

The correct command for compiling C program named program.c in Linux environment is:

- **gcc program.c –o FirstPrgram** **(Page#28)**
- gcc –o FirstProgram program.c
- gcc –z FirstProgram program.c
- gcc program.c –m FirstPrgram
- Bottom of Form
- Top of Form

Question No: 3 (Marks: 1) - Please choose one

_____ scheduler selects the process from the job pool and put them in main memory.

- **Long term** **(Page#33)**
- Short term
- Medium term
- Swapper

Question No: 4 (Marks: 1) - Please choose one

The process id returned to the child process after successful fork system call execution is _____.

- **0** **(Page#36)**
- 1
- 2
- 3

Question No: 5 (Marks: 1) - Please choose one

_____ displays information about the top processes.

- ls
- cs
- **top** **(Page#64)**
- cd

Question No: 6 (Marks: 1) - Please choose one

Using _____system, we can create a new process in Linux.

- **fork** **(Page#36)**
- exec
- wait
- exit

Question No: 7 (Marks: 1) - Please choose one

_____ commands in Linux helps to create a new directory.

- ls
- cp
- mv
- **mkdir** **(Page#26)**

Question No: 8 (Marks: 1) - Please choose one

Cooperating processes never share any data, code, memory or state.

- True
- **False** **(Page#41)**

Question No: 9 (Marks: 1) - Please choose one

The manual pages can be read in Linux using ____ command.

- **man** **(Page#04)**
- wan
- desc
- help

Question No: 10 (Marks: 1) - Please choose one

In Unix/ Linux, by default the standard input file is attached to the _____

- Mouse
- **Keyboard** **(Page#52)**
- Light pen
- Joystick

Note:
Standard input: 0 (keyboard)
Standard output: 1 (display screen)
Standard error: 2 (display screen)

Question No: 11 (Marks: 1) - Please choose one

Shared libraries and kernel modules are stored in _____ directory.

- /bin
- /dev
- /boot
- **/lib** **(Page#23)**

Question No: 12 (Marks: 1) - Please choose one

Swapper is also termed as Short term scheduler.

- True
- **False** **(Page#34)** (Medium term = Swapper)

Question No: 13 (Marks: 1) - Please choose one

You can use the mv file1 file2 command to move _____.

- **file1 to file2.** **(Page#27)**
- file 2 to file 1
- this command will not work for moving files
- None of the option is correct.

Question No: 14 (Marks: 1) - Please choose one

_____ is also called Swapper.

- Long term
- Short term
- **Medium term** **(Page#34)**
- Swap space

Question No: 15 (Marks: 1) - Please choose one

_____ system call is used to write to a file or FIFO or any other IPC channel.

- read
- **write** **(Page#45)**
- open
- fork

Question No: 16 (Marks: 1) - Please choose one

If your processor does not have two slots empty in Per Process File Descriptor Table, then your _____ system call will fail.

- **Pipe** **(Page#52)**
- Read
- Write
- Open

The pipe() system call fails for many reasons, including the following:
1) At least two slots are not empty in the PPFDT **2)** too many files or pipes are open in the process
3) Buffer space not available in the kernel **4)** File table is full

Question No: 17 (Marks: 1) - Please choose one

The Operating system is a layer of software between _____ and _____.

- **Hardware, software application** **(Page#21)**
- Kernel, hardware
- Dos, Windows
- Windows, Kernel

Question No: 18 (Marks: 1) - Please choose one

Command-line interpreter is also called _____ in some operating systems.

- Kernel
- **Shell** **(Page#13)**
- Signal
- API

Question No: 19 (Marks: 1) - Please choose one

I/O instructions are Privileged Instructions.

- **True** **(Page#08)**
- False

Question No: 20 (Marks: 1) - Please choose one

In Linux directory structure, there is _____ root directory.

- **1** **(Page#22)**
- 2
- 3
- 4

Question No: 21 (Marks: 1) - Please choose one

Utilities used for system administration (halt, ifconfig, fdisk, etc.) are stored in _____directory.

- /dev
- /boot
- /lib
- **/sbin** **(Page#24)**

Question No: 22 (Marks: 1) - Please choose one

rm and rmkdir commands are used to _____ directory.

1) Create
2) Move
3) **Remove** **(Page#27)**
4) Modify

Question No: 23 (Marks: 1) - Please choose one

In _____ communication the process which wants to communicate with the other process must explicitly name the recipient and the sender.

1) **Direct** **(Page#43)**
2) Indirect
3) Automatic
4) Self

Question No: 24 (Marks: 1) - Please choose one

In indirect inter process communication, a sender _____ mention the name of the recipient.

— does
— **does not** **(Page#43)**

Question No: 25 (Marks: 1) - Please choose one

The returned code to the child process after successful fork system call execution is:

— 1
— 2
— 3
— **0** **(Page#32)**

Question No: 26 (Marks: 1) - Please choose one

If the fork system call fails, it returns:

— 1
— **-1** **(Page#32)**
— 2
— 0

Question No: 27 (Marks: 1) - Please choose one

The problem with priority scheduling algorithm is _____.

1) Deadlock
2) **Starvation** **(Page#84)**
3) Aging
4) Nice value

A major problem with priority- scheduling algorithms is indefinite blocking (or starvation). Aging is solution to the problem of indefinite blockage of low-priority processes.

Question No: 28 (Marks: 1) - Please choose one

_____ is a solution to the problem of indefinite blockage of low-priority processes.

1) Starvation
2) Deadlock
3) **Aging** **(Page#85)**
4) None of the these

Question No: 29 (Marks: 1) - Please choose one

Batch programs are usually _____ programs.

1) Interactive
2) **Non-interactive**
3) Foreground
4) Preemptive

Question No: 30 (Marks: 1) - Please choose one

All Threads within a process share the _____ address space.

— **Same** **(Page#70)**
— Different

Question No: 31 (Marks: 1) - Please choose one

A major problem with priority scheduling algorithms is _____.

1) Deadlock
2) Aging
3) **Starvation** **(Page#84)**
4) None of these

Question No: 32 (Marks: 1) - Please choose one

_____ scheduling allows a process to move between queues.

1) Round Robin
2) First Come First Serve
3) **Multilevel Feedback Queue** **(Page#90)**
4) Shortest Remaining Time First

Question No: 33 (Marks: 1) - Please choose one

POSIX is a standard developed by _____

1) ANSI
2) **IEEE**
3) ISO
4) ACM

Question No: 34 (Marks: 1) - Please choose one

The nice value helps in assigning _____ to a process.

1) **Priority** **(Page#94)**
2) Weight
3) Time
4) Scheduling

Question No: 35 (Marks: 1) - Please choose one

_____ integer shows the highest priority of a process in CPU scheduling

— **Small** **(Page#84)**
— Large

Question No: 36 (Marks: 1) - Please choose one

_____command display the status of a process.

1) ls
2) **ps** **(Page#63)**
3) gcc
4) cat

Question No: 37 (Marks: 1) - Please choose one

In Unix/ Linux, by default the standard output file is attached to the _____

1) File
2) **Screen** **(Page#52)**
3) Printer
4) Scanner

Question No: 38 (Marks: 1) - Please choose one

The priority of a process can be changed using _____ command.

1) **Nice** **(Page#92)**
2) cmd
3) cat
4) grep

Question No: 39 (Marks: 1) - Please choose one

_____ is a preemptive scheduling algorithm.

1) First Come First Serve
2) Shortest Job First
3) **Round Robin** **(Page#87)**
4) None of these

Question No: 40 (Marks: 1) - Please choose one

_____ is used in real time operating systems.

1) Non-preemptive scheduling
2) **Preemptive scheduling**
3) Dispatching scheduling
4) FCFS scheduling

Question No: 41 (Marks: 1) - Please choose one

The procedure "The time at which the process finished working MINUS the arrival time of the process MINUS CPU burst for that process" will help calculate the _____.

