Subject:Operating System (22516)

SYLLABUS

Chapter No.	Name of chapter	Marks
1	Overview of Operating System	08
2	Services and Components of Operating System	10
3	Process Management	14
4	CPU Scheduling and Algorithms	14
5	Memory Management	14
6	File Management	10
	Total Marks	70

BOARD THEORY PAPER PATTERN FOR OSY (22516)

Q.1		**Attempt any FIVE** **5*2=10**
	a)	Batch OS and Time Shared OS.
	b)	Services of OS
	c)	Process, Program
	d)	Features of Preemptive Scheduling
	e)	Page Fault, Segmentation
	f)	Syntax of PS Command and its Use
	g)	File Attributes
Q.2		**Attempt any THREE** **3*4=12**
	a)	Dual modes of operations of OS
	b)	OS for protection and Sharing
	c)	IPC and its Advantages
	d)	Scheduling criteria's
Q.3		**Attempt any THREE** **3*4=12**
	a)	PCB and Its Information
	b)	Deadlock and necessary Conditions to occurs Deadlocks
	c)	Compaction and Swapping related to memory management
	d)	Different File Allocation Methods
Q.4		**Attempt any THREE** **3*4=12**

	a)	Comparison between Windows and Linux OS
	b)	System Class Related to Device Management
	c)	Comparison between long term and short term schedulers
	d)	Comparison between FCFS and SJF Scheduling Algorithms.
	e)	Contiguous Memory Allocation

Q.5		**Attempt any TWO** **2*6=12**
	a)	Uses of OS tools 1)Performance Monitor 2)Task Schedulers 3)User Management
	b)	Use of Kill, PS and Sleep Command in Unix OS.
	c)	Calculate page faults using FIFO and LRU Method
Q.6		**Attempt any TWO** **2*6=12**
	a)	Calculate Average Waiting Time And Average Turn Around Time
	b)	Compare between Bitmap and Linked List free space management techniques
	c)	Directory Structure of File System in terms of Single level, Two level, Tree Level

CLASS TEST - I

PAPER PATTERN

Syllabus

Unit No.	Name of the Unit	Course Outcome (CO)
1	Overview of Operating System	CO-516.01
2	Services and Components of operating System	CO-516.02
3	Process Management	CO-516.03

Q.1	**Attempt any FOUR** **4*2=8Marks**	Course Outcome (CO)
a)	Differentiate between multiprogramming and multiprocessing os.	CO-516.01
b)	Draw layered structure of OS	CO-516.01
c)	List any 4 types of OS.	CO-516.01
d)	State any 2 activities performed by file management component of OS.	CO-516.02
e)	List any 4 OS Services	CO-516.02
f)	Draw Process state transition Diagram.	CO-516.03
g)	Define System Calls.	CO-516.03
Q.2	**Attempt any THREE** **3*4= 12Marks**	
a)	Explain real time os.List its any 4 Applications	CO-516.01
b)	What is the purpose of system calls? State any 2 calls with its functions.	CO-516.02
c)	Describe Process control block with suitable diagram	CO-516.02
d)	Differentiate between long term schedulers and Short term Schedulers w.r.t to following parameters. i)Selection of Job ii)Frequency of Operations iii)speed iv)Accessing which part of the system	CO-516.03

CLASS TEST - II

PAPER PATTERN

Syllabus

Unit No.	Name of the Unit	Course Outcome (CO)
4	CPU Scheduling and Algorithm	CO-516.04
5	Memory Management	CO-516.05
6	File Management	CO-516.06

Q.1	**Attempt any FOUR** **4*2= 8Marks**	Course Outcome (CO)
a)	CPU and I/O Burst Cycle	CO-516.04
b)	Deadlock and its Characteristics	CO-516.04
c)	Multilevel queue scheduling	CO-516.04
d)	Swapping	CO-516.05
e)	Scheduling Criteria	CO-516.04
Q.2	**Attempt any THREE** **3*4= 12Marks**	
a)	Bit map method for free space management	CO-516.04
b)	Process related Commands	CO-516.05
c)	Contiguous file Allocation	CO-516.04
d)	Round Robin Scheduling Algorithm	CO-516.05

COURSE OUTCOME (CO)

COURSE: Operating System (22516)

PROGRAMME: Computer Technology

CO.NO	Course Outcome
CO-516.1	Install Operating System and configure it
CO-516.2	Use Operating system tools to perform various functions
CO-516.3	Execute process commands for performing process management operations
CO-516.4	Apply scheduling algorithms to calculate turnaround time and average waiting time
CO-516.5	Calculate efficiency of different memory management techniques.
CO-516.6	Apply File management techniques.

1. Overview of Operating System

Position in Question Paper **Total Marks-08**

Q.1. a) 2-Marks.
Q.1. b) 2-Marks.
Q.2. a) 4-Marks.