1) Non-preemptive Shortest Job First scheduling
2) **Preemptive Shortest Job First scheduling** **(Page#82,83)**
3) FCFS
4) RR Scheduling

Non-Preemptive => Waiting time = Finish Time – Arrival Time
Preemptive => Waiting time = Finish Time – Arrival Time – Burst time

Question No: 42 (Marks: 1) - Please choose one

_____ scheduling algorithm is sometimes called shortest remaining time first scheduling algorithm.

1) Non-preemptive SJF
2) Priority Scheduling
3) **Preemptive Shortest Job First** **(Page#83)**
4) FCFS

Question No: 43 (Marks: 1) - Please choose one

_____ scheduling algorithm can be preemptive or non-preemptive.

1) First Come First Serve
2) **Shortest Job First** **(Page#83)**
3) Round Robin
4) Priority

Question No: 44 (Marks: 1) - Please choose one

Round Robin algorithm is similar to _____ scheduling but preemption is added to switch between processes.

1) Shortest jab first
2) Shortest remaining time first
3) **First come first serve** **(Page#86)**
4) None of theses

Question No: 45 (Marks: 1) - Please choose one

Round Robin algorithm is most suitable for _____.

1) **Time sharing system** **(Page#86)**
2) Real time systems and batch systems
3) Running batch programs
4) Expert system

Question No: 46 (Marks: 1) - Please choose one

Kernel is responsible for scheduling the user level threads.

— True
— **False** **(Page#73)**

The kernel is responsible for scheduling the kernel threads, so it effectively schedules the user threads at the same time.

Question No: 47 (Marks: 1) - Please choose one

The priorities of processes in the _____ group remain fixed.

— **Kernel** **(Page#91)**
— User

Question No: 48 (Marks: 1) - Please choose one

_____ is the basis of queuing theory which is branch of mathematics used to analyze systems involving queues and servers.

- **Little's formula** **(Page#94)**
- Deterministic theory
- Queuing theory
- Queuing analysis

Question No: 49 (Marks: 1) - Please choose one

_____ systems involving queues and servers.

- **Little's formula** **(Page#94)**
- Deterministic Modeling
- Queuing Theory
- Queuing analysis

Question No: 50 (Marks: 1) - Please choose one

The scheduling of _____ are done by the operating system.

- **Kernel threads** **(Page#71)**
- User level threads
- Both
- None of these

Kernel threads are supported directly by the operating system.

Question No: 51 (Marks: 1) - Please choose one

Taking the CPU from one process and giving the CPU to another process is termed as

- **Context switching** **(Page#87)**
- Dispatching
- Swapping
- Tracking

Question No: 52 (Marks: 1) - Please choose one

The process of switching from one process to another is called latency

— True
— **False** **(Page#34)**

Question No: 53 (Marks: 1) - Please choose one

The process of switching from one process to another is called ----------

- **Context switching** **(Page#87)**
- Scheduling
- Quantum period
- Latency

Question No: 54 (Marks: 1) - Please choose one

The time it takes for the dispatcher to stop one process and start another running is known as the----------.

- **Dispatch latency** **(Page#80)**
- Scheduling
- Context switching
- None of the given options

Question No: 55 (Marks: 1) - Please choose one

The hardware mechanism that enables a device to notify CPU is called an ----------

- **Interrupt** **(Page#553 Operating Systems Concepts)**
- Signal
- Trap
- Process

Question No: 56 (Marks: 1) - Please choose one

Address Binding will be at _____ in Multiprogramming with Fixed Tasks (MFT)

- Run time
- **Load time** **(Page#161)**
- Dynamic time
- None of the given options

Question No: 57 (Marks: 1) - Please choose one

In ---------- technique, memory is divided into several fixed-size partitions.

- Swapping
- Overlays
- **Multiprogramming with Fixed Tasks (MFT)** **(Page#160)**
- Multiprogramming with Variable Tasks (MVT)

Question No: 58 (Marks: 1) - Please choose one

----------holds the smallest legal physical memory address for a process

- **Base register** **(Page#10)**
- Limit register
- Index register
- Stack pointers register

Question No: 59 (Marks: 1) - Please choose one

----------refers to the situation when free memory space exists to load a process in the memory but the space is not contiguous.

- Segmentation
- Internal fragmentation
- Swapping
- **External Fragmentation** **(Page#163)**

Question No: 60 (Marks: 1) - Please choose one

Main Memory is _____ memory.

- **Volatile** **(Page#153)**
- Non-volatile
- Permanent
- Virtual

Question No: 61 (Marks: 1) - Please choose one

Overlays are implemented by the _____.

- Operating system
- **Programmer** **(Page#157)**
- Kernel
- Shell

Question No: 62 (Marks: 1) - Please choose one

--------keep in memory only those instructions and data that are needed at any given time.

- Fragmentation
- Paging
- Swapping
- **Overlays** **(Page#157)**

Question No: 63 (Marks: 1) - Please choose one

Secondary Storage memory devices have _____ memory.

- Volatile
- **Permanent and non-volatile** **(Page#151)**
- Temporary
- None of the options

Question No: 64 (Marks: 1) - Please choose one

_____ algorithm is used in Deadlock avoidance.

- Bakery
- **Banker's** **(Page#137)**
- Mutual exclusion
- Safe Sequence

Question No: 65 (Marks: 1) - Please choose one

Addresses generated relative to part of program, not to start of physical memory are

- **Re-locatable** **(Page#334 Operation systems concepts)**
- Virtual
- Symbolic
- Physical

Question No: 66 (Marks: 1) - Please choose one

The run-time mapping from virtual to physical addresses is done by a piece of hardware in the CPU, called the ----------

- **Memory management unit (MMU)** **(Page#152)**
- CPU Scheduler
- Registers
- None of the given options

Question No: 67 (Marks: 1) - Please choose one

_____ algorithm is used for solving n-process critical section problem.

- Bankers
- **Bakery** **(Page#103)**
- Babbles
- None of the given

Question No: 68 (Marks: 1) - Please choose one

_____ is an integer variable accessible through wait and signal which are atomic operations.

- **Semaphore** **(Page#109)**
- Mutex
- Busy waiting
- Signal

Question No: 69 (Marks: 1) - Please choose one

You can display the contents (names of files and directories) of a directory in UNIX/Linux directory structure with the ---------- command.

- ll
- s
- **ls** **(Page#25)**
- None of the given options

Question No: 70 (Marks: 1) - Please choose one

The ---------- system call suspends the calling process.

- fork
- **wait** **(Page#39)**
- exec
- exit

Question No: 71 (Marks: 1) - Please choose one

In ---------addressing, the recipient is not required to name the sender.

- Symmetric
- **Asymmetric** **(Page#44)**
- Both symmetric and asymmetric
- None of the given options

Question No: 72 (Marks: 1) - Please choose one

The main characteristic of a Real time system is

1. **Efficiency** **(Page#07)**
2. Large Virtual Memory
3. Large secondary storage device
4. Usability

Question No: 73 (Marks: 1) - Please choose one

A is an integer variable that, apart from initialization is accessible only through two standard atomic operations: wait and signal.