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1. Define Operating System. Explain Functions of Operating System
2. Explain Classification of Operating System in brief.
3. Explain Multitasking and Multiprogramming Operating System in brief.
4. Write a Note on Batch Operating System.
5. Explain the Concept of Spooling
6. State any Four Services provided by Operating System.
7. Differentiate between Batch Operating System and Time Shared Operating System
8. Compare between Windows and Linux Operating System.
9. Describe essential Activities done by Operating system for protection and sharing.
10. Explain dual modes of operations of Operating system
11. Draw Layered Structure of Operating System.
12. List any four types of Operating Systems.
13. Differentiate between Multiprogramming & Multiprocessing Operating System.
14. Explain real Time Operating System. List it's any Four Applications
15. Write a Note on Distributed Operating System.

MCQ Question

(Total number of Question=Marks*3=8*3=24)

1) Operating System is .
   a.Collection of Programs that manages hardware resources.
   b.System service provider to application programs.
   c.Link to the interface the hardware and application programs.
   d.All of the above

2) To access the services of operating system the interfaces is provided by_____.
   a) System Calls c) Library
   b)API d)Assembly instructions

3) From following which is not a system call for process control.
   a) End, abort **c)Read, write, reposition**
   b) Load, execute d)Wait for Time

4) Interprocess communication means
   a) Communication within processes
   b) **Communication between two processes**
   c) Communication between two threads of same process
   d) None of the mentioned

5) Which of the following is not an operating system?
   a) Windows **c)Oracle**
   b) Linux d) DOS

6) What is the maximum length of the filename in DOS?
   a)4 **c)8**
   b)5 d)12

7) When was the first operating system developed?
   a)1949 c)1951
   b)1950 d)1952

8) When were MS windows operating systems proposed?
   a)1994 c)1992
   b)1990 **d)1985**

9) Which of the following is the extension of Notepad?
   a)txt c)ppt
   b)xls d)bmp

10) What else is a command interpreter called?
   a) prompt **c) shell**
   b) kernel d)command

11) What is the full name of FAT?
   a) File attribute table c) Font attribute table
   b) File allocation table d) Format allocation table

12) BIOS is used?
a) By operating system
b) By compiler
c) By interpreter
d) By application software

13) What is the mean of the Booting in the operating system?
a) Restarting computer
b) Install the program
c) To scan
d) To turn off

14) When does page fault occur?
a) The page is present in memory.
c) The page does not present in memory.
b) The deadlock occurs.
d) The buffering occurs

15) Banker's algorithm is used?
a) To prevent deadlock
b) To deadlock recovery
c) To solve the deadlock
d) None of these

16) When you delete a file in your computer, where does it go?
a) Recycle bin
b) Hard disk
c) Taskbar
d) None of these

17) Which is the Linux operating system?
a) Private operating system
b) Windows operating system
c) Open-source operating system
d) None of these

18) What is the full name of the DSM
a) Direct system module
b) Direct system memory
c) Demoralized system memory
d) Distributed shared memory

19) What is the full name of the IDL?
a) Interface definition language
b) Interface direct language
c) Interface data library
d) None of these

20) What is bootstrapping called?
a) Cold boot
b) Cold hot boot
c) Cold hot strap
d) Hot boot

21) What is the fence register used for?
a) To disk protection
b) To CPU protection
c) To memory protection
d) None of these

22) If the page size increases, the internal fragmentation is also?
a) Decreases
b) Increases
c) Remains constant
d) None of these

23) Which of the following is a single-user operating system?
a) Windows
b) MAC
c) Ms-Dos
d) None of these

24) The size of virtual memory is based on which of the following?
a) CPU
b) RAM
c) Address bus
d) Data bus

2. Services and Components of Operating System

Position in Question Paper **Total Marks-10**

Q.1. b) 2-Marks.
Q.3. c) 4-Marks.
Q.4. b) 4-Marks.

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1. Define System Calls. Write any Four System Calls related to Device Management and file Management:
2. With Suitable Diagram Explain System call Implementation
3. Define Process. State what is Interprocess Communication (IPC) and explain it's Advantages
4. Explain Operating System Components in detail.
5. Explain any four system calls related to process management.
6. What is Process Management? State Four functions to be performed by operating system for process management
7. With the help of suitable diagram explain Open() System calls.
8. Explain major activities of memory management which is a component of OS.
9.Explain different activities of I/O system Management which is a component of OS.

MCQ Question

(Total number of Question=Marks*3=10*3=30)

1) A process stack does not contain___
   a)Function parameters
   b)Local variable
   c) Return address
   d) PID of Child Process

2) Process can affect of be affected by other processes executing in the system.
   a) Cooperating process
   b) Child process
   c) Parent process
   d) Init process

3) For which of the below allocation & use is managed entirely in the hardware?
   a)Caches
   b) Disk
   c)RAM
   d) All of Above

4) What are the services operating systems provides to both the users and to the programs?
   a) File System manipulation
   b) Error Detection
   c) Program execution
   d) Resource Allocation

5) Which of the following few common services provided by an operating system?
   a) Protection
   b) Program execution
   c) I/O operations
   d) All of the above

6) Which of the following are examples of storage media?
   a) magnetic disk
   b) optical disk
   c) Both A and B
   d) None of the above

7) Which of the following is true about Program execution?
   a) Restrict to load a program into memory.
   b) Provides a mechanism for process synchronization
   c) Do not provides a mechanism for process communication
   d) Do not provides a mechanism for deadlock handling.

8) Which of the following is false about I/O Operation
   a) Operating system does not provides the access to the I/O device
   b) I/O operation means read or write operation
   c) An I/O subsystem comprises of I/O devices
   d) None of the above

9) Which of the following is false about File system manipulation?
   a) Computers can store files on the disk (Primary storage), for long-term storage purpose
   b) Program needs to read a file or write a file.
   c) Operating System provides an interface to the user to create/delete files
   d) Operating System provides an interface to create the backup of file system.

10) Which of the following is true about Communication?
a) The OS handles routing and connection strategies, and the problems of contention and security.
b) Two processes often require data to be transferred between them
c) Communication may be implemented by two methods, either by Shared Memory or by Message Passing.
d) All of the above

11) Which of the following is true about Communication?
a) Errors can occur anytime and anywhere.
b) An error may occur in CPU, in I/O devices or in the memory hardware.
c) OS constantly checks for possible errors.
d) All of the above

12) The OS ensures that all access to system resources is controlled. The major activities of an operating system with respect to?
a) Error handling
b) Resource Management
c) Protection
d) Communication

13) Two processes often require data to be transferred between them. The major activities of an Operating system with respect to?
a) Error handling
b) Resource Management
c) Protection
d**) Communication**

14) For Communication operating system moves_____
a) Process
b) Packets
c) Programmes
d)Modules

15) For Web Based Computing System, computer used normally are
a)Personal Computers
b) Servers
c) Network Computers
d) Tablets

16) A Service which is not provided by operating system is
a)Networking
b)User Interface
c) Programme Execution
d)Error Detection

17) OS stands for ____
a) Operating solve
b) Open Source
c) Open System
d) **Operating system**

18) World Wide Web is being standard by
a) Worldwide corporation
b) W3C
c) World Wide Web Standard
d) World Wide Consortium

19) A co-processor is_____
a)Is relatively easy to support in software
b) Causes all processor to function equally
c) Works with any application
d)Is quite common in modern computer

20) A Microsoft Windows is a
a) Operating system c) Word Processing
b) Graphic program d) Database program

21) Which of the following is program group?
a) **Accessories** c) Word
b) Paint d) All of above

22) Which is not application software?
a) Windows NT c) WinWord XP
b) Page Maker d) Photoshop

23) Which program compresses large files into a smaller file
a) WinZip c) WinStyle
b) WinShrink d) None of above

24) My Computer was introduced fro
a) Windows 3.1 c) **Windows 95**
b) Windows 3.11 d) Windows 98

25) Which of the following is not an operating system?
a)DOS c) Windows
b) Linux d) **Oracle**

26) Linux is which kind of operating system
a)**Open source** c) Windows
b) Microsoft d)Mac

27) The most recent version of MAC OS is based on the which operating system
a) Windows **c) Unix**
b) Linux d) CMOS

28) In Windows, start button is used to
a) Run applications c) Turn off the system
b) Device setting **d) All of above**

29) ____runs on computer hardware and serves as a platform for other system to run on
a) **Operating system** c) System software
b) Application system d) All of above

30) _____ Is the layer of a computer system between the hardware and the user?
a) Operating environment c) System environment
b) Operating system d) None of these

31) Which is the first program run on a computer when the computer boots up
a) System software c) System operations
b) **Operating system** d)None

32) Which of the following requires a device driver?
a) Register c) Main memory
b) Cache d) **Disk**

3. Process Management System

Position in Question Paper **Total Marks-14**

Q.1. c) 2-Marks.
Q.3. a) 4-Marks.
Q.4. b) 4-Marks
Q.5. c) 6-Marks

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1. Distinguish between Process and Program.
2. Explain Process States with suitable Diagram.
3. With suitable Diagram explain PCB (Process Control Block)
4. Define Process Scheduling.
5. Explain i) Long Term Schedulers
   ii) Medium Term Schedulers
   Ii) Short Term Schedulers
6. Explain Scheduling Queues with suitable examples.
7. Define Context Switch.
8. With suitable diagram explain IPC (inter process communication).
9. Explain Shared Memory Model and Message Passing Model of IPC (interprocess Communication).
10. Explain Critical Section Problem.
11. What is Thread? Write a note on Multithreaded Programming. 12] Differentiate between Process and Threads.
12. Explain User Thread and Kernel Threads.