1. **Semaphore** **(Page#109)**
2. Monitor
3. Critical region
4. Critical section

Question No: 74 (Marks: 1) - Please choose one

1 MB or 1 megabyte is equivalent to----------.

— 1024 bytes
— **1024^2 bytes**
— 1024^3 bytes
— 1000000 bytes

Question No: 75 (Marks: 1) - Please choose one

---------- spend more time doing IO than computations short CPU bursts

— CPU bound processes
— **IO bound processes** **(Page#29)**
— None of the given options

Question No: 76 (Marks: 1) - Please choose one

With ----------you use condition variables.

1. Semaphores
2. Read/Write Locks
3. Swaps
4. **Monitor** **(Page#124)**

Question No: 77 (Marks: 1) - Please choose one

Deadlocks can be described more precisely in terms of a directed graph called a system--

1. Directed graph
2. Critical path
3. **Resource allocation graph** **(Page#130)**
4. Mixed graph

Question No: 78 (Marks: 1) - Please choose one

Object files and libraries are combined by a ---------- program to produce the executable binary.

1. Compiler
2. **Linker** **(Page#428,818 Operating system concepts)**
3. Text editor
4. Loader

Question No: 79 (Marks: 1) - Please choose one

The set of all physical addresses corresponding to the logical addresses is a ---------- of the process.

1. **Physical address space** **(Page#153)**
2. Process address space
3. None of the given options
4. Logical address space

Question No: 80 (Marks: 1) - Please choose one

---------- indicates size of the page table.

1. Translation look-aside buffers
2. **Page-table length register (PTLR)** **(Page#350 Operating system concepts)**
3. Page-table base register (PTBR)
4. Page offset

Question No: 81 (Marks: 1) - Please choose one

----------points to the page table.

1. Translation look-aside buffers
2. Page offset
3. Page-table length register (PRLR)
4. **Page-table base register (PTBR)** **(Page#347 OSC)**

Question No: 82 (Marks: 1) - Please choose one

If validation bit is 0, it indicates a/an --------- state of segment.

1. Protected
2. Shared
3. Legal
4. **Illegal** **(Page#178)**

Question No: 83 (Marks: 1) - Please choose one

In _____ allocation scheme free frames are equally divided among processes

1. **Fixed Allocation** **(Page#205)**
2. Proportional Allocation
3. Priority Allocation
4. None of the given options

Question No: 84 (Marks: 1) - Please choose one

_____ is used to store data on secondary storage device, e.g., a source program(in C), an executable program.

1. Block Special File
2. Link File
3. **Ordinary File** **(Page#218)**
4. Directory

Question No: 85 (Marks: 1) - Please choose one

The _____ method requires each file to occupy a set of contiguous blocks on the disk.

1. **Contiguous Allocation** **(Page#234)**
2. Linked Allocation
3. Indexed Allocation
4. None of the given options

Question No: 86 (Marks: 1) - Please choose one

User mode can run the Privileged instructions

— True
— **False** **(Page#08)**

Question No: 87 (Marks: 1) - Please choose one

_____ wastes CPU cycles and hence is a problem in real multiprogramming system.

1. **Busy waiting** **(Page#256 OSC)**
2. Spinlock
3. Critical section
4. Mutex

Question No: 88 (Marks: 1) - Please choose one

The _____ requires that no reader will be kept waiting unless a writer has already obtained permission to use the shared object.

1. **first readers-writers problem** **(Page#116)**
2. second readers-writers problem
3. third readers-writers problem
4. fourth readers-writers problem

Question No: 89 (Marks: 1) - Please choose one

The process of holding at least one resource and waiting to acquire additional resources that are currently being held by other processes is known as_____.

1. Mutual exclusion
2. **Hold and wait** **(Page#129)**
3. No preemption
4. Circular wait

Question No: 90 (Marks: 1) - Please choose one

If a process continues to fault, replacing pages, for which it then faults and brings back in right away. This high paging activity is called _____.

1. Paging
2. **Thrashing** **(Page#208)**
3. Page fault
4. CPU utilization

Question No: 91 (Marks: 1) - Please choose one

The high paging activity is called _____

1. Segmentation
2. Page Fault
3. Multiprogramming
4. **Thrashing** **(Page#208)**

Question No: 92 (Marks: 1) - Please choose one

A process is _____if it is spending more time on paging

1. **Thrashing** **(Page#206)**
2. Demand paging
3. Paging
4. Fixed Allocation

Question No: 93 (Marks: 1) - Please choose one

Banker‟s algorithm is used for _____

1. **Deadlock avoidance** **(Page#313 OSC)**
2. Deadlock detection
3. Deadlock prevention
4. Deadlock removal

Question No: 94 (Marks: 1) - Please choose one

A program cannot execute unless whole or necessary part of it resides in the main memory.

— **True**
— False

Question No: 95 (Marks: 1) - Please choose one

The size of pages and frames are same in logical memory and physical memory respectively.

— **True** **(Page#165)**
— False

Question No: 96 (Marks: 1) - Please choose one

Which command, Display permissions and some other attributes for prog1.c in your current directory?

- **ls –l prog1.c** **(Page#234)**
- ls –d prog1.c
- ls file prog1.c
- ls –l prog1.c /Directory

Question No: 97 (Marks: 1) - Please choose one

In the C-Scan and C-Look algorithms, when the disk head reverses its direction, it moves all the way to the other end, without serving any requests, and then reverses again and starts serving requests.

- **True**
- False

Question No: 98 (Marks: 1) - Please choose one

In paged segmentation, we divide every segment in a process into _____pages.

- **Fixed size** **(Page#180)**
- Variable size

Question No: 99 (Marks: 1) - Please choose one

Intel 80386 used paged segmentation with _____ level paging.

- One
- **Two** **(Page#183)**
- Three
- Four

Question No: 100 (Marks: 1) - Please choose one

The logical address of Intel 80386 is _____

- 36 bits
- **48 bits** **(Page#183)**
- 64 bits
- 128 bits

Question No: 101 (Marks: 1) - Please choose one

Following is NOT true about Virtual memory.

Virtual memory help in executing bigger programs even greater in size that of main memory.

Virtual memory makes the processes to stuck when the collective size of all the processes becomes greater than the size of main memory.

Virtual memory also allows files and memory to be shared by several different processes through page sharing.

Virtual memory makes the task of programming easier because the programmer need not worry about the amount of physical memory.

Question No: 102 (Marks: 1) - Please choose one

The Swap instruction which is the hardware solution to synchronization problem does not satisfy the _____ condition, hence not considered to be a good solution.

- Progress
- **Bounded waiting (Page#109)**
- Mutual exclusion
- None of the given

Question No: 103 (Marks: 1) - Please choose one

Summarize the tradeoffs among simple arrays, trees, and hash tables as implementations of a page table. A ---------- (or an exception) is a software-generated interrupt caused either by an error (division by zero or invalid memory access) or by a user request for an operating system service.

- Interrupt
- **Trap (Page#07)**
- Signal
- Process

Question No: 104 (Marks: 1) - Please choose one

Which register holds the smallest legal physical memory address for a process?

- **Base register (Page#13)**
- Limit register
- Status register
- None of the given options

Question No: 105 (Marks: 1) - Please choose one

The ----------semaphore provides mutual exclusion for accesses to the buffer pool and is initialized to the value 1.

- **mutex** **(Page#118)**
- Binary
- Couting
- None of the given options

Question No: 106 (Marks: 1) - Please choose one

Binary semaphores are those that have only two values---------

- 0 and n
- 0 and 0
- **0 and 1** **(Page#117)**
- None of the given options

Question No: 107 (Marks: 1) - Please choose one

Physical memory is broken down into fixed-sized blocks, called---------- and Logical memory is divided into blocks of the same size, called ----------.