MCQ Question

(Total number of Question=Marks*3=14*3=42)

1) The systems which allow only one process execution at a time, are called _____
   a) uniprogramming systems
   c) unitasking systems
   b) uniprocessing systems
   d) none of the mentioned

2) In operating system, each process has its own _____
   a) address space and global variables
   c) Pending alarms, signals and signal handlers
   b) open files
   d) all of the mentioned

3) In UNIX, Which system call creates the new process?
   a) fork
   c) new
   b) create
   d) none of the mentioned

4) A process can be terminated due to
   a) normal exit
   c) killed by another process
   b) fatal error
   d) all of the mentioned

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

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

7) A set of processes is deadlock if ____.
   a) each process is blocked and will remain so forever
   b) each process is terminated
   c) all processes are trying to kill each other
   d) none of the mentioned

8) A process stack does not contain _____
   a) Function parameters
   c) Return addresses
   b) Local variables
   d) PID of child process

9) Which system call can be used by a parent process to determine the termination of child process?
   a) wait
   c) fork
   b) exit
   d) get

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

11) Scheduling of threads are done by
a) input
b) output
c) Operating system
d) Memory

12)Process Synchronization of program is done by
a) Input
b) Output
c) Operating system
d) Memory

13) For Execution process needs
a) Throughput
b) Timer
c) Resources
d) Access Time

14) An Executed program of the computer system is called as
a) Trap
b) Process
c) Program
d) Interrupt

15) A single threaded process of operating system has
a) One program counter
b) two program counter
c) three program counters
d) Four program counter

16) The systems which allow only one process execution at a time are called:
a) Uniprogramming systems
b) Uniprocessing system
c) Unitasking systems
d) None of the mentioned

17) In operating system, each process has its own:
a) address space and global variables
b) open files
c) pending alarms, signals and signal handlers
d) all of the mentioned

18) In Unix, Which system call creates the new process?
a) fork
b) create
c) new
d) none of the mentioned

19) A process can be terminated due to:
a) normal exit
b) fatal error
c) killed by another process
d) all of the mentioned

20) What is the ready state of a process?
a) when process is scheduled to run after some execution
b) when process is unable to run until some task has been completed
c) when process is using the CPU
d) None of the mentioned

21) If a process fails, most operating system write the error information to a _____
a) log file
b) another running process
c) new file
d) none of the mentioned

22) In operating system, each process has its own _____
a) address space and global variables
b) open files
c) Pending alarms, signals and signal handlers
d) all of the mentioned

23) A set of processes is deadlock if _____
a) Each process is blocked and will remain so forever
b) each process is terminated
c) all processes are trying to kill each other
d) none of the mentioned

24) Which system call returns the process identifier of a terminated child?
a) wait c) fork
b) exit d) get

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

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

27) The number of processes completed per unit time is known as _____
a) Output c) Efficiency
b) Throughput d) Capacity

28) The entry of all the PCBs of the current processes is in _____
a) Process Register **c) Process Table**
b) Program Counter d) Process Unit

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

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

31) Which is not the state of the process?
a) Blocked c) Running
b) Ready **d)Privileged**

32) What is the interprocess communication?
a) Communication within the process
b) Communication between two process
c) Communication between two threads of same process
d)None of the mentioned

33)A process control block is a
a)Data Structure c)A secondary storage section
b)Process type variable d)A block in the memory

34)A process stack does not contain
a)local variable
b) a Function parameter
c)return addresses
d) PID of the child processes

35) The state of the process is defined by
a) The final activity of the process
b) The activity just executed by the process
c) The activity to next be executed by the process
d) The current activity of the process

36) What is the ready state of a process?
a) When a process is unable to run until some task has been completed
b)When process is scheduled to run after some execution
c)When process is using the CPU
d) None of the mentioned

37) The entry of all the PCB of the current processes is in
a) wait
b) exit
d
c)fork
d)get

38) The degree of the multiprogramming is
a) The number of processes executed per unit time
b) The number of processes in the ready queue
c) The number of the processes in I/O Queue
d) The number of processes in the memory

39) A process in the _____ state is moved to the _____ state if there are no ready processes, then at least one blocked process is swapped out to make room for another process that is not blocked.
a) blocked, blocked/suspend
b) ready, ready/suspend
c) blocked/suspend, ready/suspend
d) ready/suspend, ready

40) A _____ process is moved to the ready state when its time allocation expires.
a) New
b) Blocked
c) Running
d) Suspend

41) In five state process model _____state is a process that is prepared to execute when given the opportunity.
a) Ready
b) Paused
c) Queued
d) Blocked

42) In five state process model _____ state is a process then that cannot execute until some event occurs, such as the completion of an I/O operation.
a) Ready
b) Paused
c) Queued
d)Blocked

4. Scheduling Algorithm

Position in Question Paper **Total Marks-14**

Q.1. d) 2-Marks.
Q.2. d) 4-Marks.
Q.3. d) 4-Marks.
Q.4. d) 4-Marks.
Q.6. a) 6-Marks.

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1. Explain CPU-I/O Burst Cycle in brief.
2. Define Scheduling Criteria in brief.
3. Differentiate between Preemptive and Non preemptive Scheduling Algorithms.
4. Explain FCFS and SJF Scheduling algorithms with suitable diagram.
5. Explain priority based scheduling algorithm with example.
6. Explain Round Robin Scheduling Algorithm with suitable example.
7. Explain multilevel priority Queue Scheduling Algorithms
8. Define Deadlock. Explain Necessary conditions to occur Deadlock:
9. Write a note on deadlock handling?
10. Explain Bankers Algorithm of Deadlock Avoidance.
11. Explain Resource Request Algorithm for Deadlock Avoidance.
12. With Resource Allocation Graph and Corresponding wait for Graph Explain Deadlock Detection.
13. Write a note on Deadlock Recovery
14. List and Explain term a) Turn around Time b) Average Waiting Time c) Gantt Chart
15. State the meaning of following terms related to process scheduling criteria a) Response Time b) Deadlock c) Throughput d) Turn around Time

MCQ Question

(Total number of Question=Marks*3=14*3=42)

1) Which module gives control of the CPU to the process selected by the short-term scheduler?
   a) dispatcher
   b) interrupt in the shortest job first queue
   c) scheduler of the First in First Out Queue
   d) None of the mentioned

2) The processes that are residing in main memory and are ready and waiting to execute are kept on a list called
   a) Job queue in Round Robin Algorithm
   b) ready queue
   c) execution queue in Shortest Job First
   d) Process queue in Process Queue pool

3) The interval from the time of submission of a process to the time of completion is termed as
   a) Waiting time
   b) Turnaround time
   c) response time in round robin Algorithm
   d) Throughput

4) Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?
   a) first-come, first-served scheduling
   b) shortest job scheduling
   c) priority scheduling
   d) none of the mentioned

5) In priority scheduling algorithm
   a) CPU is allocated to the process with highest priority
   b) CPU is allocated to the process with lowest priority
   c) Equal priority processes can not be scheduled
   d) None of the mentioned

6) In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of
   a) all process
   b) currently running process
   c) parent process
   d) init process

7) Which algorithm is defined in Time quantum?
   a) shortest job scheduling algorithm
   b) round robin scheduling algorithm
   c) priority scheduling algorithm
   d) multilevel queue scheduling algorithm

8) Process are classified into different groups in _____
   a) shortest job scheduling algorithm
   b) round robin scheduling algorithm
   c) priority scheduling algorithm
   d) multilevel queue scheduling algorithm

9) In multilevel feedback scheduling algorithm _____
a) a process can move to a different classified ready queue
b) classification of ready queue is permanent
c) processes are not classified into groups
d) processes are not classified into groups

10) Which one of the following cannot be scheduled by the kernel
a) kernel level thread
c) process
b) user level thread
d) none of the mentioned

11) Which of the following cannot be scheduled by the kernel
a) process
c) kernel-level thread
b) user-level thread
d) none of the mentioned

12) if _____ rule sequences the jobs Orders are processed in the sequence they arrive
a) first come, first served
c) critical section
b) critical region
d) semaphor

13) Scheduling algorithm in multilevel feedback
a) processes are not classified into groups
b) a process can move to a different classified ready queue.
c) classification of the ready queue is permanent
d) none of the mentioned

14) Select one which algorithms tend to minimize the process flow time?
a) First come First served
c) Shortest Job First
b) Earliest Deadline First
d) Longest Job First

15) The process can be classified into many groups in
a) Shortest job first scheduling algorithm
b) Multilevel queue scheduling algorithm
c) round-robin scheduling algorithm
d) Priority scheduling algorithm

16) The turnaround time for short jobs during multiprogramming is usually Shortened and that for long jobs is slightly _____
a) Shortened
c) Lengthened
b) Unchanged
d) Shortened

17) Time quantum can be said
a) Multilevel queue scheduling algorithm
b) round-robin scheduling algorithm
c) Shortest job scheduling algorithm
d) Priority scheduling algorithm

18) At the ready queue when a process arrives In priority scheduling algorithm, the priority of this process is compared with the priority of?
a)currently running process
c) all process
b) parent process
d) init process

19) The FIFO algorithm said:
a) executes the job first that needs a minimal processor
b) The job first executes that comes last in the queue
c) The job first executes that has maximum processor needs
d) The job first executes that came in first in the queue

20) A program that is bound by CPU might have
a) Cpu bursts many short
b) Cpu bursts a few short
c) Cpu bursts a few longer
d) None of the above

21) Scheduling algorithms that work on complex :
a) uses few resources
b) uses most resources
c) are suitable for large computers
d) all of the mentioned