- **Frames, pages** **(Page#165)**
- Pages, Frames
- Frames, holes
- Holes, segments

Question No: 108 (Marks: 1) - Please choose one

A page table needed for keeping track of pages of the page table is called----------.

- 2-level paging
- **Page directory** **(Page#173)**
- Page size
- Page table size

Question No: 109 (Marks: 1) - Please choose one

The address generated by the CPU, after any indexing or other addressing-mode arithmetic, is called a --------address, and the address it gets translated to by the MMU is called a ---------address.

- **Virtual, physical**
- Hexadecimal, Binary,
- Valid, invalid
- Physical, Virtual

Question No: 110 (Marks: 1) - Please choose one

Each page is a power of -------- bytes long in paging scheme.

- **2 (Page#163)**
- 3
- 4
- 5

Question No: 111 (Marks: 1) - Please choose one

_____ is a way to establish a connection between the file to be shared and the directory entries of the users who want to have aces to this file.

- **Link (Page#229)**
- Directory
- Common Group
- Access Permission

Question No: 112 (Marks: 1) - Please choose one

When a _____link is created, a directory entry for the existing file is created

- Soft
- **Hard (Page#225)**
- Soft or Hard
- None of the given options

Question No: 113 (Marks: 1) - Please choose one

Which part of the computer system helps in managing the file and memory management system?

- **Operating System (Page#242)**
- Device Drivers
- Application Software
- Hardware

Question No: 114 (Marks: 1) - Please choose one

Wrong use of wait and signal operations (in context with semaphores) can cause____ problem(s).

- Mutual Exclusion
- Deadlock
- Bounded Waiting
- **All of the given options (Page#114)**

Question No: 115 (Marks: 1) - Please choose one

If a system is not in a safe state, there can be no deadlocks.

— True
— **False** **(Page#137)**

Question No: 116 (Marks: 1) - Please choose one

In _____ page replace algorithm we will replace the page that has not been used for the longest period of time.

- Counter based
- Least Frequently Used
- FIFO
- **LRU** **(Page#200)**

Question No: 117 (Marks: 1) - Please choose one

An acyclic graph does not allow directories to have shared subdirectories and files.

— True
— **False** **(Page#223)**

Question No: 118 (Marks: 1) - Please choose one

A modification of free-list approach in free space management is to store the addresses of n free blocks in the first free block. Known as _____.

- Counting
- Linked list
- Bit vector
- **Grouping** **(Page#241)**

Question No: 119 (Marks: 1) - Please choose one

In deadlock detection and recovery algorithm, a deadlock exists in the system if and only if the wait for graph contains a _____

- **Cycle** **(Page#147)**
- Graph
- Edge
- Node

Question No: 120 (Marks: 1) - Please choose one

Intel is basically designed for following Operating Systems except _____.

- **MULTICS (Page#182)**
- OS/2
- Windows
- Linux

Question No: 121 (Marks: 1) - Please choose one

The bottom layer in the layered approach of Operating System is----------

- User interface
- **Hardware (Page#21)**
- Kernel
- None of the given options

Question No: 122 (Marks: 1) - Please choose one

In which of the following operations, the scheduler is not called into play?

- Process requests for I/O.
- Process finishes execution.
- Process finishes its time allotted.
- **All of the above through c**
- None of the a through c above.

Question No: 123 (Marks: 1) - Please choose one

Consider the following preemptive priority-scheduling algorithm based on dynamically changing priorities. Larger priority numbers imply higher priority. When a process is waiting for the CPU (in the ready queue but not running), its priority changes at a rate X when it is running, its priority changes at a rate Y. All processes are given a priority of 0 when they enter the ready queue. The parameters and can be set to give many different scheduling algorithms. What is the algorithm that results from Y>X>0?

- LIFO
- **FCFS**
- Round Robin
- None of the above

Question No: 124 (Marks: 1) - Please choose one

A CPU scheduling algorithm determines an order for the execution of its scheduled processes. Given n processes to be scheduled on one processor, how many possible different schedules are there? Give a formula in terms of n.

- n(n-1)
- n2
- **n!**
- n/2

Question No: 125 (Marks: 1) - Please choose one

"To eliminate external fragmentation in segmentation the scheme used is"

Segmentation is a memory management scheme that supports _____.

- **Programmer's view of memory**
- System‟s view of memory
- Hardware‟s view of memory
- None of the given

Question No: 126 (Marks: 1) - Please choose one

---------- register contains the size of the process.

- Base register
- Index register
- **Limit register (Page#13)**
- Stack pointers register

Question No: 127 (Marks: 1) - Please choose one

Preventing the condition of _____ to happen, deadlocks can be prevented to happen:

- Critical Region
- **Circular wait (Page#136)**
- Monitors
- Critical Section

Question No: 128 (Marks: 1) - Please choose one

Assume a logical address space of 16 pages of 1024 words, each mapped into a physical memory of 32 frames. Each word consists of 2 bytes. What will be the total number of bits required for p (page number)?

- **4 bits**
- 8 bits
- 16 bits
- 32 bits

Question No: 129 (Marks: 1) - Please choose one

A dashed line is used to represent a _____ in Resource Allocation Graph

- **Claim edge (Page#137)**
- Request edge
- Assignment edge
- Allocation edge

Question No: 130 (Marks: 1) - Please choose one

The main memory is usually divided into partitions, one for _____ and other for _____.

- **Operating System, User processes (Page#158)**
- Operating system, CPU
- Processes, Virtual Memory
- Base Register, Limit Register

Question No: 131 (Marks: 1) - Please choose one

_____ is used in the detection and recovery mechanism to handle deadlocks. Select

- Wait-for Graph
- **Resource allocation Graph (Page#132)**
- Circular Graph
- Claim Edge Graph

Question No: 132 (Marks: 1) - Please choose one

_____ is caused due to un-used space in fixed size blocks/ pages. Select correct option:

- **Internal fragmentation (Page#)**
- External fragmentation
- Paging
- MVT

Question No: 133 (Marks: 1) - Please choose one

In Swapping technique of Memory Management, the total amount transfer time is directly proportional to the _____.

- **Amount of memory swapped**
- Amount of space on backing store
- Space on main memory
- All the given options

Question No: 134 (Marks: 1) - Please choose one

What do we name to an address that is generated by the CPU? Select correct option:

- **Logical address (Page#153)**
- Physical address
- Binary addresses
- None of the given options

Question No: 135 (Marks: 1) - Please choose one

The ----------scheme is not applicable to a resource allocation system with multiple instances of each resource type.

- **Wait for graph (Page#138)**
- Resource allocation graph
- Both Resource-allocation and wait-for graph
- None of the given options

Question No: 136 (Marks: 1) - Please choose one

Memory protection in paging is achieved by associating _____ with each page. This bit indicates whether the page is in the process address space or not.

- **Protection bits (Page#170)**
- Counting bits
- Paging table
- Segment table

Question No: 137 (Marks: 1) - Please choose one

In Resource Allocation Graph, A _____ Pi →Rj indicates that process Pi may request resource Rj at some time in the future.

- **Claim edge (Page#136)**
- Request edge
- Assignment edge
- Allocation edge

Question No: 138 (Marks: 1) - Please choose one

_____ is caused due to un-used space in physical memory

- **Internal fragmentation**
- External fragmentation
- Paging
- MVT

Question No: 139 (Marks: 1) - Please choose one

Every ----------generated by the CPU is divided into two parts: a page number (p) and a page offset (d).