22) Scheduling algorithm which allocates the CPU first to the process which requests the CPU first?
a) FCFS scheduling
b) priority scheduling
c) shortest job scheduling
d) none of the mentioned

23) In an operating system, the portion of the process scheduler that forward processes is concerned with:
a) running processes are assigning to blocked queue
b) ready processes are assigning to CPU
c) ready processes are assigning to the waiting queue
d) all of the mentioned

24) From the time of submission of a process to the time of completion, The interval is termed as
a) waiting time
b) turnaround time
c) response time
d) Throughput

25) From the time of submission of a process to the time of completion, The interval is termed as
a) waiting time
b) turnaround time
c) response time
d) Throughput

26)under the category of_____ Round-robin scheduling falls :
a) Preemptive scheduling
b) Nonpreemptive
c) All of the mentioned
d) None of the mentioned

27) The processes that are inhabited in main memory and are ready and waiting to execute and remained on a list called
a) process queue
b) execution queue
c) job queue
d) ready que

28) control of the CPU to the process selected by the short-term scheduler is assigned by the module _____.
a) Interrupt
c) dispatcher
b) Scheduler
d) none of the mentioned

29) Which of the following scheduling algorithms gives minimum average waiting time
a) FCFS
c) Round – robin
b) SJF
d) Priority

30) Which of the following statements are true ?
a) Shortest remaining time first scheduling may cause starvation
b) Preemptive scheduling may cause starvation
c) Round robin is better than FCFS in terms of response time
a)a only
c) b and c only
b) a and c only
d) a, b and c

31) A solution to the problem of indefinite blockage of low – priority processes is
a) Starvation
c) Ready queue
b) Wait queue
d) Aging

32) One of the disadvantages of the priority scheduling algorithm is that:
a) it schedules in a very complex manner
b) it scheduling takes up a lot of time
c) it can lead to some low priority process waiting indefinitely for the CPU
d) None of the mentioned

33) An SJF algorithm is simply a priority algorithm where the priority is :
a) The predicted next CPU burst
b) The inverse of the predicted next CPU burst
c) The current CPU burst
d) Anything the user wants

34) Preemptive Shortest Job First scheduling is sometimes called :
a) Fast SJF scheduling
b) EDF scheduling – Earliest Deadline First
c) HRRN scheduling – Highest Response Ratio Next
d) SRTN scheduling – Shortest Remaining Time Next

35) The FCFS algorithm is particularly troublesome for _____
a) Time sharing systems
c) Multiprocessor systems
b) multiprogramming systems
d) Operating system

36) The real difficulty with SJF in short term scheduling is :
a) it is too good an algorithm
c) it is too complex to understand
b) knowing the length of the next CPU
d) none of the mentioned

37) The most optimal scheduling algorithm is :
a)FCFS
c) RR
b) SJF
d) none of above

38) Scheduling is :
a) allowing a job to use the processor c) all of the mentioned
b) making proper use of processor d) none of the mentioned

39) The strategy of making processes that are logically runnable to be temporarily suspended is called:
a)Non preemptive scheduling c)Shortest job first
b) Preemptive scheduling d) First come First serve

40) The FIFO algorithm:
a) First executes the job that came in last in the queue
b) First executes the job that came in first in the queue
c) First executes the job that needs minimal processor
d) First executes the job that has maximum processor needs

41) Complex scheduling algorithms:
a) are very appropriate for very large computers
b) use minimal resources
c) use many resources
d) all of the mentioned

42) The switching of the CPU from one process or thread to another is called :
a) process switch c) context switch
b) task switch **d)All of above**

5. Memory Management

Position in Question Paper **Total Marks-14**

Q.2. a) 4-Marks.
Q.3. c) 4-Marks.
Q.6. b) 6-Marks.

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1. Define Memory? Explain functions of memory management
2. Explain Memory Partitioning with suitable diagram.
3. Explain Static and Dynamic Partitioning With Suitable Example
4. Explain free space management technique in brief.
5. Explain Virtual Memory with neat diagram.
6. What is paging? Explain Demand Paging in brief.
7. What is Segmentation? Write its Advantages and Disadvantages.
8. Differentiate between Segmentation and Paging.
9. Explain FIFO and Optimal Page Replacement Algorithms with Suitable Examples.
10. With suitable examples explain LRU (Least Recently Used) Page Replacement Algorithm.
11. Explain MFT and MVT with suitable example.
12. Explain Linked List Allocation with diagram.
13. Define Page Fault.

MCQ Question

(Total number of Question=Marks*3=14*3=42)

1) Among all memory management techniques _____ is simple to implement little operating system overhead.

a) Fixed partitioning c) Virtual Memory
b) Simple Paging d) Paging

2) Which one among the following is the address generated by CPU?

a) Physical address c)Absolute Address
b) Logical address d)none of the mentioned

3) For larger page tables, they are kept in main memory and a _____ points to the page table.

a)Page Table Base Register c) Page Table Register Pointer
b)Page Table Base Pointer d) Page Table base

4) For Every Process there is a _____

a) Page Table c)Pointer to Page Table
b) Copy of Page Table d) All of Above

5) During dynamic memory allocation in CPP, new operator returns _____ value if memory allocation is unsuccessf

a)False c)Zero
b)Null d)None of these

6)In CPP, dynamic memory allocation is done using _____ operator.

a) Calloc c) Allocate
b)Malloc **d) New**

7) A process can map any of its pages into the address space of another

a) Process c) System
b)Program d) Application

8) The owner of an address space can grant a number of its

a)Modules c)Devices
b) Pages d) Computers

9) Which among the following page replacement algorithms suffers from Belady's anomaly?

a)FIFO c)Optimal Page Replacement
b)LRU d) Both FIFO & LRU

10) Number of subscript which is attached to every element in array is classified as

a) Number of Subscript c) Number of High script
b)Number of Dimension d) Number of superscript

11) CPU fetches the instruction from memory according to the value of _____

a) Program Counter c) Instruction registers
b) Status registers d) Program status word

12) A memory buffer used to accommodate a speed differential is called _____

a) stack pointer c) Accumulator
b) cache d) Disk Buffer

13) Run time mapping from virtual to physical address is done by
a) Memory management unit c) PCI
b) CPU d) None of the mentioned?

14) Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?
a) Fragmentation c) mapping
b) Paging d) none of the mentioned

15) The address of a page table in memory is pointed by
a) stack pointer c) page register
b) page table base register d) Program counter

16) Program always deals with
a) logical address c) physical address
b)absolute address d)relative address

17) The page table contains
a) base address of each page in c) page size
b) page offset d) none of the mentione

18) What is compaction?
a) a technique for overcoming internal fragmentation
b) a paging technique
c) a technique for overcoming external fragmentation
d) a technique for overcoming fatal error

19) Operating System maintains the page table for
a) each process c) each instruction
b) each thread d) each address

20) Virtual memory is
a) Large secondary memory **c) Illusion of large main memory**
b) Large main memory d) None of the above

21) Instructions fetched by CPU according to the value of from memory?
a) Program status word **c) program counter**
b) Status register d) Instruction registers

22) Which is called a memory buffer and it is used to contain a speed differential
a) cache c) disk buffer
b) accumulator d) stack pointer

23) The address generated by CPU is:
a) absolute address c) physical address
b) logical address d) mac address

24) Which of the following option is true for virtual to physical address run-time mapping?
a) CPU **c) memory management unit**
b) Operating system d)PCI

25) —— is used to point the address of a page table in memory.
a) Page register
c) stack pointer
b) Program counter
d) Page table base register

26) ——— Address is always deal with the program.
a) absolute
c) logical
b) relative
d) physical

27) ——- is contained by the page table.
a) page size
c) page offset
b) base address of every page
d) Page

28) For ——— the page table is maintained by the Operating System.
a) each instruction
c) each thread
b) each process
d) each address

29) The operating system is in?
a) high memory
c) either a or d
b) System bus
d) low memory

30) Relocation register are used to :
a) a different address space to processes
b) providing less address space to processes
c) to protect the address spaces of processes
d) providing more address space to processes

31)With limit registers and relocation, each logical address must be _____ the limit register.
a) Not equal to
c) greater than
b) equal to
d) less than

32) The code that ——- is Transient operating system code.
a) stays in the memory always
c) never enters the memory space
b) comes and goes as needed
d) is not easily accessible

33) The size of the operating system during program execution is ——— while using transient code.
a) changed
c) maintained
b) Increased
d) decreased

34) Each partition may contain _____ when memory is divided into several fixed sized partitions.
a) multiple processes at once
c) Two process
b) exactly one process
d) at least one process

35) The degree of multiprogramming is bounded to which extent in fixed-sized partition?
a) All of these
c) the CPU utilization
b) The memory size
d) The number of partitions

36) The strategies like the first fit, best fit and worst fit are used to select a _____.
a) Process from a queue to put in storage
b) process from a queue to put in memory
c) processor to run the next process
d) free hole from a set of available

37) The number of ——can be granted by the Owner of address space.
a) Computers
b) Modules
c) Pages
d) Devices

38) To load and store the system data from memory —— is used.
a) register
b) RAM
c) ROM
d) Buses

39) The stack pointer is a register that points to the:
a) Push of the stack
b) Bottom of the stack
c) Top of the stack
d) Pop of the stack

40) To read the———— I/O instruction transfer is used.
a) Information
b) Instructions
c) Description
d) Data

41) What is true about memory management?
a. Memory management keeps track of each and every memory location
b. It decides which process will get memory at what time.
c. It tracks whenever some memory gets freed or unallocated and correspondingly it updates the status.
d. All of the above

42) In Process Address Space, The loader generates these addresses at the time when a program is loaded into main memory is?
a) Symbolic addresses
b) Relative addresses
c) Physical addresses
d) None of the above

6.File Management

Position in Question Paper **Total Marks-10**

Q.2. a) 4-Marks.