- Page
- Process address space
- Physical address
- **Logical address (Page#164)**

Question No: 140 (Marks: 1) - Please choose one

What do we name to an address that is loaded into the memory-address register of the memory?

- Logical address
- **Physical address (Page#153)**
- Binary addresses
- None of the given options

Question No: 141 (Marks: 1) - Please choose one

Variable names are ---------- addresses

- Physical
- Relocatable
- Relative
- **Symbolic (Page#152)**

Question No: 142 (Marks: 1) - Please choose one

The collection of processes that is waiting on the disk to be brought into the memory for execution forms the ----------

- **Input queue (Page#152)**
- Output queue
- Both input and output queue
- None of the given options

Question No: 143 (Marks: 1) - Please choose one

In Swapping technique of Memory Management, the total amount transfer time is directly proportional to the _____.

⇒ Amount of memory swapped
⇒ Amount of space on backing store
⇒ Space on main memory
⇒ **All the given options are correct**

Question No: 144 (Marks: 1) - Please choose one

What do we name to an address that is generated by the CPU?

⇒ **Logical address (Page#153)**
⇒ Physical address
⇒ Binary addresses
⇒ None of the given options

Question No: 145 (Marks: 1) - Please choose one

The run-time mapping from virtual to physical addresses is done by a piece of hardware in the CPU, called the ----------

⇒ **Memory management unit (MMU) (Page#152)**
⇒ CPU Scheduler
⇒ Registers
⇒ None of the given options

Question No: 146 (Marks: 1) - Please choose one

What do we name to an address that is loaded into the memory-address register of the memory?

⇒ Logical address
⇒ **Physical address (Page#153)**
⇒ Binary addresses
⇒ None of the given options

Question No: 147 (Marks: 1) - Please choose one

If the system can allocate resources to each process in some order and still avoid a deadlock then it is said to be in _____ state

⇒ **Safe (Page#135)**
⇒ Un-Safe
⇒ Mutual
⇒ Starvation

Question No: 148 (Marks: 1) - Please choose one

_____is a process for mapping a name to an address.

⇒ **Addressing**
⇒ Binding
⇒ Routing
⇒ Memory

Question No: 149 (Marks: 1) - Please choose one

When the address used in a program gets converted to an actual physical RAM address, it is called ----------

⇒ Execution
⇒ Loading
⇒ **Address Binding**
⇒ Compiling

Question No: 150 (Marks: 1) - Please choose one

----------holds the smallest legal physical memory address for a process

⇒ **Base register** **(Page#331)**
⇒ Limit register
⇒ Index register
⇒ Stack pointers register

Question No: 151 (Marks: 1) - Please choose one

Main Memory is _____ memory.

⇒ **Volatile**
⇒ Non-volatile
⇒ Permanent
⇒ Virtual

Question No: 152 (Marks: 1) - Please choose one

In_____, the library files are linked at load time.

⇒ Static Linking
⇒ **Dynamic Linking** **(Page#155)**

Question No: 153 (Marks: 1) - Please choose one

The ---------- is a single program that produces an object file

⇒ Linker
⇒ **Compiler**
⇒ Loader
⇒ Text editor

Question No: 154 (Marks: 1) - Please choose one

Cache is non-volatile memory.

⇒ True
⇒ **False** **(Page#151)**

Question No: 155 (Marks: 1) - Please choose one

LRU page replacement algorithm can be implemented by

⇒ Counter
⇒ Stack
⇒ Linked list
⇒ **All of the given options** **(Page#201)**

Question No: 156 (Marks: 1) - Please choose one

Assume a logical address space of 16 pages of 1024 words, each mapped into a physical memory of 32frames. Each word consists of 2 bytes. What will be the total number of bits required for p (page number)?

⇒ **4 bits** **(Page#166)** No. of bits needed for p = ceiling [log2 16] bits = 4 bits
⇒ 8 bits
⇒ 16 bits
⇒ 32 bits

Question No: 157 (Marks: 1) - Please choose one

Assume a logical address space of 16 pages, each of 1024 words, each mapped into a physical memory of 32 frames. Each word consists of 2 bytes. What will be the total number of bits required for f (frames)?

⇒ **5** **(Page#166)** No. of bits neede for f = ceiling [log2 32] bits = 5 bits
⇒ 6
⇒ 7
⇒ 8

Question No: 158 (Marks: 1) - Please choose one

In _____ page replacement algorithm we will replace the page that has not been used for the longest period of time.

⇒ Counter based
⇒ Least Frequently Used
⇒ FIFO
⇒ **LRU** **(Page#200)**

Question No: 159 (Marks: 1) - Please choose one

_____is the separation of user logical memory from physical memory.

⇒ ROM
⇒ Physical memory
⇒ **Virtual Memory** **(Page#186)**
⇒ None of the given options

Question No: 160 (Marks: 1) - Please choose one

Following are the advantages of Virtual memory EXCEPT

⇒ Efficient process creation
⇒ Concept of memory mapped files
⇒ **Low CPU consumption** **(Page#186)**
⇒ Running large sized processes

Question No: 161 (Marks: 1) - Please choose one

A _____ system is similar to a paging system with swapping

⇒ Context switching
⇒ **Demand paging** **(Page#187)**
⇒ Page fault
⇒ None of the given options

Question No: 162 (Marks: 1) - Please choose one

In _____ allocation scheme number of frames allocated to a process is proportional to its size.

⇒ Fixed Allocation
⇒ **Proportional Allocation** **(Page#204)**
⇒ Priority Allocation
⇒ None of the given options

Question No: 163 (Marks: 1) - Please choose one

The major criterion in the selection of a particular algorithm is that we want to:

⇒ **Minimize the number of page faults.** **(Page#193)**
⇒ Increase efficiency.
⇒ Reduce running time of page replacement algorithm.
⇒ Maximize the number of page faults.

Question No: 164 (Marks: 1) - Please choose one

_____is the operating system's attempt to improve the computer system's Utilization and throughput.

⇒ Exec
⇒ Fork
⇒ **Demand Paging** **(Page#197)**
⇒ Thrashing

Question No: 165 (Marks: 1) - Please choose one

To eliminate external fragmentation in segmentation the scheme used is _____.

⇒ Fixed size partition scheme
⇒ Variable size partition scheme
⇒ Fixed size paging scheme
⇒ **Variable size paging scheme**

Question No: 166 (Marks: 1) - Please choose one

In a UNIX system,_____ system call can be used to request the operating system to memory map an opened file.

- ◊ **mmap( )** **(Page#196)**
- ◊ fork ( )
- ◊ exec( )
- ◊ read( )

Question No: 167 (Marks: 1) - Please choose one

For some page replacement algorithms, the page fault rate may increase as the number of allocated frames _____.

- ◊ Constant
- ◊ Decreased
- ◊ **Increased** **(Page#198)**
- ◊ All of the given

Question No: 168 (Marks: 1) - Please choose one

_____is a variation of fork system call in several Unix operating system.

- ◊ **vfork ( )** **(Page#194)**
- ◊ wfork ( )
- ◊ avfork ( )
- ◊ bfork ( )

Question No: 169 (Marks: 1) - Please choose one

The main criteria for Page Replacement in Optimal Page Replacement Algorithm is to

- ◊ **Replace that page which will not be used for the longest period of time.** **(Page#200)**
- ◊ Replace that page which will be required most frequently in the execution of a process
- ◊ Replace the page which is biggest in size
- ◊ Replace the page which is smaller in size

Question No: 170 (Marks: 1) - Please choose one

In pages segmentation, the logical address is legal if d is _____segment length.