Q.5. a) 6-Marks.

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1. Define File? List and Explain File Attributes.
2. Explain File Operations in detail.
3. Explain file system structure in details
4. Explain Sequential access file method of file in brief
5. Explain Indexed Sequential File Access. Write its Advantages and Disadvantages
6. What is Swapping?
7. Explain Contiguous File Allocation in detail with suitable diagram.
8. Explain Linked File Allocation.
9. Explain Indexed File Allocation.

MCQ Question

(Total number of Question=Marks*3=10*3=30)

1) A basic element of data in a file.
   a) Memory
   b) Record
   c) Field
   d) Value

2) Which one refers to the logical structuring of records?
   a) Physical organization
   b) Logical organization
   c) Structural organization
   d) File organization

3) Which of the following is not an appropriate criterion for file organization?
   a) Larger access time
   b) ease of update
   c) simple maintenance
   d) economy of storage

4) Among from following which one it is a file owned by the operating system
   a) Logical file
   b) Record
   c) Database
   d) Directory

5) Which of the following isn't a part of the file directory?
   a) Attributes
   b) Protocol
   c) Location
   d) Ownership

6) Allocated size of a file comes under?
   a) basic information
   b) address information
   c) access control information
   d) Usage information

7) Which of the following is not a part of the usage information?
   a) Data created
   b) Identity of creator
   c) owner
   d) Last date modified

8) When access is granted to append or update a file to more than one user, the OS or file Management system must enforce discipline. This is
   a) Simultaneous access
   b) Compaction
   c) External Fragmentation
   d) Division

9) The user can load and execute a program but cannot copy it. This process is?
   a) Execution
   b) Appending
   c) Reading
   d) Updating

10) File type can be represented by
   a) File extension
   b) File identifier
   c) file name
   d) none of the mentioned

11) What is the mounting of file system?
   a)attaching portion of the file system into a directory structure
   b) removing the portion of the file system into a directory structure
   c) crating of a file system
   d) deleting a file system

12) A file is a sequence of?
a) bits
b) bytes
c) lines
d) All of the above

13) _____ is a sequence of bytes organized into blocks that are understandable by the machine.
a) object file
b) source file
c) text file
d) None of the above

14) _____ is a sequence of procedures and functions.
a) object file
b) source file
c) text file
d) None of the above

15) What is true about Ordinary files?
a) These are the files that contain user information.
b) These files contain list of file names and other information related to these files.
c) These files represent physical device like disks, terminals, printers, networks, tape drive etc.
d) All of the above

16) What is true about Directory files?
a) These files represent physical device like disks, terminals, printers, networks, tape drive etc.
b) These may have text, databases or executable program.
c) These files contain list of file names and other information related to these files.
d) All of the above

17) Special files: These files are also known as?
a) Character special files
b) Block special files
c) device files
d) Data files

18) In Space Allocation, Which of the following ways are correct to allocate disk space to files?
a) Contiguous Allocation
b) Linked Allocation
c) Indexed Allocation
d) All of the above

19) What is the real disadvantage of a linear list of directory entries?
a) size of the linear list in memory
b) linear search to find a file
c) it is not reliable
d) All of the above

20)What is raw disk?
a) disk without file system
b) empty disk
c) disk lacking logical file system
d) disk having file system

21) Reliability of files can be enhanced by:
a)by keeping duplicate copies of the file
b) making a different partition for the files
c) by keeping them in external storage
d) keeping the files safely in the memory

22) security is only provided at the _____ level.
a) none of the mentioned
b) high
c) central
d) lower

23) The major issue with access control lists is:
a) their maintenance
b) all of the mentioned
c) their permissions
d) their length

24) Many systems recognize three classifications of users in connection with each file (to condense the access control list) :
a) Universe
b) Group
c) owner
d) All of the mentioned

25) In a group, All users get _____ access to a file.
a) different
b) Same
c) similar
d) none of the mentioned

26) by a password If each access to a file is controlled, then the disadvantage is that :
a) it is not reliable
b) all of the mentioned
c) it is not efficient
d) user will need to remember

27) In a different level directory structure :
a) the subdirectories do not need protection once the directory is protected
b) the same previous techniques will be used as in the other structure
c) a mechanism for directory protection will have to apply
d) none of the mentioned

28) The directory protection is handled in Unix to the file protection.
a) None of the mentioned
b) it is not handled at all
c) similar
d) different

29) Such as access by fraudulent people , Destruction of files for malicious reasons is classified as being
a) Unauthorized access
b) Accessed
c) destroyed
d) modified

30) In which records are accessed from and inserted into file Access is classified as;
a) random access
b) Duplicate access
c) direct access
d) Sequential access