- ◊ **Less than** **(Page#176)**
- ◊ Greater than
- ◊ Equal to
- ◊ Greater than or equal to

Segment number s is legal if s < STLR, and offset, d, is legal if d < limit or Segment Length.

Question No: 171 (Marks: 1) - Please choose one

The frame that has been modified during execution of a process is usually called __ frame.

- ◊ Clean
- ◊ **Dirty**
- ◊ Overwritten
- ◊ Ideal

Question No: 172 (Marks: 1) - Please choose one

FIFO Page Replacement Algorithm has the lowest page fault rate

- — True
- — **False** **(Page#198,200)**

An optimal page-replacement algorithm has the lowest page fault rate.

Question No: 173 (Marks: 1) - Please choose one

When the process tries to access locations that are not in memory, the hardware traps the operating system. This is called as _____.

- ◊ **Page Fault** (p190) **(Page#190)**
- ◊ Page replacement
- ◊ Paging
- ◊ Segmentation

Question No: 174 (Marks: 1) - Please choose one

Following schemes allow efficient implementations of page tables EXCEPT

- ◊ Hashed Page Table
- ◊ Hierarchical / Multilevel Paging
- ◊ Inverted Page Table
- ◊ **Binary Page Table** **(Page#171)**

Question No: 175 (Marks: 1) - Please choose one

We want a page replacement algorithm with the _____ page-fault rate.

- ◊ Highest
- ◊ **Lowest** **(Page#199)**
- ◊ Normal
- ◊ None of the given

Question No: 176 (Marks: 1) - Please choose one

In case of thrashing if CPU utilization is too low the operating system _____ the degree of multiprogramming.

- ◊ **Increases** **(Page#208)**
- ◊ Decreases
- ◊ Sometimes increases and sometimes decreases
- ◊ None of the given options

Question No: 177 (Marks: 1) - Please choose one

It is not possible to run a program whose size is greater than the size of the main memory.

- — True
- — **False** (Possible with Virtual Memory Concept)

Question No: 178 (Marks: 1) - Please choose one

An optimal page-replacement algorithm has the lowest page fault rate of all algorithms.

- — **True** **(Page#200)**
- — False

Question No: 179 (Marks: 1) - Please choose one

A solution to the critical section problem must satisfy the following requirements except:

- ◊ Progress
- ◊ Mutual Exclusion
- ◊ Bounded Waiting
- ◊ **Race Condition** **(Page#99)**

The solution to Critical Section Problem is:
1) Mutual Exclusion
2) Progress
3) Bounded Waiting.

Question No: 180 (Marks: 1) - Please choose one

A process is said to be in critical section if it executes code that manipulates shared data.

- — **True** **(Page#98)**
- — False

Question No: 181 (Marks: 1) - Please choose one

Logical address is generated by:

- ◊ **CPU** **(Page#153)**
- ◊ Compiler
- ◊ Hard disk
- ◊ None of these

Question No: 182 (Marks: 1) - Please choose one

Consider a UNIX system with threshold priority of 125Consider a UNIX system with threshold priority of 125. Assume two processes, P1 and P2, which came into the system at the same time. P1 has a nice value of 15 and 'recent CPU usage' 45 ticks. P2 has a nice value of 10 and „recent CPU usage‟ 65 ticks. It is time for scheduling. Which of the two processes will be chosen for execution?

- ◊ P1 because its recent CPU usage is less than that of P2’ and, therefore, its priority is higher than P2’ priority.
- ◊ **P2 because its nice value is smaller than that of P1’s.**
- ◊ P2 because its priority number is smaller than that of P1‟s.
- ◊ P1 because its process ID is smaller than P2‟s process ID.
- ◊ None of the given choices

Question No: 183 (Marks: 1) - Please choose one

What is spooling?

◊ Ability of an OS to protect jobs from writing into the wrong memory location
◊ Ability of an OS to do long term job scheduling
◊ **Ability of an OS to read jobs from cards onto the disk, and load a new job from the disk to empty memory partition**
◊ Ability of an OS to give priority to each job for execution.
◊ None of the given choices.

Question No: 184 (Marks: 1) - Please choose one

To a computer operating system, a thread is:

◊ Trace of system calls made by a process.
◊ **Identifiable computation unit with state executing a task.**
◊ Input/output stream associated with a process
◊ All of the given choices.
◊ None of the given choices.

Note: A thread is a basic unit of CPU utilization; it comprises a thread ID, a program counter, a register set, and a stack.
A thread is a flow of control within a process.
A thread is a unit of code that can be scheduled by the operating system.

Question No: 185 (Marks: 1) - Please choose one

Which component ensures that a process can execute only within its own address space?

◊ I/O device
◊ **Memory-addressing hardware** **(Page#80 OSC)**
◊ Timer
◊ Virtual memory
◊ None of the given choices

Question No: 186 (Marks: 1) - Please choose one

Segmented paging incurs less internal fragmentation than pure process-level paging.

— True
— **False**

Question No: 187 (Marks: 1) - Please choose one

The Multi-Level Feedback Queue (MLFQ) scheduling algorithm is the same as Shortest-Job-First.

— True
— **False**

Question No: 188 (Marks: 1) - Please choose one

A condition where a set of blocked processes each holding a resource and waiting to acquire a resource held by another process in the set is termed as _____.

— **Deadlock** **(Page#128)**
— Starvation

Question No: 189 (Marks: 1) - Please choose one

Preventing a condition of _____ to happen, deadlocks can be prevented to happen.

∑ Critical region
∑ **Circular wait** **(Page#134)**
∑ Monitors
∑ Critical section

Question No: 190 (Marks: 1) - Please choose one

The following is NOT a classical problem of synchronization:

∑ Bounded buffer problem
∑ Reader writer problem
∑ Dining philosopher‟s problem
∑ **Counting semaphore problem** **(Page#116)**

Question No: 191 (Marks: 1) - Please choose one

The integer value of _____semaphores can range over an unrestricted integer domain.

∑ **Counting** **(Page#115)**
∑ Binary
∑ Mutex
∑ Bounded buffer

Question No: 192 (Marks: 1) - Please choose one

The condition in which a set {P0, P1… Pn} of waiting processes must exist such that P0 is waiting for a resource that is held by P1, P1 is waiting for a resource that is held by P2, and so on, Pn-1 is waiting for a resource held by Pn, and Pn is waiting for a resource held by P0. This condition is known as _____.

- ∇ Mutual exclusion
- ∇ Hold and wait
- ∇ No preemption
- ∇ **Circular wait**

Question No: 193 (Marks: 1) - Please choose one

Deadlock detection and recovery technique is exactly similar to deadlock avoidance technique to handle deadlock in the system.

- — **True**
- — False

Question No: 194 (Marks: 1) - Please choose one

In Overlay technique, we can overload any part of the program with the part of the program required needed recently.

- — True
- — **False**

Question No: 195 (Marks: 1) - Please choose one

Operating system is manages the use of hardware among the various application programs for the users.

- — **True**
- — False

Question No: 196 (Marks: 1) - Please choose one

In shortest job first algorithm CPU schedule process according to the,

- ∇ Priority wise
- ∇ **CPU Burst** **(Page#83)**
- ∇ Distribute CPU resources equally among all processes
- ∇ All of these

Question No: 197 (Marks: 1) - Please choose one

In UNIX, a file descriptor is:

√ A positive integer associated with an open file. Its value describes the type of data in the file and the file location on disk.

√ A positive integer used to index the per process file descriptor table to eventually access an open file‟s attributes, including its location.

√ **A positive integer used to index the per process file descriptor table, which points to the inode of the file containing the executable image of the process on disk.**

√ All of the given choices.

√ None of the given choices.

Question No: 198 (Marks: 1) - Please choose one

A system call:

√ **Is an entry point into the kernel code** **(Page#15)**
√ Allows a program to request a kernel service
√ Is a technique to protect I/O devices and other system resources
√ All of the these

Question No: 199 (Marks: 1) - Please choose one

Addresses generated relative to part of program, not to start of physical memory are:

√ **Virtual**
√ Physical
√ Relocatable
√ Symbolic

Question No: 200 (Marks: 1) - Please choose one

The size of a page is defined by _____.

√ **CPU**
√ Page Table
√ Physical Memory
√ Logical Memory

CS604 – Operating System Quizzes MCQ's

1) Routine is not loaded until it is called. All routines are kept on disk in a relocatable load format. The main program is loaded into memory & is executed. This type of loading is called _____

→ Static loading
→ Dynamic loading
→ **Dynamic linking**
→ Overlays

2) Which of the following is crucial time while accessing data on the disk?

→ **Seek time**
→ Rotational time
→ Transmission time
→ Waiting time

3) The host repeatedly checks if the controller is busy until it is not. It is in a loop that status register's busy bit becomes clear. This is called _____ and a mechanism for the hardware controller to notify the CPU that it is ready is called _____.

→ Interrupt and Polling
→ Polling and Spooling
→ **Polling and Interrupt**
→ Deadlock and Starvation

4) Unix Operating System is an _____.

→ Time Sharing Operating System
→ Multi-User Operating System
→ Multi-tasking Operating System
→ **All the Above**

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

→ **Segmentation**
→ Pure demand paging
→ Swapping
→ Paging

6) Information about a process is maintained in a _____.

→ Stack
→ Translation Lookaside Buffer
→ **Process Control Block**
→ Program Control Block

7) Distributed OS works on the _____ principle.

→ File Foundation
→ **Single system image**
→ Multi system image
→ Networking image

8) The problem of fragmentation arises in _____.

→ Static storage allocation
→ Stack allocation storage
→ Stack allocation with dynamic binding
→ **Heap allocation**

9) Which file system does DOS typically use?

→ **FAT16**
→ FAT32
→ NTFS
→ WNFS

10) The program is known as _____ which interacts with the inner part of called kernel.

→ Compiler
→ Device Driver
→ Protocol
→ **Shell**

11) The time taken by the disk arm to locate the specific address of a sector for getting information is called _____.

→ Rotational Latency
→ **Seek Time**
→ Search Time
→ Response Time

12) Which file system does Windows 95 typically use?

→ FAT16
→ **FAT32**
→ NTFS
→ LMFS

13) Identify the odd thing in the services of operating system.

→ Accounting
→ Protection
→ **Error detection and correction**
→ Dead lock handling

14) Cryptography technique is used in _____.

→ Polling
→ Job Scheduling
→ **Protection**
→ File Management

15) Which of the following is not advantage of multiprogramming?

→ Increased throughput
→ Shorter response time
→ **Decreased operating system overhead**
→ Ability to assign priorities to jobs

16) In _____ OS, the response time is very critical.

→ Multitasking
→ Batch
→ Online
→ **Real-time**

17) An optimal scheduling algorithm in terms of minimizing the average waiting time of a given set of processes is _____.

→ FCFS scheduling algorithm
→ Round robin scheduling algorithm
→ **Shorest job - first scheduling algorithm**
→ None of the above

18) Real time systems are _____.

→ Primarily used on mainframe computers
→ **Used for monitoring events as they occur**
→ Used for program development
→ Used for real time interactive users

19) Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?

→ Time-sharing
→ Spooling
→ Preemptive scheduling
→ **Multiprogramming**

20) Inter process communication can be done through _____.

→ Mails
→ **Messages**
→ System calls
→ Traps

21) In Priority Scheduling a priority number (integer) is associated with each process. The CPU is allocated to the process with the highest priority (smallest integer = highest priority). The problem of, Starvation? Low priority processes may never execute is resolved by _____.

→ Terminating the process
→ **Aging**
→ Mutual Exclusion
→ Semaphore

22) CPU performance is measured through _____.

→ **Throughput**
→ MHz
→ Flaps
→ None of the above

23) PCB = _____

→ Program Control Block
→ **Process Control Block**
→ Process Communication Block
→ None of the above

24) Software is a program that directs the overall operation of the computer facilitates its use and interacts with the user. What are the different types of this software?

→ Operating System
→ Language Compiler
→ Utilities
→ **All of the above**

25) A _____ is software that manages the time of a microprocessor to ensure that all time critical events are processed as efficiently as possible. This software allows the system activities to be divided into multiple independent elements called tasks.

→ **Kernel**
→ Shell
→ Processor
→ Device Driver

26) The primary job of the operating system of a computer is to _____.

→ Command Resources
→ **Manage Resources**
→ Provide Utilities
→ Be user friendly

27) With the round robin CPU scheduling in a time-shared system _____.

→ **Using very large time slice degenerates in to first come first served algorithm**
→ Using extremely small time slices improve performance
→ Using extremely small time slices degenerate in to last in first out algorithm
→ Using medium sized time slices leads to shortest request time first algorithm

28) Which of the following is a criterion to evaluate a scheduling algorithm?

→ CPU Utilization: Keep CPU utilization as high as possible.
→ Throughput: number of processes completed per unit time.
→ Waiting Time: Amount of time spent ready to run but not running.
→ **All of the above**

29) Which of the following is contained in Process Control Block (PCB)?

→ Process Number
→ List of Open files
→ Memory Limits
→ **All of the Above**

30) Super computers typically employ _____.

→ Real time Operating system
→ **Multiprocessors OS**
→ desktop OS
→ None of the above

31) Round robin scheduling is essentially the preemptive version of _____.

→ **FIFO**
→ Shortest job first
→ Shortest remaining
→ Longest time first

32) A page fault occurs:

→ **when the page is not in the memory**
→ when the page is in the memory
→ when the process enters the blocked state
→ when the process is in the ready state

33) Which of the following will determine your choice of systems software for your computer?

(1) Is the applications software you want to use compatible with it ?
(2) Is it expensive?
(3) Is it compatible with your hardware?
(4) Both 1 and 3

34) Let S and Q be two semaphores initialized to 1, where P0 and P1 processes the following statements wait(S);wait(Q); ---; signal(S);signal(Q) and wait(Q); wait(S);---;signal(Q);signal(S); respectively. The above situation depicts a _____.

→ Semaphore
→ **Deadlock**
→ Signal
→ Interrupt

35) What is a shell?

→ It is a hardware component
→ **It is a command int:gasp:erpreter**
→ It is a part in compiler
→ It is a tool in CPU scheduling

36) Routine is not loaded until it is called. All routines are kept on disk in a relocatable load format. The main program is loaded into memory & is executed. This type of loading is called _____.

→ Static loading
→ Dynamic loading
→ **Dynamic linking**
→ Overlays

37) In the blocked state:

→ **the processes waiting for I/O are found**
→ the process which is runn:tongue:ing is found
→ the processes waiting for the processor are found
→ None of the above

38) What is the memory from 1K - 640K called?

→ Extended Memory
→ Normal Memory
→ Low Memory
→ **Conventional Memory**

39) Virtual memory is _____.

→ An extremely large main memory
→ An extremely large secondary memory
→ **An illusion of extremely large main memory**
→ A type of memory used in super computers.

40) The process related to process control, file management, device management, information about system and communication that is requested by any higher level language can be performed by_____.

→ Editors
→ Compilers
→ **System Call**
→ Caching

41) 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.

→ 310
→ 324
→ 315
→ **321**

42) Multiprogramming systems _____.

→ Are easier to develop than single programming systems
→ Execute each job faster
→ **Execute more jobs in the same time**
→ Are used only on large main frame computers

43) Which is not the state of the process?

→ Blocked
→ Running
→ Ready
→ **Privileged**

44) The solution to Critical Section Problem is: Mutual Exclusion, Progress and Bounded Waiting.

→ The statement is false
→ **The statement is true.**
→ The statement is contradictory.
→ None of the above

45) The problem of thrashing is effected scientifically by _____.

→ **Program structure**
→ Program size
→ Primary storage size
→ None of the above

46) The state of a process after it encounters an I/O instruction is _____.

→ Ready
→ **Blocked/Waiting**
→ Idle
→ Running

47) The number of processes completed per unit time is known as _____.

→ Output
→ **Throughput**
→ Efficiency
→ Capacity

48) _____ is the situation in which a process is waiting on another process,which is also waiting on another process ... which is waiting on the first process. None of the processes involved in this circular wait are making progress.

→ **Deadlock**
→ Starvation
→ Dormant
→ None of the above

49) Which of the following file name extension suggests that the file is Backup copy of another file?

→ TXT
→ COM
→ BAS
→ **BAK**

50) Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?

→ Time-sharing
→ Spooling
→ Preemptive scheduling
→ **Multiprogramming**

51) A critical region:

→ **is a piece of code which only one process executes at a time**
→ is a region prone to deadlock
→ is a piece of code which only a finite number of processes execute
→ is found only in Windows NT operation system

52) The mechanism that brings a page into memory only when it is needed is called _____.

→ Segmentation
→ Fragmentation
→ **Demand Paging**
→ Page Replacement

53) PCB =

→ Program Control Block
→ **Process Control Block**
→ Process Communication Block
→ None of the above

54) FIFO scheduling is _____.

→ Preemptive Scheduling
→ **Non Preemptive Scheduling**
→ Deadline Scheduling
→ Fair share scheduling

55) Switching the CPU to another Process requires to save state of the old process and loading new process state is called as _____.

→ Process Blocking
→ **Context Switch**
→ Time Sharing
→ None of the above

56) Which directory implementation is used in most Operating System?

→ Single level directory structure
→ Two level directory structure
→ **Tree directory structure**
→ Acyclic directory structure

57) The Banker's algorithm is used:

→ **to prevent deadlock in operating systems**
→ to detect deadlock in operating systems
→ to rectify a deadlocked state
→ none of the above

58) A thread:

→ **is a lightweight process where the context switching is low**
→ is a lightweight process where the context switching is high
→ is used to speed up paging
→ none of the above

59) _____ is a high level abstraction over Semaphore.

→ Shared memory
→ Message passing
→ **Monitor**
→ Mutual exclusion

60) A tree structured file directory system:

→ **allows easy storage and retrieval of file names**
→ is a much debated unnecessary feature
→ is not essential when we have millions of files
→ none of the above

CS604 - More Quizzes

1) A 20-bit address bus allows access to a memory of capacity

1 Mb
2 Mb
32Mb
64 Mb

2) On-chip cache has:

Lower access time than RAM
Larger capacity than off chip cache
Its own data bus
become obsolete

3) A RAID system is useful because:

It increases processor speed
Increases disk storage capacity
Increases disk storage capacity and availability
Increases OS efficiency

4) Multiprogramming refers to

Having several programs in RAM at the same time
Multitasking
Writing programs in multiple languages
None of the previous

5) Multiprocessing is:

Same as Multitasking
Same as multiprogramming
Multi-user
involves using more than one processor at the same time

6) Timesharing is the same as:

Multitasking
Multiprogramming
Multi-user
None of the previous

7) The average memory access time for a machine with a cache hit rate of 90% where the cache access time is 10ns and the memory access time is 100ns is:

55ns
45ns
90ns
19ns

8) The memory address register is used to store:

Data to be transferred to memory
Data that has been transferred from memory
The address of a memory location
An instruction that has been transferred from memory

9) The memory data register is used to store:

Data to be transferred to or from memory
Data to be transferred to the stack
The address of a memory location
An instruction that has been transferred from memory

10) In accessing a disk block the longest delay is due to:

Rotation time
seek time
transfer time
clock speed

11) Consider the following set of processes, with the length of the CPU-burst time given in milliseconds:

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

Assume that P1 is at the head of the ready queue and P5 is at the tail, and ignore the time for changing inter-processes. Using Round Robin scheduling algorithm (where the quantum q= 1ms) which is the average turnaround time?

tav = 12ms
tav = 9.2ms
tav = 7ms
tav = 10.8ms
None of these

12) There are 10 different processes running on a workstation. Idle processes are waiting for an input event in the input queue. Busy processes are scheduled with the Round-Robin timesharing method.
Which out of the following quantum times is the best value for small response times, if the processes have a short runtime, e.g. less than 10ms?

tQ = 15ms
tQ = 40ms
tQ = 45ms
tQ = 50ms

13) Consider a swapping system in which memory consists of the following hole sizes in memory order:

H0 H1 H2 H3 H4 H5 H6 H7
10K 4KB 20KB 18KB 7KB 9KB 12KB 15KB
and a successive segment request of

a) 12 KB
b) 10KB
c) 9KB

Which of the following sentences is/are true?

First Fit algorithm allocates H2, H0, H3 for the mentioned request.
Best Fit algorithm allocates H2, H0, H3 for the mentioned request.
First Fit algorithm allocates H2, H6, H7 for the mentioned request.
Worst Fit algorithm allocates H2, H3, H6 for the mentioned request.

14) Page fault occurs when:

The page is corrupted by application software.
The page is in memory.
The page is not in memory
One tries to divide a number by 0.

15) Determine the number of page faults when references to page occur in the following order: 1,2,4,5,2,1,2,4. Assume that the main memory can accommodate 3 pages and the main memory already has the pages 1 and 2, with page 1 having been brought earlier than page 2. (LRU algorithm is used)

3
5
4
None of these

16) The page replacement policy that sometimes leads to more page faults when the size of the memory is increased is:

FIFO
LRU
no such policy exists
none of the above.

17) DIJKSTRA'S baking algorithm in an operating system, solves the problem of

Deadlock avoidance
deadlock recovery
Mutual exclusion
context switching.

18) Necessary conditions for deadlock are

Non pre-emption and circular wait
mutual exclusion ad partial allocation
Both of the above options
none of the above

19) At a particular time, the value of counting semaphore is 10. it will become 7 after

3 V operations
5P operations
5V and 2P operations
13 P and 10 V operations

20) Semaphores are used to solve the problem of:

Race condition
process synchronization
Both of above
none of the above.

21) The size of virtual memory depends on:

The size of the data bus
The size of main memory
The size of address bus
None of the above

22) Suppose that a process is in 'BOCKED' state waiting for some I/O service. When the service is completed, it goes to the:

RUNNING state
READY state
SUSPENDED state
TERMINATED state

23) In real time operating systems, which of the following is the most suitable scheduling scheme?

Round-Robin
FCFS
Pre-emptive scheduling
Random scheduling

24) Which of the following is well suited for batch processing?

Process control
video game control
Preparing pay bills of employees
none of the above

25) Which of the following page replacement algorithms suffers from belady's anomaly?

Optimal replacement
LRU
FIFO
both optimal replacement and FIFO.